

Intrinsic Motivation, Effort and the Call to Public Service

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Abstract

Pay schemes in the public sector aim to attract motivated, high-ability applicants. A nascent literature has found positive effects of higher pay on ability and no or slightly positive effects on motivation. This paper revisits this issue with a novel subject pool, students destined for the private and public sectors in Indonesia. The analysis uses dictator games and real effort tasks to examine wage effects on a measure of motivation that exactly matches the mission of the public sector task. The model and experimental design allow for precisely measuring (1) the distribution of ability over the effort task; (2) the

distribution of motivational preferences for public sector missions; and (3) outside options when choosing to work for public sector missions. Three novel conclusions emerge. First, more pro-social workers do, in fact, exert higher effort in a pro-social task. Second, in contrast to previous research, motivated individuals are more likely to join the public sector when public sector pay is low than when it is high. Third, real public sector workers exhibit greater pro-sociality than private sector workers, even for entrants into the Indonesian Ministry of Finance.

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Intrinsic motivation, effort and the call to public service

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Introduction

Based on the observation that performance monitoring in government is weak, contracts between principals and agents are incomplete, and incentives generally low-powered, James Q. Wilson (1989) concluded that “[W]hat is surprising is that bureaucrats work at all...” (p. 156). So, why do bureaucrats work? A large body of research answers this question by appealing to the intrinsic motivation of workers. Wilson himself argued that employees work because they are intrinsically motivated to complete the tasks set before them, or because they enjoy the tasks. Since government and private sector tasks are often similar (procurement officers, secretaries, managers), another type of intrinsic motivation, “mission-orientation,” is of greater interest. Using novel evidence from lab experiments with approximately 1,700 subjects from the government and private sectors in Indonesia, we find that mission-oriented – pro-social – individuals exert greater effort in pro-social tasks; pro-social individuals are more likely to select into the public sector when the public sector wage is low than when it is high; and “real world” public sector subjects are more pro-social than a closely matched sample of private sector subjects.

When workers intrinsically value the outcome of the task they are performing – their mission – they exert effort even when extrinsic incentives to do so are weak. This explanation for employee effort in the presence of weak monitoring and low-powered incentives implies that government employees exert effort because they are intrinsically pro-social and motivated to serve the public interest². Despite the weight given to this explanation for bureaucratic effort, however, the behavioral evidence that government workers are, in fact, more pro-social is both sparse and mixed.

We make four contributions to the study of intrinsic motivation and public sector effort. First, we are able to overcome an obstacle confronting previous research, an imprecise match between measures of mission-orientation and the actual mission of the employee. We use a behavioral measure of pro-sociality from a variant of the dictator game: the amount of an initial endowment that subjects give to the Indonesian Red Cross rather than keep for themselves. Our “laboratory public sector” then asks subjects to perform a real effort task with a mission that exactly matches this measure of pro-sociality; greater effort in the public sector task translates into larger donations to the Indonesian Red Cross.

Second, previous research has assumed that individual preference for an organization’s mission increases effort. We are able to establish the link between mission-orientation and effort empirically. Those who exhibit greater pro-sociality (by making larger donations to the IRC) work harder on a real-effort task that serves the pro-social mission.

Third, we contribute to a nascent literature that examines the effects of mission orientation on the choice to join the public sector. We construct stylized versions of the private and public sectors and then ask subjects to choose between them. The “private sector” is one in which the completion of real-effort tasks yields greater pecuniary compensation for the subject herself. In the “public sector”, subjects are paid a flat wage, independent of their effort; completion of real-effort tasks yields larger donations to the Indonesian Red Cross.

A key concern in this literature, and in general, is the effect of wages on intrinsic motivation. We conduct two treatments, with lower and higher public sector compensation, to explore this

² We use the terms “pro-sociality” and “mission-orientation” interchangeably throughout the paper. While not every mission is pro-social, nearly all missions of public institutions (which are the scope of this work) are. Therefore, in order for public officials to be “mission-oriented,” it follows that they must be pro-social.

effect. In contrast to previous research, and for reasons that we explain below, pro-social subjects are more likely to choose the public sector setting, but are significantly *less* likely to choose the public sector when wages are high.

