

Strengthening State Capabilities: The Role of Financial Incentives in the Call to Public Service

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Abstract

We study a recent recruitment drive for public sector positions in Mexico. Different salaries were announced randomly across recruitment sites, and job offers were subsequently randomized. Screening relied on exams designed to measure applicants' cognitive skills, personality, and motivation. This allows the first direct documentation of the trade-offs facing government in the attempt to attract various personal qualities to enhance state capabilities. We examine the effects of financial incentives on attracting individuals to the public sector, and in so doing present the literature's first experimental estimates of the elasticity of the labor supply facing the employer. Higher wages attract more able applicants as measured by their IQ, personality, and proclivity towards public sector work; higher wage offers also increased acceptance rates, implying a labor supply elasticity of around 2 and some degree of monopsony power. Randomized job offers allow what are to our knowledge the first causal estimates of the effects of job location characteristics, such as commute distance or prevalence of the rule of law, on job acceptance rates.

JEL Classification: H1

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1 Introduction

Despite continuing disagreements among economists over the size and scope of state intervention, two ideas seem beyond dispute. One, the ability of the state to implement policies, raise revenue, and protect property rights, is a central aspect of economic development; and two, improving state capacity requires attracting the resources the state needs to function well.¹

Human capital is a key resource of the state enterprise: producing public goods and raising the revenue necessary to finance such production is surely better done through a reasonably-sized collection of capable agents. But able state agents are only one aspect of a well-functioning, professionalized bureaucracy that is the mark of the modern state (Weber (1911), Evans (1995)).² The state apparatus may also require individuals of integrity or with strong public sector motivation. This of course begs the questions of what are the various dimensions of candidate quality, and how do we attract these qualities to the public sector.

In this paper we investigate the various dimensions of candidate quality and examine the role of incentives, both pecuniary and non-pecuniary, in attracting these qualities to the public sector. An essential ingredient needed to address this question is an estimate of the elasticity of the labor supply curve to the firm (or in our case the government), and we provide the literature's first experimental estimate of this elasticity.³

Our analysis is based on an experiment conducted as part of an official program of Mexico's Federal government called the Regional Development Program (RDP). The program seeks to enhance state presence in 167 of some of Mexico's most marginalized municipalities. To this effect, the program has built a network of around fifty "coordinators" who supervise an even larger network of 350 community development agents. These public agents are to embed themselves in the local communities and identify areas where public good provision is deficient, and work with existing public programs as well as local authorities to remedy such deficiencies. To hire these agents, the RDP conducted a recruitment drive in the months of July and August of 2011, during which positions were advertised, candidates were screened,

¹Abundant work in economics has emphasized the link between government and growth. More recently, Arias (2008), Besley and Persson (2009), and Besley and Persson (2010) have emphasized the importance of the operational capacity of the state.

²For earlier empirical work on the effects of bureaucratic structure on economic performance, see Rauch (1995) and Evans and Rauch (1999).

³Manning (2011) in his excellent review of the literature on monopsony in the labor market states: "An ideal experiment that one would like to run to estimate the elasticity of the labor supply curve to a single firm would be to randomly vary the wage paid by the single firm and observe what happens to employment. As yet, the literature does not have a study of such an experiment." We are aware of only two papers that rely on randomization of wages, by Fehr and Goette (2007) and Goldberg (2010). These papers are more safely interpreted as studying the important but different issue of the labor supply of individuals.

and jobs were offered to selected candidates. This process involved an exogenous assignment of wage offers across recruitment sites, as well as an exogenous assignment of job offers. This dual experimental design allows us to investigate a number of important questions on personnel selection, the development of state capabilities, and the operation of labor markets more generally.

Our investigation yields four distinct contributions. The first is to provide a simple yet detailed description of the candidate pool and to highlight the possible tradeoffs among various personal traits that a recruiter might face. These tradeoffs are central to the practical challenges of strengthening state capabilities. The literature on political selection (e.g. Besley (2006), Caselli and Morelli (2004), Dal Bó and Di Tella (2003), Dal Bó, Dal Bó, and Di Tella (2006), Ferraz and Finan (2009)) emphasizes the importance of traits such as ability and honesty; yet we know of no studies attempting to measure these traits directly in candidates to public service and identify whether a recruiter must be forced to give up one in the quest for the other. Similarly, it would be helpful to determine whether easily observable metrics usually employed in the literature, such as schooling, are good predictors for ability and other desirable traits.

To characterize candidate quality, we measure a wide-ranging set of personal characteristics. These metrics not only involve the standard measures of quality used in labor economics, but also include direct measures of cognitive abilities, measures of personality traits widely used in psychology, and measures of motivation, which relate both to an integrity and public service motivation profile.⁴ Three interesting facts emerge. First, cognitive ability and personal traits are important predictors of the previous wages of candidates, even after controlling for the variables commonly used in economics (e.g. age, gender, and schooling). Second, although years of schooling – a commonly used measure for candidate quality – and cognitive ability are correlated, the magnitude is small. Thus, small but economically meaningful differences in schooling, such as one or two years, are likely to contain relatively little information about a person’s IQ. Finally, cognitive ability is positively correlated with various measures of pro-social behavior and proclivity, public sector motivation, and other positive personality traits. Thus, there does not seem to be a trade-off between cognitive ability and other potentially desirable traits.

Although merely descriptive, these findings have important implications. Several studies document substantial wage dispersion across industries, even after controlling for a wide variety of individual characteristics (e.g. Krueger and Summers (1988), Gibbons and Katz

⁴While we are not the first to introduce personality traits in an economics study (see Borghans et al. (2008) and Anderson et al. (2011)), we are not aware of previous attempts at utilizing as rich a set of measures in combination, nor in the context of a controlled experiment on selection.

(1992), Blackburn and Neumark (1992), Bhaskar, Manning, and To (2002)). Our results indicate that there are important predictors of wages that have not been accounted for in the literature, suggesting that the extent of the wage dispersion that is unexplained by individual characteristics is likely to be overstated (Murphy and Topel 1987). There are several reasons why non-cognitive traits are predictive of wages. One possibility is that higher wages simply attract individuals with better cognitive and non-cognitive skills in the first place.⁵ The second contribution of the paper is to measure the ability of wage increases to do just that.

To investigate whether higher wages attract more able applicants, two different wage offers were randomly assigned across 106 recruitment sites. In one set of recruitment sites an offer of 5,000 Pesos per month was offered, and in another set of geographically distinct places, a wage of 3,750 Pesos was offered. We find that higher wages help attract a better candidate pool as measured by various attributes like cognitive ability, public sector motivation, and other desirable personality traits, as measured by the widely used Big 5 personality inventory (to be described in detail later). For instance, we find that in the places that announced a higher salary, the applicant pool performed 0.09 standard deviations higher on the Big 5 personality test and had an average reservation wage that was 22 percent higher (as measured by previous earnings) than in the low wage places.

The ability of higher wages to attract higher ability individuals is a precondition for well functioning labor markets, but not sufficient to ensure perfect competition nor efficiency. The third contribution of the paper is to test whether Mexico's government has some degree of monopsony power. While a substantial literature in labor economics has debated the properties of the supply function of labor facing firms, clean evidence stemming from exogenous wage variation has been lacking.⁶ Our point estimates indicate that the labor supply facing Mexico's government, while relatively elastic, is far from infinitely elastic: a 33 percent increase in wages led to 35 percent increase in acceptance rates and 25 percent increase in applications, suggesting a labor supply elasticity of around 2. Interestingly, this elasticity is similar in magnitude to the elasticity found in non-experimental studies (e.g. Falch (2011), Sullivan (1989)).

The fourth main contribution of this study is to estimate the causal effect of characteristics of the work environment on the propensity of individuals to accept a job. While an extensive literature in urban economics has examined what characteristics affect em-

⁵Recently, a few papers have explored the role of non-cognitive traits in job search and occupation choice. For instance, Caliendo, Cobb-Clark, and Uhlendorff (2010) find that individuals with higher internal locus control (related to emotional stability) exert more search effort and have higher reservation wages. Cobb-Clark and Tan (2011) find that individuals who perform better on the Big 5 personality tests are more likely to apply for white-collar jobs.

⁶Manning (2011) provides an excellent review of the current state of the literature.

ployment decisions, progress on this topic remains limited – in large part because workers are not exogenously assigned to jobs with different characteristics. This experiment did just that. Candidates who met certain eligibility criteria were randomly selected to work within a particular geographical area, producing exogenous variation in terms of commuting (or relocation) distance, and work environment. We find distance to be a very strong (and negative) determinant of job acceptance. We also study whether better municipal characteristics such as physical security and presence of organized crime or subversive groups affect the chance that a job in the municipality is accepted. The theory is well known that individuals may vote with their feet and relocate to jurisdictions with better public goods (Tiebout 1956). Also, some political economy work has been concerned that threatening environments may worsen the quality of public servants (Dal Bó and Di Tella (2003), Dal Bó, Dal Bó, and Di Tella (2006)). Our data indicate that individuals appear to rationally consider their options when weighing a job offer, and are more likely to accept it when the job is associated with a municipality with better characteristics than the candidate’s own. The effects of distance on acceptance rates are particularly strong. Applicants are 33 percent less likely to accept the position if the municipality they are assigned to is more than 80 kilometers (the median distance) away from their home municipality.

The plan for the paper is as follows. The next section offers some background on the Regional Development Program. Section 3 explains the experimental design and includes an introduction to the type of data and measures we use. In Section 4, we document features of the candidate pool and address several questions regarding the relationship among personal characteristics. Section 5 presents the results concerning the effects of financial incentives on the candidate pool and on filling of job vacancies. It also offers evidence on the non-financial determinants of job acceptance, such as distance and municipal characteristics. Section 6 concludes.

2 Background

In 2011 the Mexican government began a program – the Regional Development Program (henceforth, RDP) – designed to increase the presence of the State in some of its most marginalized and conflict-inflicted municipalities. To achieve this objective, the program has created a large network of public agents – 350 community development agents and the 50 coordinators who supervise them – whose primary responsibilities are to identify the needs of the community and to report them directly to the federal government, who will then seek to channel resources to meet these demands. By establishing a direct link to its citizens,

the federal government hopes to establish a presence in several of the areas where the local government has proven to be ineffective.

The program has been implemented across 10 regions and in 167 municipalities, with each of the 350 community development agents assigned to a particular municipality. These target municipalities, which were selected based on an index of their socio-economic characteristics, represent some of Mexico’s most disadvantaged areas. Table 1 highlights several of the economic and social disparities between the RDP municipalities and the rest of Mexico, which the program hopes to redress.⁷ Compared to other the municipalities in Mexico, RDP municipalities fare much worse by virtually any measure of socio-economic development. Income per capita is almost half of that in the other municipalities, while infant mortality is 50 percent higher. Violence and the presence of drug cartels and subversive organizations are also important concerns for these areas.

3 Experimental design

In this section, we describe the experimental design used to hire the public agents. Experimental variation was incorporated in two important aspects of the hiring process. In the first part, we randomly assigned across recruitment sites two separate wage offers in order to test how wages affect who applies for the position. Based on information gathered during the examination process, eligible candidates were then classified into two categories, those with normal IQ levels (Raven scores of 7, 8, or 9) and those with high IQ levels (scores of 10, 11 or 12). This variation together with that of the wage posting under which each candidate applied for the job create four “type” categories. Each of the 350 vacancies was randomly matched to a type category. In the second stage, eligible applicants were chosen at random and offered a job at one the randomly-assigned municipalities within the candidate’s region; this permits an assessment of how characteristics of the municipalities affect acceptance decisions.

3.1 Job postings

Recruitment took place during the months of July and August of 2011. The recruitment sites were located mostly within the region in localities with a small community college – in hopes of attracting a younger and more educated applicant pool.⁸ Job postings were then

⁷See Section A in the appendix for a description of the variables and data sources.

⁸While most of the localities were located inside the targeted region, for logistical reasons a few were located in neighboring places outside of the region, but that would still attract applicants who would be able to work within the region.

sent out to 113 schools in 106 localities throughout the region.

The job advertisements provided a general description of the job, along with a toll-free number and an email address for interested applicants (see Figure A1 in the appendix). Telephone operators would then register the applicants by recording, in addition to their contact information, answers to some questions regarding the applicant’s education level and employment background. After registering the applicant and depending on the locality in which the person had seen the advertisement, the operator would communicate the salary attached to the job, as well as the date and place for the candidate to show up and participate in the screening session.⁹ All responses to questions concerning the job were given according to a pre-established script. In the end, 1920 individuals registered; 1665 did so by phone, 208 by email, and 47 individuals opted to do both.¹⁰

Salaries were randomly assigned across recruitment sites, with two-thirds of the localities posting a wage of 5,000 pesos per month and the remaining third announcing a wage of 3,750 pesos per month. Table 2 presents summary statistics for the 106 localities in our sample, by wage offering. For each characteristics, we also present the difference between locations with high versus low wage offerings (column 3), and the p -values of associated with a Wilcoxon rank-sum test for equality of the samples (column 4). As expected from the random assignment, there are few meaningful differences between places where a high versus low wage was offered. Out of 15 characteristics, only one variable (share of indigenous population) is statistically significant at the 10 percent level, suggesting that the randomization was effective.