Our fourth contribution is to precisely compare the pro-sociality of subjects who have selected into the private and public sectors in the real world. We compare the pro-sociality of students at two institutions that are comparable in prestige and competitiveness. Students at the State College of Accountancy (STAN) have firmly committed, but not yet begun, to work in the public sector. A comparable set of university students at the University of Indonesia (UI) have not selected into any job and the vast majority of them will end up in the private sector.

Students at STAN – and nearly all of the students participated – exhibit greater pro-sociality, a result that is important for two reasons. On the one hand, there is no empirical evidence indicating how close the match between individual preferences and organization mission must be in order to trigger systematic between-organization differences in employee orientation. The analysis here indicates that even when this match is not particularly close, significant differences in pro-social orientation can emerge between organizations. We find more pro-social behavior among government employees, but in a country, Indonesia, where the public sector is not ranked highly for its pro-social mission³; and in an organization, the Ministry of Finance, that is not, in any country, tasked with the type of “caring” mission that would be more obviously associated with pro-social behavior.

On the other hand, the comparison of the pro-sociality of STAN and UI students addresses a central question in the literature concerning the mechanism through which government employees come to be more pro-social. In particular, are government employees more pro-social because pro-social individuals select into the government sector, or because service in the government sector reinforces pro-social behavior? Our novel subject pool allows us to isolate the effect of selection.

Existing research has already made substantial progress in analyzing the attitudes and values of public and private sector employees; the next section of the paper describes in more detail our contribution to this literature. We then describe our experimental design and subject pool in Indonesia. The remainder of the paper presents our results in detail, along with numerous robustness checks.

Contribution to prior research

A substantial theoretical and empirical literature relates to the questions we address here: the measurement of pro-social behavior; the effects of public sector salaries on the ability and intrinsic motivation of public sector workers; and the differences in intrinsic motivation between public and private sector workers. With regard to the measurement of pro-social behavior, most prior research reviewed has relied on responses to widely-used personality questionnaires (e.g., Dal Bó, Finan and Rossi 2013) or the World Values Survey (e.g., Dur and Zoutenbier 2011 or Smith and Crowley 2011). Fewer studies have used behavioral measures of the intrinsic motivation of public sector workers.

Our tests of the effects of wage levels on intrinsic motivation contribute to a substantial body of research, much of it theoretical, on this issue. Ellingsen and Johannesson (2008) argue that pro-social individuals are more likely to act pro-socially when the mission of the organization to

³ Worldwide Governance Indicators place Indonesia’s control of corruption below the 40th percentile of all countries (Kaufmann, Kraay, Mastruzzi 2009), suggesting a weaker pro-social orientation.

which they belong is pro-social and the organization chooses a compensation scheme that assumes that they will act pro-socially (see also Benabou and Tirole, 2006 and Andreoni and Bernheim, 2009). One prediction of this literature is that pro-social behavior should be greatest in organizations that have a pro-social mission and pay lower wages than the private sector (Frey, 1997; Francois, 2000; Besley and Ghatak, 2005; Brewer and Selden, 1998; Crewson, 1997; Perry, 1996; Perry and Wise, 1990; Sheehan, 1996; Tirole, 1994; Wilson, 1989). Organizations that can attract individuals who share the organization's mission will undertake activities at lower cost and be subject to less shirking (Besley and Ghatak, 2003, 2005; Delfgaauw and Dur, 2007; Dixit, 2002; Francois, 2007; among others).

Governments, compared to private sector companies, are more likely to be seen by pro-social individuals as pursuing a pro-social mission; government compensation schemes also more closely resemble the pro-social compensation strategies that Ellingsen and Johannesson (2008) outline. Prendergast (2007) argues, though, that pro-sociality in government officials can lead to excessive generosity towards the beneficiaries of government programs, a prediction that underlines the need for evidence on whether government officials are, indeed, more pro-social. Evidence is sparse, however, about whether government employees are indeed more pro-social, or whether those with more pro-social attitudes actually work harder on tasks that benefit society.

Buurman, et al. (2012) examine data taken from the results of a large Dutch survey of workers. Respondents were compensated for participating in the survey and could choose what type of compensation they would receive: a gift certificate, a lottery ticket, or a charitable donation. Public sector employees (broadly-defined) were significantly more likely to make the “pro-social” choice, a charitable donation. We build on this work in two ways. In our experiments, the units of compensation are the same (money for the charity or money for the subject), which allows us to avoid the potentially confounding effects of pro-social and risk-taking behaviors when compensation also involves lottery tickets. In addition, our subjects did not know the details of our experiments prior to choosing to participate in them, avoiding the potential selection bias that could emerge when the choice to participate is influenced by knowledge of the treatment itself (e.g., compensation in the form of a gift certificate, lottery ticket or charitable donation).