Given the experimental design, estimation of the causal effects of wages on the applicant pool is straightforward. We estimate the following regression model:

$$Y_{ic} = \beta_0 + \beta_1 T_c + X_c' \theta + \epsilon_{ic}, \tag{1}$$

where Y_{ic} is a characteristic of applicant i who applied for the job in locality c . The variable T_c is an indicator equal to 1 if the locality received the high wage announcement, and X_c denotes a vector of observable characteristics of the locality that might affect the applicant pool.¹¹ The error term ϵ_{ic} , is assumed to be independent across localities but in our estimation we allow for arbitrary correlation across observations within the same locality. Given random

⁹All the applicants were interviewed in the schools in which the announcements were posted.

¹⁰Although the advertisement requested that interested applicants register, this was not a requirement. As we later document, individuals who had not registered showed up for the exam, and conversely some individuals who did register did not show up.

¹¹Given the experimental design, we only control for region intercepts or strata dummies when appropriate. Our results are unaffected if we also control for the share of that population that is indigenous, or any of the other variables in presented in Table 2.

assignment, the coefficient β_1 captures the causal effects of wages on a particular feature of the applicant pool.

3.2 Job offers and assignment

To assess their qualifications, in the screening session applicants were administered a three-hour exam designed to measure three broad categories of personal characteristics, namely aptitude, personality traits, and motivations or inclinations towards public sector employment. These data were then entered and analyzed, and the 379 individuals (out of 2254 total applicants) who scored below a 7 on the Raven exam were considered not eligible for employment. The remaining applicants were stratified into one of four groups:

- High wage announcement and high IQ – 754 applicants
- High wage announcement and normal IQ – 520 applicants
- Low wage announcement and high IQ – 344 applicants
- Low wage announcement and normal IQ – 257 applicants

where again “high IQ” is defined as someone who scored above a 9 on the Raven exam.

After randomly assigning these applicant types to each of the 350 vacancies, we then offered the job to randomly selected applicants conditional on type, region of residence, and an indicator for whether the applicant is indigenous.¹² Given that applicants were offered the jobs at random, we can estimate the causal effects of higher wages on likelihood that the applicant accepts the job using a regression model similar to the one presented in Equation 1, where the dependent variable, A_{ic} , is an indicator equal to 1 if the applicant accepted the job. Moreover, given our stratification on the applicant’s type, we can also estimate the differential effects on acceptance rates of a higher wage offer by the candidate’s IQ type:

$$A_{ic} = \gamma_0 + \gamma_1 T_{ic} + \gamma_2 (T_{ic} \times IQ_i) + \gamma_3 IQ_i + X'_{ic} \theta + \epsilon_{ic}, \quad (2)$$

where IQ_i is an indicator for being a high IQ type, and the vector X_{ic} represents a set strata dummies for region and indigenous status. The error term ϵ_{ic} again also allows for arbitrary correlation of observations within a locality.

¹²The last two strata were based on a preference of the program authorities to have the community development agents be able to speak an indigenous language and to work in the same region in which they reside.

When offered a position, candidates are also told the municipality in which they are expected to work. And because the assignment of the municipality was random, we can then estimate how the characteristics of the municipalities affect acceptance decisions. In particular, we estimate the following model:

$$A_i = \alpha_0 + \alpha_1 \left(\frac{Z_j}{Z_i} \right) + X_i' \theta + \epsilon_i, \quad (3)$$

where $\frac{Z_j}{Z_i}$ is a characteristic of the municipality j in which the applicant was assigned to relative to the municipality i in which he resides. In estimating Equation 3, we consider the following municipal characteristics: distance to the assigned municipality, population, temperature, altitude, marginality, rule of law, and presence of a drug cartel.

3.3 Measurement and characterization of candidates' profiles

The enterprise of populating a workforce forces the question of what makes, and how to identify, a good candidate. As explained before, the recruitment involved a screening session where candidates filled in a questionnaire designed to measure three broad categories of cognitive and non-cognitive traits: aptitude, personality traits, and motivations or inclinations that might affect vocation and performance.¹³

In order to measure an applicant's aptitude, the questionnaire included a series of questions intended to assess both raw cognitive ability (e.g. "general mental ability" or IQ), as well as executive skills (e.g. language and computer skills). Decades of research in psychology on the determinants of job performance and occupational attainment reveal these cognitive traits to be an important predictor of earnings, job status, and job performance. Schmidt and Hunter (1998) conducted a meta-study and summarize decades of research in personnel psychology. They concluded that *"the most valid predictor of future performance and learning is general mental ability, i.e., intelligence or general cognitive ability."*

We measured IQ through the Raven Progressive Matrices Set I published by Pearson. The Raven test, which is one of the most widely used tests for abstract mental aptitudes, measures a person's capacity to think logically and solve abstract problems, independent of context or acquired knowledge. The test is comprised of a series of matrices, and for each matrix the test taker observes a visual pattern of abstract figures and must identify the missing piece from a set of available options. This requires the ability to perceive the logic

¹³Roberts (2006) argues that personality is made up of four domains: personality traits (e.g. Big 5), values and motives (e.g. goals, interests), abilities (verbal, quantitative, and spatial intelligence), and narratives (e.g. stories, memories).

of a whole by drawing out the relationships among the parts (a process labeled “education”). It has the advantage of hinging far less than other tests on verbal and other skills acquired through a formal education. This test is also relatively quick and easy to administer, and there are available results from general populations in Mexico and elsewhere for comparison. Due to logistical constraints and the need to screen for various attributes, we administered the Set I, which only contains 12 matrices. Consequently, this shorter version of the test cannot usually discriminate within the top 5% of the distribution.

While the importance of cognitive skills for socio-economic outcomes has been well documented, until recently economists have paid much less attention to the role non-cognitive skills play in explaining economic and social behavior.¹⁴ That personality traits may matter for behavior is not terribly surprising, and in fact several studies have shown that personality measures predict a wide range of outcomes, including education (e.g. Chamorro-Premuzic and Furnham (2003), Heckman, Stixrud, and Urzua (2006)), health (e.g. Roberts et al. (2007)), and crime (e.g. John et al. (1994), Cunha, Heckman, and Schennach (2010)). In terms of job performance, several examples can be cited.¹⁵ For instance, Judge and Barrick (1999) report on a longitudinal study started in 1928 where nearly three hundred individuals born in Berkeley and Oakland were followed throughout their lives, with measurements of psychological traits starting in childhood. This study shows general mental ability and personality traits measured in childhood correlate with measurements later in life, including career success. Anderson et al. (2011) find that personality traits are better predictors of credit scores and job persistence than traditional economic preferences such as time preference and attitude to risk. Using a representative dataset from Germany, Störmer and Fahr (2010) find that individuals who are conscientious and agreeable are much less likely to be absent at work, whereas absenteeism is much higher among neurotic individuals. Drago (2011) uses data from the NLSY to show that self-esteem increases log earnings by 18 percent.

While the literature has explored the effects of a wide range of personality traits, over time psychologists have grouped them into five categories labeled “the Big 5.” These traits are Openness to experience, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. These traits are defined without reference to any context and also encompass clusters of more specific personality features. Conscientiousness is typically related to three characteristics: achievement orientation, organization and orderliness, and responsibility. Agreeableness is related to being empathetic and likeable, caring and cheerful; Extroversion to being outgoing

¹⁴The relevance of personality traits is well established in psychology (see for example Schmidt and Hunter (1998)). Almlund et al. (2011) provide an excellent and thorough survey of the existing literature in both psychology and economics.

¹⁵See Barrick and Mount (1991) and Salgado (1997) for meta-studies on the relationship between personality and job performance.

and sociable or gregarious; Neuroticism to having mood swings, emotional instability, feelings of victimization and feelings of guilt (those scoring high on neuroticism are more likely to suffer from anxiety, irritability, and depression). Openness to experience is related to curiosity, a taste for intellectualizing, and acceptance of unconventional things, and tends to correlate with IQ, although it is itself more directly an inclination than a capability. John, Naumann, and Soto (2008) offer an overview of the history and evolution of research on the Big 5 characteristics as well as an analysis of the comparative performance of different measurement instruments. Although mostly elicited through self-reports, the five factor categorization is stable to reports by others (McCrae and Costa 1987) and over time (McCrae and Costa 1990). As with any measure based on self-reports, faking is a possibility but research on distortions tends to show that tests remain valid (Hough and Ones 2002).

We measured the Big 5 personality traits using the Big Five Inventory (BFI) developed by John (1990). This is a 44-item questionnaire. An important advantage is it has been translated into Spanish for deployment in Mexico, and its use validated there by a research team involving some of the original developers of the BFI (Benet-Martínez and Oliver 1988). These authors did not find important differences between the Mexican and US populations. More generally, John, Naumann, and Soto (2008) report on extensive studies validating the Big Five Inventory both for internal consistency in terms of test-retest reliability, as well as convergence with other personality inventories such as McCrae and Costa (1992) NEO Five Factor scale.

Besides aptitude and personality traits, we strove to capture motivations and inclinations that might affect the vocation for public service. In the last decade a small literature on public sector motivation has revolved around a measure called the Perry Index of Public Service Motivation, which was proposed by Perry (1996). This measure relies on a questionnaire in which the subject must express agreement or disagreement with each of thirty-two statements. The questionnaire elicits opinions on the attractiveness of politics, public service, and prosocial activities. The questionnaire is subdivided into six modules labeled “Attraction to Policy Making” (which includes items such as “Politics is a dirty word”), “Commitment to Policy Making,” “Social Justice,” “Civic Duty,” “Compassion,” and “Self-Sacrifice.” We later report the correlates between these and other measures in our dataset of candidates. The emerging literature on public service motivation has studied the link between the Perry measure and antecedents of prosocial behavior – something that we also do – but we are not aware of any systematic studies linking measures of personality and public service motivation to decisions to accept an exogenously offered job.

4 The applicant pool: structure and characteristics

In this section we describe the pool of applicants. This description will help validate some of the measures used to describe candidates and will report correlations between aptitudes, personality traits, and inclinations. This will not only highlight the importance of personality traits in the quality differentiation of labor, but will also inform the problem of whether or not the quest to build up a workforce faces tradeoffs among desirable traits. We will analyze how personality characteristics relate to previous wage earnings and compare the candidate pool to the general population.

4.1 Main measures for individual characteristics

Table 3 shows summary statistics for four different families of candidate characteristics, namely basic socio-demographics (Panel A), aptitudes and skills (Panel B), personality traits (Panel C), and prosocial behavior (Panel D). The applicant pool is made of a majority of males (60%), and the average age is 27 years old. Many of these candidates were studying and only a small fraction of them (14%) were employed at the time they applied. Forty percent of the candidates self-identify as belonging to an indigenous people. The average monthly wage reported for the last occupation of record is \$4,216, which lies squarely between the two wages offered in the program (\$3,750 and \$5,000 Mexican pesos per month). Only 1% of the candidates were endorsed by someone in the network of coordinators.

The candidates reported an average of 14 years of schooling. Although some over-reporting is possible, this average mostly likely reflects how the recruitment was targeted towards localities with community colleges. Only 12% of the candidates reported to be able to speak English, while a third reported to be proficient in at least one indigenous language. Ninety-two percent reported to use computers regularly. The average IQ score in the Raven Matrices test was 8.77. The median score is 9, which matches what studies have revealed for US and UK populations (Pearson 1998). This is also consistent with a striking fraction of the candidates (39%) making a mistake when confronted with a simple hypothetical choice between a certain outcome of \$2.5 million and a lottery with equally probable prizes of \$2.5 and \$5 million.

Panel C in Table 3 reports summary statistics for personality traits. Except for religiosity (equal to 1 if the candidate reports to practice his or her religion, something 70% of candidates claim to do), the personality traits are those in the Big 5. We also created an index of the Big 5 as an equally-weighted average of the z-scores of each dimension, reversing Neuroticism which is widely considered to be a negative characteristic.

Panel D displays summary statistics for various measures of prosocial behavior, like engaging in volunteer work (71%), having voted in the last election (76%),¹⁶ or having run for elective office (11%). The variable “Contribution VCG” tracks the contribution in a hypothetical voluntary contribution game where the person must decide how much out of \$50 to contribute to a joint account, and how much to keep. Money in the joint account is multiplied by a factor of 1.4 and then divided between the two people participating. While the Pareto efficient allocation is to contribute all \$50, the Nash equilibrium is to contribute zero. “Money claimed as dictator” tracks the amount the person keeps out of \$50 in a hypothetical dictator game. In both games, we find that individuals, on average, contribute approximately half of their hypothetical endowment. “Rejected ultimatum” records whether the person would reject an offer of \$1 in a hypothetical ultimatum game where the proposer keeps \$49. We find that 55 percent of the applicants exhibit traits of negative reciprocity. While the unincentivized nature of these various hypothetical games may be a limitation, there is some evidence that choices in incentivized experiments are often not very different from choices in hypothetical games (Ben-Ner and Levy 2004). Moreover, as we will see, the choices made do in fact correlate with the rest of the declared prosocial activities.

The variable Integrity (projection bias) measures one’s view about the likelihood that others will engage in honest behavior (concretely, returning a lost wallet). A pessimistic attitude towards the moral behavior of others is thought to correlate with weakness of one’s own moral standards due to what psychologists’ have termed projection bias – the belief that others must conform to our own inclinations. This measure of integrity correlates strongly (t-statistic above 3) with whether or not the individual agrees with the statement that laws are made to be broken, which is also a common proxy for a lack of respect for laws and moral standards.

4.2 Correlation structure of personal characteristics

4.2.1 Are there visible trade-offs in candidate quality?

Table 4 displays pair-wise correlations between the Raven score, age, schooling, and behavior on simple choices between a certain alternative and risky lotteries. All the correlations mentioned in what follows are significant at the 1% level. IQ correlates negatively with age ($\rho = -0.13$) and positively with schooling ($\rho = 0.26$), which conform with established knowledge about IQ correlates. A higher IQ also correlates negatively with choosing the dominated risk-choice option.

¹⁶According to the International Institute for Democracy and Electoral Assistance (IDEA), turnout for the presidential 2006 election in Mexico was short of 59%.

In Panel *A* of Table 5 we observe that IQ correlates positively both with the Big 5 index and the Perry index for public sector motivation, negatively with assigning fame an important role, and positively with considering people trustworthy, as well as with the integrity measures. There is also a very strong and positive association between the Big 5 Index and the Perry index.

Based on these correlations, there does not seem to be a trade-off between cognitive ability and other potentially desirable traits, such as taking public service seriously. The obvious caveat is that the data could reflect the possibility that more intelligent individuals are able to respond to a screening survey in a more strategic manner. For example, the strategic motive may lead smarter individuals to express disagreement with the statement that laws are meant to be broken even if they actually agree with the statement. Two observations are worth making however. One is that the measure of integrity based on projection bias, which is unlikely to be manipulated, is also positively and significantly correlated with IQ. The second is that IQ does not predict self-reported forms of prosocial behavior that a strategic candidate would manipulate in similar fashion (see Table 7, to be described in detail later).

In order to better explore the connection between cognitive ability and personality traits and motivations, Panels *B* and *C* in Table 5 unbundle the Big 5 and Perry indices. The most noteworthy aspect in Panel *B* is the significant association between IQ and each one of the Big 5 characteristics, where the strongest positive association is with Openness, and where the connection with Neuroticism is negative. Although theoretically intellectual ability should be unrelated with non-cognitive traits (Eysenck 1994), these correlations are typically found in the literature (Ackerman and Heggestad 1997). For instance, Moutafi, Furnham, and Tsaousis (2006) find a strong relationship between IQ and Neuroticism, whereas Chamorro-Premuzic, Moutafi, and Furnham (2005) find that Openness also positively predicts performance on the Raven test. Almlund et al. (2011) report an adjusted R^2 of 0.18 when regressing performance on the Raven test on the Big 5 personality traits.¹⁷

The Perry index shows a similar pattern of correlation with the Big 5 characteristics. Panel *C* shows that while the Big 5 index correlates positively and significantly with all subcomponents of the Perry index, IQ does not. In particular, IQ shows no correlation with the self-sacrifice and the civic duty components.

¹⁷If we run a regression of the Raven scores on the Big 5 personality traits, we find an adjusted R^2 of 0.05 and that Openness (positively), Conscientiousness (positively), and Neuroticism (negatively) are the strongest predictors.

4.2.2 Do motivations matter, and are self-reported figures trustworthy?

Table 6 shows correlations among forms of prosocial behavior, and these correlations display an intuitive pattern. While religiosity correlates strongly with charity engagement, it does not with more civic forms of prosocial behavior such as voting. However, those who have run for elective positions appear more likely to vote and engage in other, less strictly political forms of prosocial behavior. As expected, the indirect integrity measure based on projection bias, operating mainly through the attribution of benevolent motives to others, correlates positively and strongly with the measure of trust. Having run for elective office however correlates strongly with the trust measure but not with the integrity measure.

Table 7 expands the examination of the link between measures of personality and motivation on the one hand, and measures of behavior on the other. This table shows that the personality traits, embodied both in the Big 5 and the Perry measure for public sector motivation, are good predictors of prosocial behavior. IQ, however, is not, which raises an important point. If smarter candidates were manipulating their responses to questions on integrity, trust, and other forms of other-regarding attitudes, we would expect the positive association between IQ and “desirable” traits to continue. But IQ does not predict any form of prosocial involvement outside of the screening session, nor does it predict more cooperative behavior in the voluntary contribution game.¹⁸ Instead, as seen in column 7, smarter candidates keep more money when playing a dictator game and are less likely to reject an unfair offer in an ultimatum game, which are both rational in purely game theoretic terms although not proxies for “nice” behavior. The connection between the personality and motivation measures with prosocial behavior indicates that these personal traits might be important elements in the characterization of candidate profiles.

4.2.3 How good is schooling as a proxy for candidate quality?

Previous work on the quality of public servants (e.g. see Besley and Reynal-Querol (2009) for executive leaders; Dal Bó, Dal Bó, and Snyder (2009) for national legislators, Ferraz and Finan (2009) for local legislators) treats educational attainment as a measure of quality. While educational attainment certainly relates to a dimension of quality, one wonders

¹⁸An unpacking of the personality measures (not reported in the table) shows an intuitive pattern. Traits such as agreeableness and extroversion are tied to most prosocial activity, except in the case of voting, which is a legal obligation, and is significantly related to conscientiousness. Similarly, educational attainment appears relevant only for voting. We also find that agreeableness and conscientiousness are positively correlated with giving in the dictator game, which is consistent with the results found in Ben-Ner and Kramer (2011). Also, Dohmen et al. (2008) find that agreeableness is negatively correlated with negative reciprocity. While we also uncover this correlation using play in the ultimatum game, we find a negative correlation between openness and negative reciprocity.

whether it reflects closely the cognitive skills, personality traits, and motivation of those officials. As stated before, education plays no role in explaining prosocial engagement. But perhaps it is a tight summary of IQ and personality characteristics. Column 9 of Table 7 reports a regression of years of schooling on IQ and various personal characteristics. Schooling is significantly associated with IQ and the Big 5 index in the multivariate regression, which is consistent with the studies cited before indicating that higher IQ and better personality traits correlate positively with academic success and occupational status.¹⁹ Although the association between schooling and IQ is statistically significant, the magnitude of the point estimate implies that increasing someone’s IQ score by a full standard deviation will increase schooling by 0.4 years, which corresponds to 0.16 of a standard deviation. Thus, small but economically meaningful differences in schooling such as one or two years are likely to contain relatively little information about a person’s IQ.

4.3 Who applies?

How does the applicant pool compare to the national population? For each region of the program, Figure 1 compares the distribution of the applicants’ previous wages to the distribution of monthly wages for the general population, as reported in the 2010 Census. Overall the distributions of wages are quite similar across these regions. Only in a few of the regions does the distribution of applicants’ wages lie to the right of the distribution for the overall population. Moreover, the two wage offerings of 3,750 and 5,000 correspond to 50th and 70th percentile of the wage distributions.

Although the applicants appear similar in terms of their previous earnings, compared to the population they are actually quite different along some other socio-economic characteristics. As seen in Table 8, the applicants are much younger, more educated, and less likely to have been employed. And with the exception of a few regions, the applicant pool is also less indigenous.²⁰

In Table 9, we use data from the 2005 MxFLS household survey to examine whether the applicant pool differs from the national population in terms of their IQ, attitudes, and other

¹⁹If we estimate a regression of years of schooling on the Big 5 characteristics separately, while controlling for age, gender, and IQ, we get the following set of standardized regression coefficients for Openness, Conscientiousness, Extroversion, Agreeableness, Neuroticism: $\{0.063^*, 0.076^*, 0.061^*, -0.047^*, -0.015\}$, where the asterisk indicates statistical significance. For comparison van Eijck and Graaf (2004) find standardized beta coefficients of $\{0.14^*, 0.05^*, -0.07^*, -0.07^*, -0.09^*\}$ for the Dutch Population in 1988, whereas Almlund et al. (2011) find standardized beta coefficients of $\{-0.03, 0.18^*, -0.02, -0.03, -0.09^*\}$ for a nationally representative sample of Germans, ages 21-94 in 2004.

²⁰All the differences in Table 8 are statistically significant at the 1 percent level, except for the share of the population that speaks an indigenous language in the region of Sierra Tarahumara.

personal traits.²¹ Table 9 shows that compared to the national population (in 2005) those responding to the job ad scored almost 0.75 standard deviations higher on the Raven Matrices and are 4.5 percentage points less likely to choose a dominated option in a hypothetical risk game. The applicant pool is also much more optimistic about their money prospects, and exhibits more integrity, as measured by the tendency to attribute benevolent motives to others and disagree with pro - law-breaking statements.

4.4 Who earns more?

What traits and skills appear to be valued by the market? As part of the screening exam, and as is common on most job applications, candidates were asked to provide information about their last three places of employment.²² This information included length of employment, employer's contact information (in order to verify the information) as well as previous wages. In Table 10, we present estimates based on variations of a standard Mincerian wage regression, using the wage reported in the last employment as a dependent variable.²³ In columns 1-6, we estimate a semi-log specification, and hence restrict the sample to positive wages, whereas in column 7 we use wages in levels as the dependent variable and also treat declarations of no wages as zero wages.

In columns 1 and 2, we see that these applicants' data yield estimates similar to the ones typically found in the existing literature. For instance, the salaries that the men report are on average 15-18 percent higher than those reported by females. This is consistent with estimates within Mexico, but also with those documented in the U.S. literature (e.g. see Blau and Kahn (2006)). The coefficients on age and its squared-term imply an age-earning profile that peaks at around 51 years of age, and we also find a correlation between wages and the applicant's height; both of which are again consistent with the existing literature (e.g. Persico, Postlewaite, and Silverman (2004)). The returns to schooling, which are around 3.8 percent, are a bit small. But this is likely to reflect the fact that, as said before, the program targeted a younger and more educated pool of potential applicants.

In column 3, we find, unsurprisingly, that IQ appears significantly correlated with earnings even after controlling for schooling. The coefficient implies that compared to the median

²¹The Mexican Family Life Survey (MxFLS) is a nationally-representative, longitudinal database which collects a wide range of information on socioeconomic indicators, demographics and health indicators on the Mexican population (Rubalcava and Teruel 2008).

²²Based on a recent survey of a representative sample of U.S. workers, Hall and Krueger (2010) report that 50 percent of workers claimed that their new employers learned the workers' earlier pay rates before making them job offers. Although we do not have comparable statistics for Mexico, we suspect they are similar if not higher.

²³The results are similar if we use the average of all the reported wages in the last three jobs as the dependent variable.

applicant, applicants who scored 3 points higher were earning salaries that were 6.3 percent higher. The inclusion of IQ only decreases the point estimate on years of schooling by about 15 percent. This again speaks to the fact that years of schooling may be a poor proxy for intelligence, and an insufficient statistic for quality.

In addition to exploring these standard labor economics variables, in columns 4-7, we report results on the connection between earnings and other personal characteristics. The Big 5 are strongly correlated with earnings, but not always in the expected way. Neuroticism is significantly and negatively correlated with wages, as expected, but Conscientiousness is insignificantly related with earnings. In unreported explorations, Conscientiousness is a strong predictor of wages when we exclude age. But the inclusion of age, which does not appear to be a norm in the psychology studies of career success, eliminates Conscientiousness as a significant correlate of earnings (age and conscientiousness are positively and significantly correlated in our sample, which is consistent with Roberts and Mroczek (2008) who show that individuals become more conscientious with age).²⁴ In addition, Extroversion is significantly and negatively correlated with wages. The effect sizes for both Neuroticism and Extroversion are of comparable magnitudes to the one reported for IQ, suggesting that personal traits are also important predictors of earnings.²⁵

Although these findings are merely correlations, they do suggest that personality can affect labor market outcomes through channels other than education (as reported in Table 7).²⁶ This of course raises the question of what these other channels might be. Some studies have argued that such personality traits as emotional stability could directly affect absenteeism or job search (Störmer and Fahr (2010), Caliendo, Cobb-Clark, and Uhlendorff (2010)), or occupational choice (Heckman, Stixrud, and Urzua (2006), Cobb-Clark and Tan (2011)). In the next section, we examine the effects of wage offerings on the personal traits of the applicant pool.

²⁴While it may seem puzzling given the meta-studies of Barrick and Mount (1991) and Salgado (1997) that we do not find a positive association between conscientiousness and wages, both Mueller and Plug (2006) and Nyhus and Pons (2005) find similar results to ours after adjusting for IQ and other socio-economic characteristics.

²⁵A one standard deviation increase in Raven score is associated with an 8 percent increase in wages; whereas, Neuroticism and Extroversion are associated with a 9.5 and 7.4 decrease in wages, respectively.

²⁶Needless to say, there are numerous identification issues that can arise when trying to estimate the effects of personality on outcomes (Borghans et al. (2008) offer a good discussion). While the vast majority of the literature reports only correlations, there are two notable exceptions. Using data from the Project STAR experiment, Chetty et al. (2010) find that students assigned to small classes have significantly higher wages later in life, despite the fact that by the 8th grade they were no longer performing higher on standardized tests than the control students. The program did however have positive effects on personality and these effects persisted over time. A similar set of results for the students exposed to the Perry Preschool school were also found by Heckman et al. (2010). They show that the long term effects of Perry Preschool program were primarily through socio-emotional channels.