Serra, et al. (2011) use a Generalized Trust Game to assess workers' pro-social motivation and, to assess workers' pro-poor orientation, they rely on workers' response to a survey question asking them to rank the importance of eight job characteristics, including an “opportunity to help the poor”. Their behavioral measure of pro-social behavior is a proxy, trust. The dictator game that we analyze is a direct behavioral measure of pro-sociality.

Gregg, Grout, Ratcliffe, Smith and Windjeijer (2011) analyze the data from a survey of thousands of British workers, including employees in for-profit and (as in Buurman, et al., 2012) non-profit “non-caring” and “caring” (health, education and social care) sectors. Their evidence for pro-sociality is “behavioral” in the sense that it is the actual – self-reported – overtime hours that respondents work. Our measure of pro-social behavior, actual contributions to charity, avoids the problem of imperfect or biased reporting of unpaid overtime hours, as well as ambiguities in the interpretation of overtime work. For example, even if pro-social orientation is the most plausible explanation of unpaid overtime in the non-profit caring sector, it is also possible that non-profit employers attract less productive workers who need to work extra unpaid hours to achieve the same output.

Carpenter and Gong (2013) also examine the effects of mission orientation on effort. They record political party preferences of a group of U.S. university subjects, and then randomly assign

them to effort tasks that serve the mission of either their preferred party, or that of the rival party. In their setting, in which mission mismatching actually *reduces* the utility of subjects (they are asked to exert effort on behalf of a political party that they oppose), they find that mission-oriented subjects exert more effort when matched to their preferred party. Our comparison focuses on a more typical public sector setting, where workers might be highly motivated or unmotivated to deliver benefits to society, but not actively opposed to delivering them.

Dal Bó, Finan and Rossi (2013) report the results of a field experiment in Mexico that comes closest to the experimental analysis we report below. They investigate the effects of public sector wages on the quality and public service motivation of applicants for a particular job in the Mexican government, to conduct community outreach in poor, insecure villages in more remote regions of Mexico. High and low salaries were randomly assigned to recruitment centers. Using widely-used questionnaires to measure public service motivation and IQ, they find that higher wages attract applicants with significantly higher ability (IQ and prior wages). However, higher wages have no systematic effect on the public service motivation of applicants.

We find (as in Mexico) that higher wages enlarge the pool of workers interested in the public sector. However, in our experimental setting, motivated applicants are significantly less likely to choose the public sector when wages are increased. In addition, raising wages has no impact on the ability or workers who choose the public sector. These differences likely arise for the following reasons.

First, we can precisely measure subjects' task-relevant ability and preferences for the public sector mission. A precise measure of intrinsic motivation allows for a more powerful test of the effect of higher wages on motivation. Second, our experiment focuses on public sector jobs for which private sector pay is almost always higher and in which intrinsic motivation plays a correspondingly larger role. The Mexico experiment concerns a public sector task (community outreach) that is likely to be lower paid, or have no counterpart, in the private sector. Third, ability and motivation are uncorrelated, in contrast to the Mexico case; both the models here and in Dal Bó, Finan and Rossi (2013) predict negative effects of higher wages on motivation, as we document below, when ability and motivation are uncorrelated. Fourth, subjects in our setting can accurately estimate the contribution of their effort to the public sector mission, making it more attractive for intrinsically-motivated high ability workers to apply to the public sector. Finally, it is likely that the distribution of intrinsic motivation within the subject pool in Dal Bó, Finan and Rossi (2013) to the right of (more motivated than) the distribution of our subjects, since in Mexico the pool is drawn from individuals interested in working in remote, poor and insecure communities, while ours comes from individuals who are likely to enter the public or private sector "fast track."