5 The role of financial incentives

In this section, we present the main empirical results of the experiment. We begin by presenting a simple theoretical model that will help frame the discussion of our empirical findings, and highlight some of the practical aspects and pitfalls facing the estimation of the labor supply curve facing the firm. We then present the causal effects of offering higher wages on attributes of the applicant pool. We then report estimates of the elasticity of the labor supply curve facing the government, and how characteristics of the municipality in which the employee has to work affect these acceptance decisions.

5.1 Theoretical framework

Consider an employer for whom each employee produces one unit of output, and suppose that this unit is priced at p in the market for goods, where the producer is a price-taker. There are no fixed costs of production. Thus, the employer will maximize profits π as given by,

$$\pi = (p - w) S(w),$$

where S is the labor that is supplied to the firm at wage w . If the producer selects w to maximize profits, we immediately get from the first order conditions that $\frac{p-w}{w} = \frac{S[w]}{\frac{dS(w)}{dw}w}$, or, $\frac{p-w}{w} = \frac{1}{\eta}$, which is the familiar relation stating that the profit margin from the marginal employee must equal the inverse of the labor supply elasticity η . Employers that are price-takers in the labor market correspond to an infinite elasticity, in which case profit margins are zero and markets are efficient. Part of our task in this paper is to obtain an experiment-based measure of η . Doing this using real recruitment data, however, requires thinking about the actual sequence of actions that lead to filling a vacancy.

Labor supply elasticity as a construct - some challenges to estimation

Suppose that a firm advertises a job at two different wage levels, and attains two levels of recruitment, yielding two pairs of wage-employment data. The first inclination might be to compute the arc-elasticity defined by the two wage-employment pairs. This could be misleading. Let us write the effective recruitment by the firm as $S = M \times \nu \times \omega \times \alpha$ where M captures the size of the population that gets to learn about the job opening, $\nu \equiv \frac{N}{M}$ is the share of those who, being informed about the job, decide to apply, $\omega \equiv \frac{O}{N}$ is the share of applicants that receive an offer, and $\alpha \equiv \frac{A}{O}$ is the share of those who, having received an offer, accept it. It is immediate that the elasticity of employment can be written as the

sum of the elasticities of its components, i.e., $\frac{dS}{dw} \frac{w}{S} = \xi_M + \xi_\nu + \xi_\omega + \zeta_\alpha$. Now suppose that the firm advertised more strongly the jobs that pay higher wages and that more offers per candidates were made for those positions. Then $\xi_M, \zeta_\alpha \neq 0$. These two elements, however, do not reflect on the willingness of workers to accept a job. They correspond to actions taken by the employer. Thus, the use of employment-wage data to measure the labor supply elasticity confounds aspects of the labor supply with aspects of the labor demand.

An advantage of our design is that the advertisement form and intensity was kept constant across wage conditions so we know M does not vary. We also have the information to compute each of the other elements. The two elements that are important to characterize a real-life supply function facing the firm are the effects of wages on the size of the candidate pool ξ_ν and on acceptance decisions ζ_α . We now expand the basic model of labor supply facing the firm to relate these elements to the labor supply elasticity η .

Enriching the model

Suppose every worker faces two periods with no discounting. In period 1, he has to decide whether to show up to an interview, and pay a cost $c > 0$. Doing this allows him to be eligible to receive an offer with some probability α , in period 2, and this offer will be for a job that pays a salary w and is associated with a vector of conditions X . That job will then yield utility $U(w, X) \equiv u > c$. To save on notation, let us for now obviate the dependence on X and let us assume $\alpha = 1$. The individual has an expected reservation utility for period 2 equal to $v_i \geq 0$. However, at the beginning in period 2 the individual will see the realization of a state ε that affects his reservation utility. Thus, the individual's realized reservation utility in period 2 will be $U_i^r = v_i + \varepsilon$. Individuals are indexed by their personal v_i , which is distributed with function $F(v)$ and density $f(v)$ (in what follows we obviate the subscript i when no confusion arises). The variable ε is unbounded and is distributed according to function $G(\varepsilon)$ and density $g(\varepsilon)$.

The candidate faces a different decision in each period.

Period 2. Each individual that paid c and attended the interview receives an offer (as $\alpha = 1$). The individual accepts iff

$$u \geq v + \varepsilon$$

which occurs with probability $G(u - v)$. Thus, individuals with a higher mean reservation utility are less likely to accept the job. Individuals that reject the offer, or that did not attend the interview get $v + \varepsilon$.

Period 1. The candidate must decide whether to pay c to buy the option of receiving

an offer that might be better than the realized reservation utility. The expected payoff from not attending the interview for a type v is,

$$E(v + \varepsilon) = v.$$

The expected payoff from attending the interview is

$$I = -c + G(u - v)u + [1 - G(u - v)](v + E(\varepsilon|\varepsilon > u - v)),$$

i.e., the value of attending the interview is that if $\varepsilon < u - v$ (realized reservation utility is low), the candidate has the option to take the job.

Thus, a type v is indifferent between attending the interview and not iff v satisfies,

$$v = -c + G(u - v)u + [1 - G(u - v)](v + E(\varepsilon|\varepsilon > u - v)).$$

Lemma 1 a) *There exists a finite type \bar{v} that is indifferent between attending the interview and not. All $v \leq \bar{v}$ prefer to attend and enter the candidate pool, while all $v > \bar{v}$ stay out.*

b) *The separating type \bar{v} is increasing in $u(w)$.*

Proof: a) Note the left hand side (LHS) is the identity function in a space where v is represented in the x-axis. The right hand side (RHS), I , is a continuously increasing function of v , with intercept $-c + G(u)u + [1 - G(u)]E(\varepsilon|\varepsilon > u - v) > 0$ and limit $v - c$ as $v \rightarrow \infty$. By continuity, the RHS must cross the LHS from above at least once. Given $[1 - G(u - v)]E(\varepsilon|\varepsilon > u - v) = \int_{u-v}^{\infty} \varepsilon g(\varepsilon) d\varepsilon$, note the slope of I is,

$$-g(u - v)u + g(u - v)v + [1 - G(u - v)] + (u - v)g(u - v) = 1 - G(u - v) \in (0, 1),$$

guaranteeing a single intersection.

b) We need to show that I is increasing in u . Note $\frac{dI}{du} = G(u - v) > 0$. ■

Accepting now that there is a type \bar{v} that separates those who show up from those who do not, we now know the size of the applicant pool is exactly $F(\bar{v})$, and that this pool increases in size with w .²⁷

However, not all types below \bar{v} who become candidates will accept the offer. A type v will accept only if $\varepsilon < u - v$. So the labor supply facing the firm S is the probability that

²⁷Obviously, if v is bounded, it is possible to have a corner solution where all individuals enter the applicant pool, and where the applicant pool becomes unresponsive to (small enough) variations in the wage.

each type accepts, integrated over all types in the candidate pool:

$$S = \int_0^{\bar{v}} G(u - v) f(v) dv.$$

The labor supply elasticity facing the firm is $\frac{dS}{dw} \frac{w}{S}$. The wage works by raising $u = U(w)$. This has an inframarginal effect by raising the probability that each type in the candidate pool accepts, and a marginal effect by enlarging the pool. Remember \bar{v} is characterized by the intersection between v and a function that contains $u = U(w)$. Because the effect of an increase in u following a raise in wages is to increase \bar{v} , the pool will be enlarged. It is easy to see that $S = F(\bar{v}) \int_0^{\bar{v}} G(u - v) \frac{f(v)}{F(\bar{v})} dv \equiv F(\bar{v}) \bar{G}$, where $F(\bar{v})$ represents the size of the candidate pool, and \bar{G} is the average acceptance rate. We can then write the labor supply elasticity as

$$\begin{aligned} \frac{dS}{dw} \frac{w}{S} &= \left[f(\bar{v}) \frac{d\bar{v}}{dw} \bar{G} + F(\bar{v}) \frac{d\bar{G}}{dw} \right] \frac{w}{S} \\ &= \frac{f(\bar{v}) \frac{d\bar{v}}{dw} w}{F(\bar{v})} + \frac{d\bar{G}}{dw} \frac{w}{\bar{G}} \\ \frac{dS}{dw} \frac{w}{S} &= \eta = \xi_{F(\bar{v})} + \xi_{\bar{G}}, \end{aligned}$$

which means that the elasticity of the labor supply facing the firm can be written as the sum of the elasticity of the size of the candidate pool and the elasticity of the average acceptance rate. We will estimate these two magnitudes to provide an experimental estimate of the labor supply elasticity η .

It is worth noting that while $\xi_{F(\bar{v})}$ is necessarily positive, it is not necessarily true that the average acceptance rate must go up with the wage. On the one hand, a higher wage will make all the inframarginal types in the pool more likely to accept, but the marginal type that is added is less likely to accept. Thus, the acceptance elasticity has an ambiguous sign if individuals are more likely to sort into the applicant pool if they expect a worse reservation utility.

5.2 Effects of financial incentives on the applicant pool

Table 11 presents the estimation results for a series of models based on Equation 1. Each row represents a separate regression. Column 1 presents the number of observations used in the estimation. In column 2 we report the mean of the dependent variable in the places that were offered a low wage, whereas in column 3 we present the estimates of the coefficient,

β_1 , which measures the difference in the dependent variable between high versus low wage places after adjusting for regional fixed-effects. Column 4 presents the p -values associated with Wilcoxon’s rank sum test. In column 5, we report p -values that control for the false discovery rate (FDR); that is, the proportion of rejections that are type I errors. These FDR-adjusted p -values account for the fact that we are testing multiple outcomes (Anderson 2008).

In row 1, we see that places that offered higher wages (*treatment areas*) attracted 4.8 more individuals on average than the places with the low wage announcement (*control areas*). But although this represents a 25 percent increase over the control areas, the difference is not statistically significant. Higher wage places did however attract applicants with potentially higher reservation wages. In places where a higher wage was announced, applicants were much more likely to be currently employed and to have earned a higher salary in their previous employment. The previous salaries of applicants in places with the high-wage announcement are on average 820 pesos (\$80) higher than applicants in the low wage places; a difference that represents a 22 percent increase from the average among the control. While the results in Panel A of Table 11 suggest a higher mean, Figure 2 shows that the higher wage offering also increased the upper bound.²⁸ Whereas in the control areas, the maximum wage was 14,000 pesos, in the treatment places, the max wage was above 20,000 pesos.²⁹ It is also interesting to note that higher wages induced a shift in the distribution, suggesting that low-wage applicants were discouraged from applying—a fact to which we return below.

Although these findings suggest that a higher wage offer attracted individuals with higher reservation wages, one potential caveat to this interpretation is that these wages are self-reported. Moreover, if applicants are over-reporting their wages, it is likely to be correlated with the treatment. There are at least four reasons why this is an unlikely explanation of the results. First, in addition to the wage, applicants were asked to provide the contact information of their previous employers. It is reasonable to assume that applicants were less willing to misreport lest their previous employer would be contacted. Second, the applicants were also asked to sign the questionnaire verifying that all the information provided was truthful and accurate. Third, we do not find any evidence that applicants who scored high in terms of integrity reported differentially lower wages by treatment assignment. Finally, and as we discuss momentarily, the higher wage announcement also attracted individuals

²⁸We can reject the hypothesis that the two distributions are the same, based on a Kolmogorov-Smirnov (p -value=0.00). The differences between treatment and control areas in wages at each of the quintiles are also statistically significant.

²⁹Recall that most of these applicants are unemployed and hence report past, rather than current, wages. Currently employed individuals may still apply to a job paying less than their current wage if they are pessimistic about their prospects in the current job

with skills like IQ, which cannot be manipulated.

As we see in Panel *B*, the candidates in the treatment areas scored 0.5 points higher on the Raven exam. This represents an increase of 0.185 standard deviations relative to the control. This increase appears to have come from both an increase in the number of above average IQ candidates but also a decrease in the number of below average IQ candidates, which is again consistent with the shift in the previous wage distributions. This is an interesting feature suggesting that candidates weigh the costs and benefits of sinking the cost to attend a screening session. When the announced wage is higher, and the expectation is that more high IQ candidates will show up, those with lower IQs anticipate a lower chance of success and desist. Consistently with the effects of wage announcement on average IQ, in places that offered the higher wage applicants were much less likely to choose a dominated strategy in the risk game.

While we find significant differences on questions that measure an individual's IQ, we do not find differences on other self-reported market skills. For instance, higher wages are not necessarily more likely to attract individuals with more education, or who can speak English or use a computer. Again, the lack of effects along these dimensions is mostly likely a manifestation of the recruitment, which led to an applicant pool with high schooling and where 92 percent know how to use a computer.

As reported in Panel *C*, we do not find many differences between the applicant pools in terms of age and gender. Higher wages do seem to attract taller individuals, which given the literature on height and wages is consistent with the fact that individuals with higher reservation wages are attracted by higher wages.

The remaining panels of Table 11 examine how wages affected the applicant pool in terms of indicators of prosocial behavior, personality traits, and motivation for public service. In Panel *D*, we find that in treatment areas the applicant pool is much less religious, more likely to be blood donors, and more inclined towards negative reciprocity as measured by play in the ultimatum game. We do not find evidence that higher wages attracted individuals who are more virtuous or averse to inequity.

From Panels *E* and *F*, we see that higher wages attracted individuals who scored higher on both the Big 5 personality traits and the Perry index. In terms of the Big 5 traits, higher wages attract individuals who are more conscientious, less neurotic, and to a lesser extent individuals who are more open. In other words, higher wages appear effective at attracting candidates with a better personality profile. In Panel *F*, we find that the Perry index is 0.10 standard deviations higher in the high wage pool than in the lower wage group. Much of this effect is driven by attracting individuals who find public sector work attractive, are compassionate, and strongly believe in social justice.

In sum, we find strong evidence that higher wages attract individuals with higher reservation wages, more market skills, and who score better on the Big 5 personality test. While enticing qualified applicants to apply with higher wage offers is a necessary first step for building up the human capacity of the State, it is by no means sufficient. In the next section we examine whether higher wages help fill vacancies.

5.3 Effects of financial incentives on filling of vacancies

In this section, we examine the extent to which higher wages help the recruiter to fill vacancies. Table 12 presents the estimation results for a series of models based on Equation 1, where the dependent variable is equal to 1 if the person to whom a job was offered accepted the position and 0 otherwise.³⁰ Among individuals offered a salary of 3,750 pesos, 42.9 percent accepted the position. An offer of 5,000 pesos increased acceptance rates by 15.1 percentage points, or approximately 35.2 percent (see column 1). If we incorporate the possibility that higher wages may have led to a 25 percent increase in the number of applicants, then as we documented in Section 5.1 the estimates in column 1 imply a labor supply elasticity to the government of approximately 1.82.

In column 2, we re-estimate the model including several of the characteristics of the applicant pool that differed across the two wage offers. The inclusion of these additional individual characteristics does not affect our point estimate (point estimate = 0.151; s.e. = 0.057). Moreover, we do not find that many of these characteristics or personal traits necessarily predict acceptance rates. Only years of school negatively predicts acceptance rates. While this might be an indication of a person's opportunity cost, we do not find that an indicator for whether or the individual had earned more than 5,000 pesos in their previous job is related to the likelihood that the person accepts the job.

How do these estimates compare with those in the literature? To our knowledge, no other study has estimated the elasticity of the labor supply curve to a single firm using randomized wages (Manning 2011). But there are a number of quasi-experiments that estimate labor supply elasticities and typically find estimates that range from 0.1 to 3.9. For instance, Staiger, Spetz, and Phibbs (2010) examine the effects of a legislated increase in the wages at the Veteran Affairs hospitals, and finds that a 10 percent increase in wages increased labor supply by between 0-2 percent. Falch (2011) analyzes an exogenous wage change paid to teachers in Norway, and estimates a labor supply elasticity of 1.4. Sullivan (1989) estimates the wage elasticity of the supply of nurses to individual hospitals by exploiting a shock to the demand curve. Using measures of hospital caseload as instruments, he estimates a long

³⁰The regressions include stratification intercepts.

run elasticity of 3.86.

One issue that arises in the interpretation of our results is that our indicator of acceptance denotes as zero both individuals who declined the initial offer, but also individuals who could not be reached after several attempts. There may be several reasons why these individuals were unreachable. For instance, they may have taken another job or decided against this job, and as a result may have chosen not to make themselves available. Alternatively, they may have been busy during the call back period, or their contact information was invalid.³¹ In any case, as we see from column 3 and 4, much of the effect comes from individuals not being found as opposed to rejecting the offer directly.³²

In Table 13, we examine how our elasticity of employment varies according to characteristics of the applicants, as specified in Equation 2. In column 1, we estimate the differential effects of the high wage offer by whether or not the person is a high IQ type. We might expect for instance higher IQ individuals to have a higher reservation wage and hence be less likely to accept the job. But as we see in Table 13, we do not find any evidence that individuals with a higher aptitude are less likely to accept the job. Although the Raven exam is predictive of past wages, it is likely to be a fairly coarse proxy of a person's reservation wage. In column 2, we examine this hypothesis more explicitly and test whether there is a differential effect among individuals whose previous salary was higher than 5,000 pesos. Here, we do find some suggestive evidence consistent with the hypothesis that the elasticity of the employment is lower among individuals with higher reservation wages.

There is an extensive literature suggesting that in developed countries the elasticity of labor supply of women is higher than for men. In column 3, we examine whether this is the case for our sample. Although our estimates are not measured with much precision, we do find, consistent with the literature, that female labor supply is much more elastic than that of men. Women are 25.2 percentage points more likely to accept the high wage offer compared to only 6 percentage points for men. In the remaining columns, we test for whether or not individuals who scored high on the Big 5 personality and public sector motivation tests are more responsive to higher wages. In neither case do we find any significant effects.

5.4 Other determinants of recruitment

Our research design provides a unique opportunity to investigate how the characteristics of the municipality in which the applicant was assigned to affects their acceptance decisions.

³¹In 23 of the cases, or 6 percent, the contact information was incorrect. For these cases, there is no difference between treatment and control.

³²Note that if the labor supply curve facing the firm is defined as the number of individuals the firm can hire at a given wage, then our elasticity can be interpreted properly.

Because individuals were randomly assigned to a municipality, the characteristics of the municipality constitute an exogenous shock to their choice sets. In Table 14, we examine how these characteristics affect the acceptance decisions.

In column 1, we estimate the likelihood of acceptance controlling for various characteristics of the municipality in which the applicant was assigned, in addition to applicant type and stratification dummies. We find that distance from the person's own municipality to his assigned municipality is a strong predictor of his likelihood to accept. Individuals who live further than 80 kilometers from the assigned municipality (the sample median) are 19 percentage points less likely to accept the job. Recall that this is approximately the same effect as providing the applicant with a wage increase of 33 percent. Aside from distance, the other characteristics of the municipality do not predict acceptance decisions.

One reason why this might arise is that we are not making good use of the information contained in the data. Applicants are not comparing across assigned municipalities in general. In making an individual decision, a person compares the characteristics of his own municipality to those of the municipality in which a job is offered to him. In column 2 we re-estimate the specification presented in Equation 3, which includes the characteristics of the municipality associated with the job relative to the candidate's own municipality. When estimating this specification, we find that candidates are much more likely to accept the position if they are offered a job located in places which score higher on the rule of law index, are less marginalized, and have lower altitude. We do not find that relative population size or the presence of a drug gang influences the decision. The specification estimated in column 2 is for the sample of individuals who were found, since otherwise the individual would not know which municipality he or she was assigned. But whether or not a person was located is clearly not random. So in column 3, we re-estimate the specification in column 2 using the entire sample, and find that the results still hold.

6 Conclusion

In August of 2011, Mexico's federal government set out to hire 350 public servants to participate in a program designed to strengthen the state's presence in some of the country's most marginalized communities. As part of the recruitment process, two different wage offers were randomly assigned across the recruitment sites, and applicants were administered an intensive screening test designed to measure their cognitive and non-cognitive traits, as well as their motivations and inclinations towards public sector work. Based on the experimental design, we show that offering higher wages attracts individuals with who had higher wages

in their previous employment, and who have both higher IQ and more desirable personality traits, as measured by the Big 5 personality and public sector motivation tests.

These findings have important implications for how to attract the most qualified individuals into the public sector, which is a necessary first step towards building a competent bureaucracy and improving the capabilities of the state. Not only do the results suggest that financial incentives matter in determining who enters the public sector, but also there does not appear to be a potential tradeoff in attracting intrinsically motivated individuals: individuals with high cognitive skills also tend to be more motivated and have good non-cognitive traits; higher wages in turn attract more of these individuals. Our results however do not necessarily imply that more able individuals will perform better once hired. Although previous studies have documented positive correlations between these various personal traits and job performance, they have not done so in the context of the public sector, where incentives tend to be low-powered and monitoring is weak (Wilson 1989). While these institutional features might make these traits even more valuable, more research is certainly needed.

Higher wages not only attract better candidates, but they also increase acceptance rates. By examining the effects of wages on acceptance rates, we estimate what we believe to be the first experiment-based elasticity of the labor supply curve facing a firm. We show, consistent with a large non-experimental literature that the labor supply facing a firm is far from infinitely elastic, and in fact implies a rate of exploitation of 0.55.

Of course, the wage is not the only aspect of a job that influences a person's willingness to accept the position. Our findings also highlight the importance of other job attributes in the acceptance decision. Distance appears to be an important hurdle to filling vacancies, demonstrating empirically that Hotelling-type considerations are highly relevant for labor markets. Candidates also appear to weigh the characteristics of the municipality where a job is offered relative to those of their own. We find that candidates are more likely to accept jobs when these are offered in municipalities with better prevalence of the rule of law. This indicates that the Tiebout sorting effects typically ascribed to residential decisions also apply to labor supply decisions.

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A Data appendix

The data used for this analysis come from two sources. The first is the information that was gathered as part of the recruitment exam. The second source is Mexico's National Statistical Office (Instituto Nacional de Estadística y Geografía), which collects and maintains many of the country's official datasets, including the population censuses. In this section, we describe these data sources and the variables that we use in the analysis.

A.1 Recruitment exam

These data are at the level of the individual. They were collected during a 3-hour exam held at the recruitment sites during a 3 week period in July 2011. We use the following variables from these data:

- *Age* - Age measured in years, constructed from the applicant's birth year
- *Years of schooling* - Measured in years and constructed based on the individual's highest education level. We assumed the following formula: preschool = 3 years; primary education = 6 years; secondary education = 9 years; high school = 12 years; college = 16 years; post-graduate = 20 years.
- *Male* - an indicator equals 1 if person is a male, zero otherwise
- *Speaks English* - an indicator equals 1 if person is speaks English, zero otherwise
- *Height* - Person's self-reported height measured in meters
- *Speaks Indigenous Language* - an indicator equals 1 if person is speaks an indigenous language, zero otherwise
- *Indigenous* - an indicator equals 1 if person self-identifies as being indigenous, zero otherwise
- *Uses Computer* - an indicator equals 1 if person reports knowing how to use a computer, zero otherwise
- *Uses Excel* - an indicator equals 1 if person reports knowing how to use a spreadsheet program like Excel, zero otherwise
- *Previous Wage* - Monthly wage the person reported receiving in their last job

- *Employed* - an indicator equals 1 if person reports being currently employed, zero otherwise
- *Raven* - The number correct (out of 12) the person correctly answered in the Raven Progressive Matrices, Set I (source: Pearson)
- *Recommended* - an indicator equals 1 if person was recommended by a coordinator, zero otherwise
- *Chose dominated risk option* - an indicator equals 1 if person chose a certain outcome of \$2.5 million instead a lottery with equally probable prizes of \$2.5 and \$5 million, zero otherwise
- *Religious* - an indicator equals 1 if person attends church regularly, zero otherwise
- *Blood donor* - an indicator equals 1 if person has donated blood, zero otherwise
- *Voted* - an indicator equals 1 if person voted in the last Federal elections, zero otherwise
- *Volunteer* - an indicator equals 1 if person reports having done any volunteer work, zero otherwise
- *Politician* - an indicator equals 1 if person reports having run for elected office, zero otherwise
- *Charity* - an indicator equals 1 if person reports having done charity work in the last year, zero otherwise
- *Extravert* -An orientation of one's interests and energies toward the outer world of people and things rather than the inner world of subjective experience; characterized by positive affect and sociability (VandenBos and Association 2007). Computed as the average response to 8 questions from the Big Five Inventory Test.
- *Agreeable* -The tendency to act in a cooperative, unselfish manner (VandenBos and Association 2007). Computed as the average response to 9 questions from the Big Five Inventory Test.
- *Conscientious* - The tendency to be organized, responsible, and hardworking (VandenBos and Association 2007). Computed as the average response to 9 questions from the Big Five Inventory Test.

- *Neurotic* - Neuroticism is a chronic level of emotional instability and proneness to psychological distress. Emotional stability is predictability and consistency in emotional reactions, with absence of rapid mood changes (VandenBos and Association 2007). Computed as the average response to 8 questions from the Big Five Inventory Test.
- *Open* - The tendency to be open to new aesthetic, cultural, or intellectual experiences (VandenBos and Association 2007). Computed as the average response to 10 questions from the Big Five Inventory Test.
- *Big 5 Index* - an index of the Big 5 as an equally weighted average of the z-scores of each dimension, reversing Neuroticism which is widely considered to be a negative characteristic.
- *Perry Index* - This measure relies on a questionnaire in which the subject must express agreement or disagreement with each of thirty-two statements. The questionnaire elicits opinions on the attractiveness of politics, public service, and prosocial activities. The questionnaire is subdivided into six modules labeled “Attraction to Policy Making” (which includes items such as “Politics is a dirty word”), “Commitment to Policy Making,” “Social Justice,” “Civic Duty,” “Compassion,” and “Self-Sacrifice.” We then create an weighted average of the z-scores of each dimension.
- *Contribution VCG* - contribution in a hypothetical voluntary contribution game where the person must decide how much out of \$50 to contribute to a joint account, and how much to keep. Money in the joint account is multiplied by a factor of 1:4 and then divided between the two people participating. While the Pareto efficient allocation is to contribute all \$50, the Nash equilibrium is to contribute zero.
- *Money claimed as dictator* - amount the person keeps out of \$50 in a hypothetical dictator game.
- *Rejected ultimatum* - an indicator equals 1 if person would reject an offer of \$1 in a hypothetical ultimatum game where the proposer keeps \$49.
- *Wealth Important* - One of the 7 components of the Aspiration Index (see Kasser and Ryan (1996)). It is intended to measure how important wealth is to the individual. It is constructed based on the average of answers to 5 questions that were asked on a 7-point response scale.
- *Fame important* - One of the 7 components of the Aspiration Index (see Kasser and Ryan (1996)). It is intended to measure how important fame is to the individual. It

is constructed based on the average of answers to 5 questions that were asked on a 7-point response scale.