The third issue we investigate is whether actual public sector workers are more pro-social than private sector workers. Prior research has relied on both observational and behavioral data to examine this question. Respondents to the World Values Survey classify themselves as public, private or NGO sector employees. Using these data, Dur and Zoutenbier (2011) conclude that public sector respondents indicate greater willingness to help people who are nearby and Smith and Cowley (2011) find that public sector respondents are more likely to say that they most value a job that is important and gives a feeling of accomplishment. In both cases, the findings are strongest when public sector respondents are more confident in the pro-social mission of the public sector.⁴ Our analysis extends these findings with a behavioral measure of pro-social tendencies that is more

⁴ In Dur and Zoutenbier, the effect increases when respondents report greater confidence in political parties. The associations in Smith and Cowley are strongest when respondents perceive less corruption.

directly related to the work of national government officials; a well-defined population of public and private sector subjects; and with evidence on the actual sector choices of pro-social individuals.

Using behavioral data, Buurman, et al. (2012) also find that public sector employees are more pro-social, but in the Netherlands and for public sector employees broadly rather than general government employees specifically. Gregg et al. (2011), using self-reported hours of overtime worked, examine the intrinsic motivation of non-profit workers, and not general government employees specifically. They conclude that only workers in the non-profit caring sector report significantly more unpaid overtime. Employees in the non-profit, non-caring sector report roughly the same levels of overtime as those in the for-profit sector. In contrast, we find significantly greater pro-social behavior in the “non-profit non-caring sector” (central government employees and students who are committed to entering the Ministry of Finance). One possible explanation for the different results is that we use a more precise measure of pro-social motivation. A more interesting explanation lies in possible differences in the labor market: to the extent that the Indonesia’s non-profit caring sector is small compared to the United Kingdom’s, the non-profit, non-caring sector may attract more pro-social employees than it otherwise would.

Serra et al. (2011) also explore the mission orientation of public sector workers in a non-OECD setting. They use data on medical professionals, front-line providers rather than general government officials. They also conduct their study in Ethiopia, a country that ranks much lower than Indonesia in the pro-sociality of its public sector. Finally, they measure pro-sociality differently, using behavior in a trust game, and whether subjects say that the opportunity to help the poor is most important to them. In contrast to our findings, they find that government and private sector medical professionals in Ethiopia are similar along these two dimensions. Both of these groups score lower on the two dimensions than employees in non-profit, non-governmental organizations.

Our unique subject pool also allows us to advance understanding of the role of selection in the emergence of differences in pro-social motivations between government and private sector employees. This is a central issue in the literature. Selection is at work if organizations attract workers who share their mission orientation (Besley and Ghatak, 2005; Gregg et al. 2011; Serra et al. 2011). Intrinsically-motivated individuals always behave pro-socially; differences across organizations in the attitudes of their employees are therefore driven by the selection of intrinsically-motivated individuals into organizations that share their mission.⁵ However, a growing literature also suggests that individual norms evolve over time as a function of the other individuals with whom they are in contact – their families, but also the organizations in which they are active (Dohmen et al. 2012; Tabellini, 2008; Bisin and Verdier, 2001; Bulte and Horan, 2011). This literature implies that individuals in organizations with a pro-social mission become more pro-social over time.

Only Gregg, et al. (2011) have provided empirical evidence on the issue. They look at respondents from the non-profit caring sector, comparing those respondents who switch to the for-profit caring sector with respondents who do not switch. If selection is operating, those who switch should be less pro-social and report lower levels of unpaid overtime. This is what Gregg et al. (2011) find.⁶ Our study design better allows us to exclude competing explanations for these

⁵ Francois (2000) makes a somewhat different selection argument: individuals inclined to pro-social behavior should only exhibit it in non-profit or government settings where managers do not have high-powered incentives to take advantage of the free effort that they get from pro-social employees by reducing costs elsewhere in the organization.

⁶ The 83 respondents who reported moving from the non-profit to the for-profit caring sector were significantly less

differences. We identify selection effects using a very large sample, none of whom have experience in either government or private sector employment, so that socialization cannot confound our findings.

Model

Previous research focuses on the interaction of wages, intrinsic motivation, and ability in the decision to enter the public sector. To see this interaction most clearly, assume that workers earn income in the private sector based on piece rate compensation, where income is the product of their effort and ability times the private sector wage rate ($w_{priv}a_i e_i$), and ability $a_i \in (0,1)$ determines the fraction of effort that is transformed into output. For simplicity, and to fix ideas, the private sector is assumed to be “large” relative to the public sector, so the wage rate is unaffected by employment in the public sector.

In the public sector, workers earn a flat wage, unrelated to effort and ability, given by w_{pub} . However, pro-social workers (those with $\theta_i > 0$) gain utility when they exert effort on behalf of society. They may also care about how their effort actually benefits society, where the benefits to society are a function of both their ability and effort utility. Their utility therefore increases with effort according to $\lambda a_i e_i \theta_i$, where $\lambda \in \left[\frac{1}{a_i}, 1\right]$; $\lambda = 1$ implies that workers care only about the actual contributions that their effort makes to society and $\lambda = \frac{1}{a_i}$ implies that workers value their efforts on behalf of the public, regardless of the contributions that their efforts actually make. The utility cost of effort increases in effort, and is given by $\frac{1}{2}e^2$. Assuming that extrinsic and intrinsic motivation, and effort, enter utility separably, the utility of workers who choose to work in the private or public sectors can be described by:

$$\text{Private sector: } u_i = w_{priv}a_i e_i - \frac{1}{2}e^2$$

$$\text{Public sector: } u_i = w_{pub} + \lambda a_i e_i \theta_i - \frac{1}{2}e^2$$

Workers who select into the private sector choose effort to maximize $w_{priv}a_i e_i - \frac{1}{2}e^2$, giving $e_{priv} = w_{priv}a_i$. In the public sector, they choose effort to maximize $w_{pub} + \lambda a_i e_i \theta_i - \frac{1}{2}e^2$, or $e_{pub} = \lambda a_i \theta_i$. Workers are indifferent between the public and private sectors when, given private and public sector wages, $w_{priv}a_i e_{priv} - \frac{1}{2}e_{priv}^2 = w_{pub} + \lambda a_i e_{pub} \theta_i - \frac{1}{2}e_{pub}^2$.

We are interested in establishing how worker ability and motivation influence their willingness to join the public sector, conditional on the public sector wage. To see this, we ask what public sector wage leaves workers with ability and pro-social motivation a_i and θ_i just indifferent between the public and private sectors. Substituting for optimal public and private sector effort gives $(w_{priv}a_i)^2 - \frac{1}{2}(w_{priv}a_i)^2 = w_{pub} + (\lambda a_i \theta_i)^2 - \frac{1}{2}(\lambda a_i \theta_i)^2$. Rearranging, the expression for the public sector wage rate that leaves the subject just indifferent is $\bar{w}_{pub} = \frac{1}{2}(w_{priv}a_i)^2 - \frac{1}{2}(\lambda a_i \theta_i)^2$.

likely to report unpaid overtime in the non-profit sector than the 2404 respondents who remained in the non-profit caring sector.

To see the effects of the public sector wage on the ability and intrinsic motivation of individuals who are just indifferent between the public and private sectors, one can totally differentiate this expression. It follows immediately that workers' pro-sociality, θ_i , unambiguously falls when the public sector wage \bar{w}_{pub} increases, holding ability constant: $\frac{\partial \theta_i}{\partial \bar{w}_{pub}} \Big|_{\partial a_i=0} = -\frac{1}{(\lambda a_i)^2 \theta_i} < 0$. That is, holding ability constant, an increase in the public sector wage reduces the pro-social motivation of the individual who is just indifferent between the two sectors. However, the effect is attenuated the more pro-social are workers, the greater is their ability and the more that workers value their actual contribution to the pro-social mission (the larger is λ). By the same logic, holding pro-sociality constant, an increase in the public sector wage increases the ability of workers who are just indifferent between public and private sector employment: $\frac{\partial a_i}{\partial \bar{w}_{pub}} \Big|_{\partial \theta_i=0} = \frac{1}{w_{priv}^2 a_i - (\lambda \theta_i)^2 a_i} > 0$. This effect is attenuated when ability and the private sector wage are high, but amplified when pro-sociality and the degree to which workers care about their actual contribution to the pro-social mission (λ) are high.