- *Trust* - an indicator equals 1 if person agreed with the statement “People can be trusted”, zero otherwise.
- *Integrity (projection bias)* - Constructed based on the following three questions: “If a person found your wallet with \$200 pesos in it, what is the probability that it gets returned to you with all the money in it, if it was found a 1) neighbor; 2) policeman, 3) a stranger”. The answers to these three questions are then averaged.
- *Integrity (simple)* - an indicator equals 1 if person agreed with the statement “Laws are meant to be broken”, zero otherwise.

A.2 Instituto Nacional de Estadística y Geografía

The following databases were obtained from INEGI (<http://www.inegi.org.mx/>).

Anuario estadístico - a compilation of municipal-level statistics published on an annual basis by state. The

- *Population* - population size (source: 2005 population census)
- *Infant mortality* - number of infant deaths per 1000 births (source: 2005 population census)
- *Literacy* - share of people 15 years or old who are literate (source: 2005 population census)
- *Income per capita* - average monthly income per capita (source: 2005 population census)
- *Gini* - income inequality (source: 2005 population census)
- *Altitude variation* - standard deviation of altitudes in the municipality (source: Información Geográfica y del Medio Ambiente, a branch of INEGI)
- *Average annual precipitation* - Average annual rainfall in centimeters (source: Información Geográfica y del Medio Ambiente, a branch of INEGI)
- *Average annual temperature* - average temperature in Celsius (source: Información Geográfica y del Medio Ambiente, a branch of INEGI)

- *Narco presence* - an indicator equals 1 if municipality has a drug cartel, zero otherwise
- *Subversion* - an indicator equals 1 if municipality has a subversive group, zero otherwise
- *Corruption* - an indicator equals 1 if municipality has found to have corruption, zero otherwise
- *Marginality index* - an index of the degree of marginality in the municipality (based on a principal component analysis of socio-economic factors)
- *Human Development Index* - the human development index constructed from data from Mexico's municipalities
- *Homicides per 100,000 inhabitants* - number of homicides per 100,000 inhabitants

2010 Population census These data are at the level of the locality.

- *Population* - population size of the locality
- *Number of households* - number of households in the locality
- *Share of population between 15-65 years old* - share of the population in the locality between 15-65 years old
- *Share of male population* - share of population in locality that is male
- *Share of indigenous population* - share of population in the locality that is indigenous
- *Illiteracy rate* - share of the population 15 and older who is illiterate
- *Average years of schooling* - Average years of schooling among the adult population in the locality
- *Number of live births per number women* - Number of live persons in 2009 per number of women
- *Employment rate* - The number of individuals employed divided by the number of individuals actively searching for employment in 2009
- *Share of female-headed households* - share of households with a female-head
- *Share of households with access to electricity, water, and sanitation* - share of households with access to electricity, water, and sanitation
- *Share of households with a dirt floor* - share of households with a dirt floor

Table1. Comparison of RDP Municipalities to the Rest of Mexico

	Non RDP municipalities (1)	RDP municipalities (2)	Difference (3)	Standard error (4)
Population	45137	20995	24142	3440
Infant mortality	22.36	32.73	-10.37	0.84
Literacy (%)	84.19	69.64	14.54	0.91
Income per capita (\$)	6148.55	3663.75	2484.80	120.26
Gini 2005	0.40	0.40	0.00	0.00
Altitude variation (st dev)	192.28	340.46	-148.18	12.46
Average annual precipitation	1060.14	1278.91	-218.77	33.17
Average annual temperature	197.02	210.88	-13.87	2.94
Narco presence	0.67	0.76	-0.09	0.03
Subversion	0.04	0.50	-0.45	0.04
Corruption	0.14	0.25	-0.11	0.03
Marginality index	-0.10	1.39	-1.49	0.07
Human Development Index 2005	0.76	0.67	0.09	0.00
Homicides per 100,000 inhabitants	13.87	36.24	-22.37	3.09
Observations	2289	167		

Notes: This table compares the mean socio-economic characteristics of the municipalities in the program to those not in the program. Column (1) reports the mean of the corresponding variables among municipalities that are not in the program. Column (2) reports the mean of the corresponding variables among municipalities in the program. Column (3) reports the difference in the mean and column (4) reports the standard error of the difference. See the data appendix for more information on the variables including their sources.

Table 2. Validation of the Experimental Design

	Low wage offer (1)	High wage offer (2)	Difference (3)	Wilcoxon test p-value (4)
Latitude	191,833.78	195,361.46	3,527.68 [5,505.608]	0.90
Longitude	988,409.10	999,524.23	11,115.13 [7,941.892]	0.27
Altitude	732.450	898.242	165.792 [158.536]	0.20
Population (logs)	9.219	9.373	0.154 [0.331]	0.96
Number of households (logs)	7.825	7.971	0.145 [0.335]	1.00
Share of population between 15-65 years old	0.620	0.624	0.004 [0.007]	0.90
Share of male population	0.480	0.482	0.002 [0.003]	0.56
Share of indigenous population	0.275	0.160	-0.115 [0.061]*	0.05
Illiteracy rate	0.104	0.096	-0.008 [0.013]	0.72
Average years of schooling	8.335	8.251	-0.084 [0.249]	0.47
Number of live births per number women	2.517	2.518	0.001 [0.081]	0.79
Employment rate	0.965	0.960	-0.004 [0.008]	0.82
Share of female-headed households	0.275	0.265	-0.009 [0.008]	0.24
Share of households with access to electricity, water, and sanitation	0.715	0.756	0.04 [0.049]	0.54
Share of households with a dirt floor	0.106	0.111	0.005 [0.018]	0.71
Number of observations	41	65		

Notes: This table compares the observable characteristics of the localities in which high wage announcements were made to those where the low wage was announced. Column (1) reports the mean of the corresponding variable among localities where a wage offer of 3,750 Pesos per month was announced. Column (2) reports the mean of the corresponding variable among localities where a wage offer of 5,000 Pesos per month was announced. Column (3) reports the difference between the two means, along with the standard errors. Column (4) reports the p-value associated with a rank-sum test that the two distributions are equal. These data were computed at the locality-level by INEGI based on the 2010 population census. See the data appendix for more information on the variables including their sources. * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are reported in brackets.

Table 3. Summary Statistics of Candidate Pool

A. Basic sociodemographic characteristics						B. Aptitudes and Skills					
Variable	Observations	Mean	Std. Dev.	Min	Max	Variable	Observations	Mean	Std. Dev.	Min	Max
Age	2231	27	7	16	66	Years of schooling	2223	14	2	0	20
Male	2244	0.60	0.49	0.00	1.00	Speaks English	2250	0.12	0.32	0	1
Height	2191	1.63	0.10	1.19	1.92	Speaks Indigenous Language	2252	0.32	0.47	0	1
Indigenous	2253	0.40	0.49	0.00	1.00	Uses Computer	2249	0.92	0.27	0	1
Previous Wage	1581	4216	2728	0	27500	Uses Excel	2251	0.84	0.36	0	1
Employed	2250	0.14	0.34	0.00	1.00	Raven	2254	8.77	2.69	0	12
Recommended	2254	0.01	0.10	0.00	1.00	Chose dominated risk option	2238	0.39	0.49	0	1
C. Personality traits						D. Prosocial behavior					
Religious	2251	0.70	0.46	0.00	1.00	Blood donor	2249	0.16	0.37	0	1
Extravert	2206	3.67	0.55	1.75	5.00	Voted	2250	0.76	0.43	0	1
Agreeable	2214	4.11	0.43	1.56	5.00	Volunteer	2249	0.71	0.46	0	1
Conscientious	2188	4.28	0.47	1.00	5.00	Charity	2248	0.54	0.50	0	1
Neurotic	2216	2.19	0.53	1.00	4.88	Politician	2249	0.11	0.31	0	1
Open	2193	3.93	0.49	1.80	5.00	Contribution in VCG	2182	26.40	10.71	0	50
Big 5 Index	2120	0.00	0.72	-4.86	1.85	Money claimed as dictator	2223	26.48	7.34	0	50
Perry Index	2096	0.00	0.70	-3.08	2.12	Rejected ultimatum	2231	0.55	0.50	0	1
Wealth Important	2048	3.22	1.38	1.00	7.00	Trust	2244	0.66	0.47	0	1
Fame important	2053	3.19	1.54	1.00	7.00	Integrity (projection bias)	2206	45.01	22.62	0	100

Notes: This table reports summary statistics for the applicant pool. The statistics are computed based on the responses from the recruitment exam. See the data appendix for more information on the variables including their sources.

Table 4. Basic correlates of cognitive abilities

	Raven	Chose dominated risk option	Years of schooling	Age
Raven	1.000			
Chose dominated risk option	-0.145*	1.000		
Years of schooling	0.256*	-0.100*	1.000	
Age	-0.126*	-0.003	-0.029	1.000

Notes: This table reports pair-wise correlations. See the data appendix for more information on the variables including their sources. * at the 1% level.

Table 5. Correlates of motivation

Panel A Cognitive ability, personality traits, and motivations		Raven	Big 5 Index	Perry Index	Impor- tance of wealth	Impor- tance of fame	Trust	Integrity (proj. bias)	Integrity (simple)
Raven		1.000							
Big 5 Index		0.204*	1.000						
Perry Index		0.120*	0.536*	1.000					
Importance of wealth		0.033	-0.056	-0.079*	1.000				
Importance of fame		-0.093*	-0.033	0.035	0.546*	1.000			
Trust		0.126*	0.205*	0.221*	-0.006	-0.053	1.000		
Integrity (projection bias)		0.140*	0.107*	0.163*	-0.018	0.001	0.180*	1.000	
Integrity (simple)		0.158*	0.181*	0.126*	-0.016	-0.076*	0.156*	0.080*	1.000

Panel B Personality traits breakdown		Raven	Extravert	Agreeable	Consci- entious	Neurotic	Open	Perry Index
Raven		1.000						
Extravert		0.098*	1.000					
Agreeable		0.123*	0.274*	1.000				
Conscientious		0.167*	0.402*	0.464*	1.000			
Neurotic		-0.174*	-0.363*	-0.399*	-0.529*	1.000		
Open		0.173*	0.419*	0.339*	0.459*	-0.386*	1.000	
Perry Index		0.120*	0.355*	0.372*	0.421*	-0.351*	0.458*	1.000

Panel C Public sector motivation breakdown		Raven	Big 5 Index	Perry attrac- tion	Perry commit- ment	Perry social justice	Perry civic duty	Perry compas- sion	Perry self sacrifice
Raven		1.000							
Big 5 Index		0.204*	1.000						
Perry attraction		0.094*	0.285*	1.000					
Perry commitment		0.183*	0.456*	0.318*	1.000				
Perry social justice		0.084*	0.378*	0.247*	0.461*	1.000			
Perry civic duty		-0.008	0.366*	0.209*	0.445*	0.537*	1.000		
Perry compassion		0.131*	0.387*	0.259*	0.392*	0.393*	0.422*	1.000	
Perry self sacrifice		0.052	0.394*	0.212*	0.469*	0.469*	0.606*	0.455*	1.000

Notes: This table reports pair-wise correlations. See the data appendix for more information on the variables including their sources.
* at the 1% level.

Table 6. Correlations among forms of prosocial behavior

	Charity	Blood donor	Religious	Voted	Volunteer	Politician	Trust	Contri- bution in VCG	Money kept as dictator	Rejected ultimatum	Integrity (proj. bias)
Charity	1.000										
Blood donor	0.017	1.000									
Religious	0.123*	-0.045	1.000								
Voted	0.057*	0.070*	0.043	1.000							
Volunteer	0.333*	0.064*	0.034	0.111*	1.000						
Politician	0.149*	0.062*	0.038	0.055*	0.178*	1.000					
Trust	0.017	0.049	-0.016	0.071*	0.101*	0.040	1.000				
Contribution in VCG	0.042	0.061*	-0.007	0.052	0.030	0.014	0.019	1.000			
Money claimed as dictator	-0.056*	0.013	-0.030	0.025	-0.011	-0.014	-0.024	-0.074*	1.000		
Rejected ultimatum	-0.059*	-0.036	0.003	-0.020	-0.087*	-0.046	-0.051	-0.053	-0.071*	1.000	
Integrity (projection bias)	0.024	0.004	0.038	0.018	0.046	0.033	0.180*	0.011	-0.027	-0.027	1.000

Notes: This table reports pair-wise correlations. See the data appendix for more information on the variables including their sources. * at the 1% level.

Table 7. Correlates of prosocial behavior

	Politician (1)	Charity (2)	Blood donor (3)	Volunteer (4)	Voted (5)	VCG contri- bution (6)	Dictator money (7)	Reject ultimatum (8)	Education (9)
Raven	0.002 [0.003]	-0.007 [0.005]	0.004 [0.004]	0.003 [0.005]	-0.002 [0.004]	-0.068 [0.112]	0.265 [0.071]***	-0.011 [0.005]**	0.154 [0.023]***
Big 5 Index	0.02 [0.013]	0.044 [0.020]**	0.012 [0.014]	0.037 [0.018]**	0.061 [0.016]***	-0.063 [0.426]	0.042 [0.271]	0.004 [0.020]	0.369 [0.088]***
Perry	0.003 [0.013]	0.055 [0.021]***	0.009 [0.015]	0.067 [0.018]***	-0.015 [0.016]	1.422 [0.448]***	-1.090 [0.286]***	-0.063 [0.021]***	0.050 [0.093]
Integrity (projection bias)	0.000 [0.000]	0.000 [0.001]	0.000 [0.000]	0.000 [0.000]	0.001 [0.000]	-0.002 [0.012]	-0.001 [0.007]	0.000 [0.001]	0.006 [0.002]**
Education	-0.006 [0.003]*	-0.003 [0.005]	0.006 [0.004]	0.004 [0.005]	0.043 [0.004]***	0.100 [0.115]	0.009 [0.074]	-0.005 [0.005]	
Age	0.007 [0.001]***	0.000 [0.002]	0.011 [0.001]***	0.004 [0.002]**	0.019 [0.002]***	0.062 [0.042]	0.004 [0.027]	-0.001 [0.002]	0.019 [0.009]**
Male	-0.010 [0.016]	-0.007 [0.024]	0.157 [0.018]***	0.058 [0.022]***	-0.020 [0.019]	1.548 [0.529]***	0.595 [0.337]*	-0.004 [0.025]	-0.399 [0.110]***
Fame important	0.020 [0.006]***	0.045 [0.009]***	-0.012 [0.007]*	0.010 [0.008]	0.008 [0.007]	0.102 [0.202]	0.079 [0.129]	0.009 [0.009]	-0.071 [0.042]*
Wealth Important	-0.009 [0.007]	-0.049 [0.010]***	0.010 [0.007]	-0.020 [0.009]**	-0.002 [0.008]	-0.378 [0.224]*	0.510 [0.142]***	-0.007 [0.010]	0.074 [0.046]
Observations	1776	1775	1776	1776	1778	1750	1770	1772	1781
R-squared	0.03	0.04	0.1	0.04	0.16	0.02	0.03	0.01	0.06

Notes: This table reports estimates from OLS regressions. For each regression the dependent variable is denoted at the top of each column. * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are reported in brackets.

Table 8. Comparison between applicant pool and the rest of Mexico by Region

	Age		Employed		Enrolled in school		Education level		Speaks an indigenous language	
	Candidates (1)	Rest of region (2)	Candidates (3)	Rest of region (4)	Candidates (5)	Rest of region (6)	Candidates (7)	Rest of region (8)	Candidates (9)	Rest of region (10)
Costa-Infiernillo	27.500	35.430	0.246	0.935	0.279	0.086	13.933	7.860	0.098	0.041
Huasteca	26.906	35.763	0.149	0.935	0.145	0.099	14.446	7.851	0.435	0.211
Montana de Guerrero	26.829	34.433	0.066	0.931	0.292	0.091	15.079	6.737	0.418	0.400
Selva Lacandona	26.826	33.460	0.156	0.963	0.141	0.085	15.000	6.231	0.470	0.559
Sierra	29.620	34.433	0.167	0.931	0.147	0.091	14.863	6.737	0.030	0.400
Sierra Cora-Huichol	24.514	34.524	0.198	0.826	0.151	0.090	14.330	6.626	0.104	0.454
Sierra Tarahumara	29.529	35.840	0.153	0.900	0.102	0.099	13.511	8.334	0.150	0.150
Tierra Caliente-Oriente	27.015	35.430	0.142	0.935	0.313	0.086	14.316	7.860	0.000	0.041
Triqui-Mixteca	24.771	35.780	0.059	0.944	0.296	0.091	13.672	7.202	0.348	0.460
Zapoteca-Chontal	30.508	35.780	0.109	0.944	0.193	0.091	14.424	7.202	0.328	0.460

Notes: This table compares the characteristics of the applicants to the general population living in the same regions. The odd columns report the average for the applicant pool, whereas the even columns report the mean for the general population residing the region. All differences in the means between the applicant pool and the general population are statistically significant at the 1 percent level, except for the share of population that speaks an indigenous language in the region Sierra Tarahumara. The statistics reported in the odd columns are computed based on the responses from the recruitment exam. The statistics reported in the even columns are based on 5 percent sample of the 2010 population census.

Table 9. Comparison between the candidate pool and the rest of Mexico

	Candidates		Rest of Mexico		Difference (5)
	Obs (1)	Mean (2)	Obs (3)	Mean (4)	
Raven	2,254	8.772	14,815	6.778	1.994 [0.061]***
Chose dominated risk option	2,238	0.391	22,364	0.436	-0.045 [0.011]***
Sufficient resources this year (Probability)	2,230	60.328	20,004	49.134	11.194 [0.522]***
Sufficient resources in 3 years (Probability)	2,226	65.651	19,942	48.512	17.139 [0.537]***
Integrity measure (Probability)	2,206	45.007	20,017	12.971	32.036 [0.494]***
A random person returns the wallet (Probability)	2,223	59.236	20,073	22.588	36.647 [0.681]***
A policeman returns the wallet (Probability)	2,216	49.194	20,057	11.049	38.145 [0.651]***
A stranger returns the wallet (Probability)	2,219	26.758	20,061	5.305	21.454 [0.588]***
Thinks laws are made to be broken	2,248	0.059	20,443	0.183	-0.125 [0.006]***
Thinks a person who does not cheat, does not get ahead	2,248	0.060	20,439	0.200	-0.141 [0.006]***

Notes: This table compares the characteristics of the applicants to the general population of Mexico. Columns (1) and (2) report the sample size and average for the applicant pool, whereas columns (3) and (4) report the sample size and mean for the general population. Column (5) reports the difference in means, along with robust standards of the differences. The statistics reported in the first column are computed based on the responses from the recruitment exam. The statistics reported in the second column are based on 2005 MxFLS. See the data appendix for more information on the variables including their sources. * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are reported in brackets.

Table 10. The correlates of previous earnings

	Log wages of last employment						Wages
	(1)	(2)	(3)	(4)	(5)	(6)	Unconditional (7)
Male	0.185 [0.041]***	0.140 [0.050]***	0.147 [0.050]***	0.165 [0.041]***	0.160 [0.041]***	0.171 [0.041]***	572.991 [146.579]***
Age	0.102 [0.020]***	0.097 [0.020]***	0.096 [0.020]***	0.099 [0.020]***	0.100 [0.020]***	0.097 [0.020]***	497.345 [79.368]***
Age^2	-0.001 [0.000]***	-0.001 [0.000]***	-0.001 [0.000]***	-0.001 [0.000]***	-0.001 [0.000]***	-0.001 [0.000]***	-5.307 [1.238]***
Education	0.038 [0.009]***	0.042 [0.009]***	0.037 [0.009]***	0.031 [0.009]***	0.031 [0.009]***	0.035 [0.009]***	55.735 [36.931]
Height		0.441 [0.216]**	0.339 [0.221]				
IQ			0.021 [0.008]***	0.024 [0.008]***	0.022 [0.008]***	0.022 [0.008]***	94.078 [28.294]***
Big 5 Personality Traits							
Extrovert				-0.101 [0.040]**	-0.106 [0.040]***	-0.087 [0.039]**	-232.271 [129.701]*
Agreeable				-0.027 [0.055]	-0.042 [0.057]	-0.024 [0.057]	-123.088 [182.478]
Conscientious				0.019 [0.056]	0.015 [0.056]	0.013 [0.055]	-14.370 [231.205]
Neurotic				-0.127 [0.049]***	-0.120 [0.049]**	-0.113 [0.048]**	-402.519 [192.917]**
Open				0.026 [0.046]	0.006 [0.049]	0.019 [0.048]	348.949 [174.429]**
Public Sector Motivation							
Attractiveness					0.012 [0.033]	0.000 [0.033]	1.552 [129.733]
Commitment					0.016 [0.042]	0.006 [0.041]	252.179 [181.486]
Social Justice					0.057 [0.042]	0.040 [0.042]	380.401 [150.799]**
Civic Duty					-0.071 [0.039]*	-0.054 [0.039]	-368.082 [151.609]**
Compassion					-0.034 [0.041]	-0.027 [0.041]	-123.861 [150.493]
Self sacrifice					0.098 [0.041]**	0.086 [0.041]**	132.320 [178.513]
Number of observations	1381	1352	1352	1381	1381	1381	1947
R-squared	0.11	0.11	0.12	0.12	0.12	0.16	0.16
Joint significance of Big 5 (p-value)	n/a	n/a	n/a	0.04	0.06	0.11	0.05
Joint significance of Perry Index (P-value)	n/a	n/a	n/a	n/a	0.11	0.35	0.07
Region intercepts	N	N	N	N	N	Y	N

Notes: This table reports estimates from OLS regressions. In columns (1)-(6), the dependent variable is the monthly wage the candidates reported in their previous jobs, expressed in logarithms. In column (7), the dependant variable is the candidate's previous wage in levels, where missing wages have been replaced with zero. The regressions are estimated based on the data gathered from the recruitment exam. See the data appendix for more information on the variables including their sources. * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are reported in brackets.

Table 11: Effects on Financial Incentives on the Applicant Pool

	Obs	Control	Treatment	Wilcoxon test	FDR
	(1)	(2)	Effect	p-value	p-value
			(3)	(4)	(5)
Number of applicants	106	18.300	4.815 [4.437]	0.40	0.32
<u>Panel A: Employment history</u>					
Wage in previous job	1572	3479.667	819.154 [174.703]***	0.00	0.00
Currently employed	2225	0.104	0.053 [0.019]***	0.00	0.04
<u>Panel B: Market skills</u>					
IQ (Raven test)	2229	8.488	0.506 [0.223]**	0.00	0.07
Raven score >=9	2229	0.572	0.091 [0.039]**	0.00	0.07
Raven score <9	2229	0.428	-0.091 [0.039]**	0.00	0.07
Chose dominated risk option	2213	0.431	-0.064 [0.025]**	0.00	0.06
Years of schooling	2198	14.552	0.091 [0.308]	0.01	0.60
Speaks English	2225	0.115	0.007 [0.022]	0.49	0.60
Knows how to use a computer	2226	0.921	0.018 [0.033]	0.75	0.58
Knows how to use spreadsheet program	2226	0.859	0.009 [0.042]	0.10	0.60
<u>Panel C: Demographics</u>					
Male	2219	0.569	0.039 [0.031]	0.00	0.25
Age	2206	26.577	0.680 [0.660]	0.00	0.33
Height	2167	1.612	0.015 [0.008]*	0.00	0.11

Notes: This table estimates the effects of higher wages on characteristics of the applicant pool. Each row is a separate regression using the variable listed as the dependent variable. Column (1) reports the number of observations in the regression. Column (2) reports the mean of the variable in the control group (low wage announcement), column (3) reports the coefficient on the treatment in a regression that includes region intercepts. Column (4) is p-value associated with the rank-sum test of whether or not the two distributions are equal. See the data appendix for more information on the variables including their sources. * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level. Clustered standard errors at the level of the locality are reported in brackets.

Table 11: Effects on Financial Incentives on the Applicant Pool (continued...)

	Obs	Control	Treatment Effect	Wilcoxon test p-value	FDR p-value
	(1)	(2)	(3)	(4)	(5)
<u>Panel D: Prosocial behavior</u>					
Religious	2226	0.761	-0.077 [0.026]***	0.00	0.04
Blood donor	2224	0.114	0.065 [0.023]***	0.00	0.04
Volunteer	2224	0.710	-0.006 [0.028]	0.86	0.60
Voted	2225	0.758	0.019 [0.035]	0.61	0.58
Engaged in politics	2224	0.193	-0.031 [0.019]	0.14	0.58
Trusting	2219	0.667	-0.006 [0.029]	0.61	0.60
Amount kept in dictator game	2199	26.509	-0.039 [0.291]	0.93	0.64
Rejected offer in ultimatum game	2206	0.508	0.075 [0.023]***	0.00	0.02
Contribution in VCG	2157	26.174	0.675 [0.404]*	0.68	0.14
Integrity (projection bias)	2181	55.576	-0.602 [1.232]	0.97	0.58
<u>Panel E: Big 5 personality traits</u>					
Extroversion	2189	3.674	0.013 [0.036]	0.65	0.60
Agreeableness	2167	4.107	0.004 [0.022]	0.71	0.60
Conscientiousness	2191	4.235	0.063 [0.030]**	0.01	0.09
Neuroticism	2168	2.254	-0.099 [0.033]***	0.00	0.04
Openness	2168	3.910	0.042 [0.028]	0.15	0.18
Big 5 index	2099	0.000	0.087 [0.049]*	0.01	
<u>Panel F: Public sector motivation traits</u>					
Attractiveness	2217	2.803	0.070 [0.041]*	0.00	0.14
Commitment	2170	3.316	0.045 [0.035]	0.03	0.25
Social Justice	2180	3.646	0.075 [0.026]***	0.00	0.04
Civic Duty	2158	3.924	0.027 [0.033]	0.46	0.41
Compassion	2168	3.001	0.066 [0.031]**	0.02	0.08
Self sacrifice	2168	3.687	0.039 [0.034]	0.12	0.28
Public sector motivation index	2074	0.000	0.092 [0.046]**	0.01	

Table 12: Effects of Financial Incentives on Acceptance Rates

	Accepted (1)	Accepted (2)	Rejected (3)	Not reachable (4)
High wage offer	0.151 [0.054]***	0.151 [0.057]***	-0.017 [0.034]	-0.143 [0.048]***
<u>Demographics:</u>				
Male		-0.092 [0.058]		
Years of schooling		-0.024 [0.009]**		
Ravens score		0.010 [0.018]		
Wage in previous job > 5,000		-0.003 [0.069]		
<u>Prosocial behavior:</u>				
Blood donor		0.055 [0.104]		
Religious		0.061 [0.060]		
Rejected offer in ultimatum game		0.064 [0.058]		
<u>Personal traits:</u>				
Big 5 index		0.039 [0.038]		
Perry index		-0.027 [0.044]		
Mean of dependent variable	0.55	0.55	0.13	0.24
Observations	350	343	350	350
R-squared	0.03	0.06	0.00	0.03

Notes: This table estimates the effects of higher wages on acceptance decisions. In columns (1) and (2), the dependent variable is an indicator equal to 1 if the person accepted the offer, zero otherwise. In column (3), the dependent variable is an indicator equal to 1 if the person rejected the offer, zero otherwise. In column (4), the dependent variable is an indicator equal to 1 if the person was not contacted about the offer, zero otherwise. In addition the controls listed in the table, all regressions included strata dummies used in the random assignment of the job offers. See the data appendix for more information on the variables including their sources. * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level. Clustered standard errors at the level of the locality are reported in brackets.

Table 13: The Effects of Financial Incentives on Acceptance Decisions by Applicant Characteristics

Dependent variable	Acceptance					
	(1)	(2)	(3)	(4)	(5)	(6)
High wage offer	0.16 [0.080]**	0.204 [0.066]***	0.252 [0.093]***	0.15 [0.053]***	0.156 [0.054]***	0.299 [0.125]**
High wage offer × High IQ	-0.016 [0.112]					-0.008 [0.113]
High IQ	-0.01 [0.091]					-0.023 [0.093]
High wage offer × High outside wage		-0.251 [0.153]				-0.237 [0.164]
High outside wage		0.169 [0.138]				0.157 [0.141]
High wage offer × Male			-0.177 [0.121]			-0.164 [0.119]
Male			0.027 [0.097]			0.035 [0.090]
High wage offer × Big 5 index				-0.052 [0.070]		0.064 [0.091]
Big 5 index				0.053 [0.056]		-0.06 [0.075]
High wage offer × Perry index					0.015 [0.084]	-0.058 [0.082]
Perry index					-0.019 [0.068]	0.076 [0.067]
Observations	350	350	350	349	344	344
R-squared	0.1	0.11	0.12	0.13	0.13	0.13

Notes: This table estimates whether the effects of higher wages on acceptance decisions vary according to characteristics of the applicants. In all columns, the dependent variable is an indicator equal to 1 if the person accepted the offer, zero otherwise. In addition the controls listed in the table, all regressions included strata dummies used in the random assignment of the job offers. See the data appendix for more information on the variables including their sources. * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level. Clustered standard errors at the level of the locality are reported in brackets.

Table 14: Effects of Municipal Characteristics on Acceptance Decisions

Dependent variable	Acceptance		
	Characteristics of the assigned municipality	Characteristics of the assigned relative to own municipality	
	Full sample (1)	Conditional on being found (2)	Full sample (3)
Assigned municipality > 80 km from home	-0.194 [0.062]***	-0.142 [0.065]**	-0.158 [0.065]**
Rule of law	0.092 [0.145]	0.016 [0.006]***	0.016 [0.008]**
Population (10,000s)	0.001 [0.012]	-0.01 [0.020]	-0.012 [0.017]
Marginality index	0.018 [0.035]	-0.002 [0.001]**	-0.002 [0.001]**
Average annual temperature	-0.003 [0.005]	-0.124 [0.162]	-0.186 [0.147]
Average altitude (km)	-0.179 [0.292]	-0.003 [0.001]**	-0.003 [0.001]**
Drug gang present	-0.026 [0.076]	-0.03 [0.053]	0.035 [0.053]
Number of observations	350	263	347

Notes: This table estimates the effects of municipal characteristics on acceptance decisions. In all columns, the dependent variable is an indicator equal to 1 if the person accepted the offer, zero otherwise. In column (2) the sample has been restricted to the applicants who were successfully contacted. In addition the controls listed in the table, all regressions included strata dummies used in the random assignment of the job offers. See the data appendix for more information on the variables including their sources. * indicates statistical significance at the 10% level, ** at the 5% level and *** at the 1% level. Robust standard errors are reported in brackets.

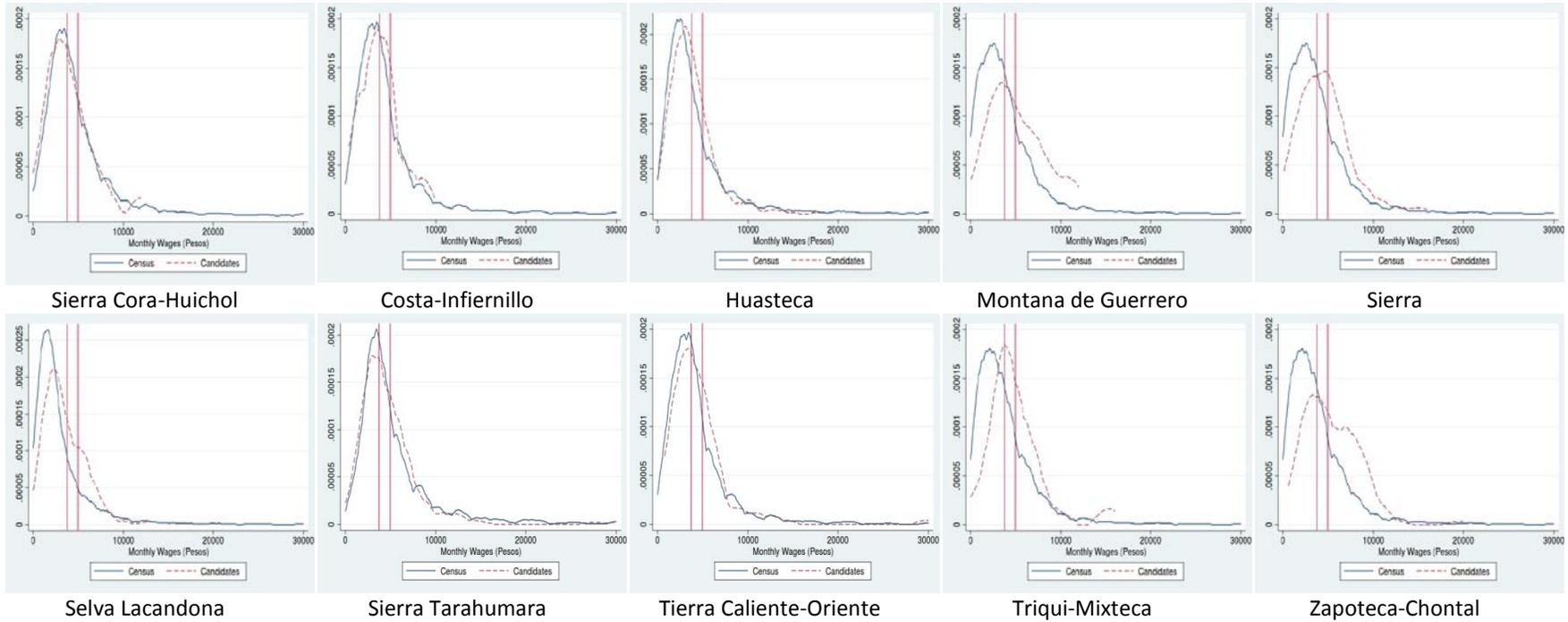


Figure 1: Distributions of Wages

Figure Notes: Each plot depicts for a particular region the distributions of wages for the applicant pool (dashed line) and the population (solid line). Each density was estimated using an Epanechnikov kernel and an optimal bandwidth. The vertical lines denote the experimental wage offers of 3,750 and 5,000 pesos. The wage data for the population come from the 2010 population census.

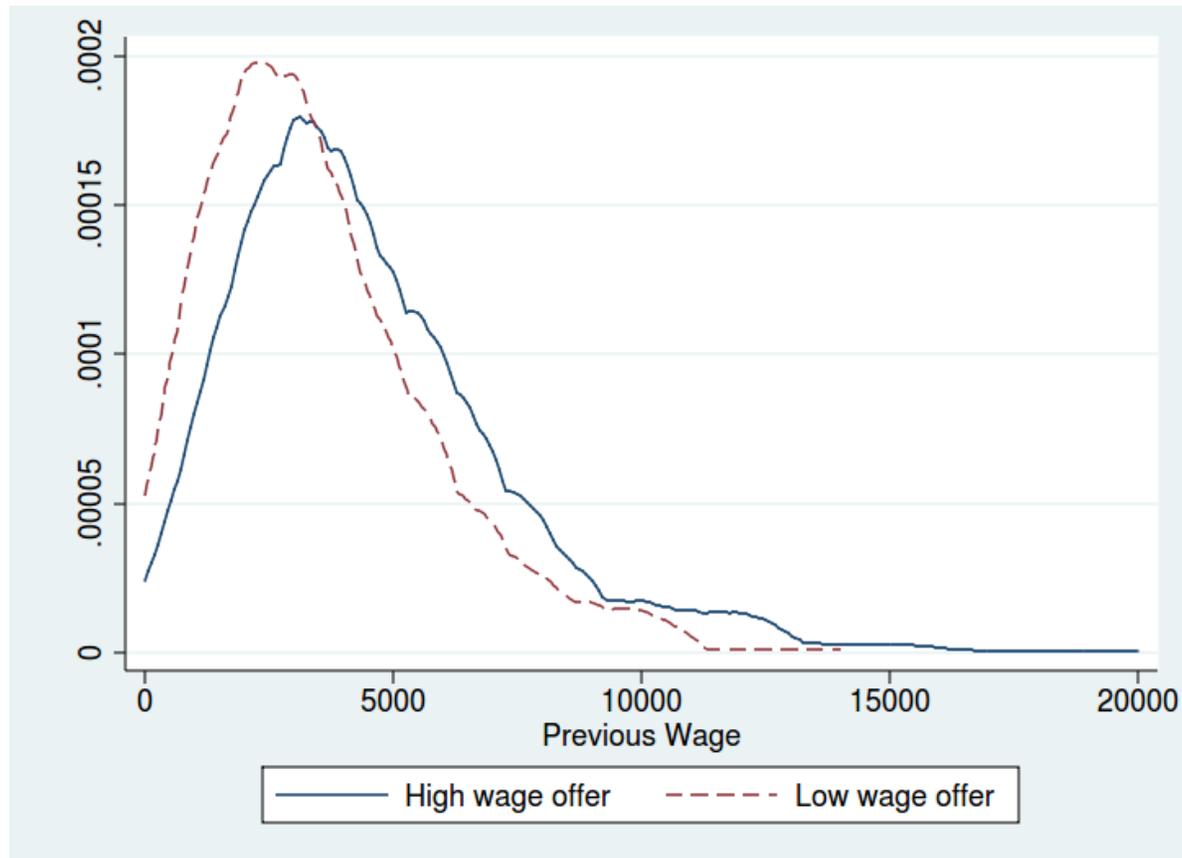


Figure 2: Previous Wage Distribution by Treatment Assignment

Figure Notes: Each plot depicts the distributions of wages by treatment assignment. Each density was estimated using an Epanechnikov kernel and an optimal bandwidth.



ANUNCIO PARA EMPLEO



**El Gobierno Federal, a través del Proyecto para el Desarrollo de
Regiones Vulnerables, va a contratar**

PROMOTORES SOCIALES

REQUISITOS:

1. SER MEXICANOS (HOMBRES Y MUJERES)
2. MAYORES DE 18 AÑOS
3. DEDICACIÓN DE TIEMPO COMPLETO
4. CON DISPOSICION PARA TRABAJAR Y VIVIR EN COMUNIDADES DE ALTA Y MUY ALTA MARGINACIÓN
5. CAPACES DE EXPRESARSE CLARAMENTE POR ESCRITO Y VERBALMENTE
6. CON BUEN TRATO INTERPERSONAL

RESPONSABILIDADES

El Promotor Social trabajará directamente con las autoridades y los habitantes de municipios de alta y muy alta marginación, proporcionando apoyo para la identificación de necesidades y demandas sociales de la comunidad, facilitando procesos de organización, orientando a la población y sus autoridades sobre las posibilidades de apoyo del gobierno federal para el desarrollo de sus comunidades, y facilitando su vinculación.

\$\$ SALARIO ATRACTIVO \$\$

Para registrarte en el proceso de selección y obtener mayores informes sobre el trabajo, llama al

01-800-XXX-XXXX

(teléfono gratuito; no se cobra la llamada)

O escribe al correo electrónico*: XXXX@gmail.com

*Si usted decide escribir un correo electrónico, favor de mencionar su nombre completo, así como el nombre de la localidad en donde usted vio este anuncio.

FECHA LÍMITE PARA REGISTRARTE: Viernes, 4 de junio, 2011, 17 horas

Figure A1: The Announcement