The model provides a framework for organizing the results here and in the literature. For example, we examine a situation in which the private sector wage is relatively high - most individuals can earn more in the private sector than in the public sector under all public sector wage regimes. Under these circumstances, changes in the public sector wage have a smaller effect on ability: the comparative static $\frac{\partial a_i}{\partial \bar{w}_{pub}} \Big|_{\partial \theta_i=0} = \frac{1}{w_{priv}^2 a_i - (\lambda \theta_i)^2 a_i}$ is smaller. Consistent with this, we find no significant effects of wages on ability. In contrast, in Dal Bó, Finan and Rossi (2013), private sector wages are relatively lower; their evidence reveals correspondingly significant effects of public sector wages on ability. The model also makes clear the role played by the intrinsic motivation of the population from which public sector workers are drawn. If the population is, in general, highly motivated, then wages have a smaller effect on intrinsic motivation ($\frac{1}{(\lambda a_i)^2 \theta_i}$ is smaller) and a larger effect on ability ($\frac{1}{w_{priv}^2 a_i - (\lambda \theta_i)^2 a_i}$ is larger). This corresponds to the contrasting findings of the effects of public sector wages on ability and motivation that we document below, in Indonesia, and that Dal Bó, Finan and Rossi (2013) find in their field experiment in Mexico. Our subjects expect to join the fast track at the Ministry of Finance or a private sector firm and are likely to be less intrinsically motivated, on average, than subjects who respond to job advertisements seeking people willing to work in remote, poor communities, as in the Mexico experiment.

Finally, in the model here, pro-social motivation and ability are uncorrelated. An increase in the public sector wage unambiguously reduces the intrinsic motivation of individuals who are just indifferent between the public and private sectors. Consistent with this, among our subjects, for whom pro-social motivation and ability are indeed uncorrelated, higher wages attract less motivated individuals to the private sector. In contrast, among the subjects in Dal Bó, Finan and Rossi (2013), ability and motivation are correlated; higher public sector wages are not associated with a drop in intrinsic motivation.

Experimental Design and Hypotheses

Our experimental design and subject pool allow us to address three questions that emerge from this discussion. First, do more pro-social or mission-oriented employees actually exert more effort on behalf of the mission, generating benefits for society? Second, do high public sector wages induce less pro-social individuals to enter the public sector? And, third, are the individuals who select into non-caring, central government positions more pro-social than those who select into the private sector?

Testing these hypotheses requires an accurate measure of pro-social behavior. However, pro-social behavior can be defined in different, reasonable ways. For example, individuals manifest pro-social behavior when they make sacrifices to provide direct assistance to people they know or to people they do not know; to people from their locality or ethnic group, similar to the World Values Surveys question used in Dur and Zoutenbier (2011), or to people more physically or socially distant from themselves; and when they provide assistance directly to individuals or indirectly, by donating to organizations that, in turn, assist anonymous individuals.

Our aim is to capture pro-social behavior that is most relevant to employees in the “non-caring” government workplace. First, since their actions have only an indirect effect on citizen welfare, we assess pro-social behavior by measuring donations to an organization that, in turn, provides assistance to anonymous individuals. Second, the reach of the organization should match the jurisdiction of the employees’ own organization. Since our focus is the behavior of workers in the government of Indonesia, the organization should therefore have a national reach. Third, the organization should have no ideological attractiveness to potential donors apart from the work it does in providing assistance to Indonesians. Fourth, the organization should be well-known, such that potential donors are all equally familiar with it.

There are few such organizations in Indonesia. In fact, after canvassing broadly, we found only one, the Indonesian Red Cross Society. The mission of the Indonesian Red Cross is not specific to any particular region or type of problem, but rather a general charity that assists with disaster-relief, ambulance services, climate change, disaster preparedness, water, sanitation, HIV/AIDS, Avian FLU and blood donation, among other activities.⁷

To measure pro-social behavior, we asked subjects to play a version of the standard dictator “game.” Normally, it is played with two players, one of whom is given an endowment of \$X. The first player can transfer any proportion of the \$X to the other player. Standard results for this game show that individuals (on average) give about 10% of their endowment to the other player (Hoffman et al. 1994; Eckel and Grossman, 1996). We change the standard setup by replacing the second player with the Indonesian Red Cross Society.⁸ Subjects were asked to donate as much as they liked out of an endowment of 2000 tokens (equal to 16,666 IDR or \$1.78) to a charity, the Indonesian Red Cross. Income per capita in Indonesia is approximately \$3,000; this amount is approximately 20

⁷ Previous research has also used charitable organizations in dictator games. Eckel and Grossman (1996) find, for example, that subjects give substantially more when the anonymous recipient is replaced with a charity (in their case, the American Red Cross). See also Carpenter et al. (2008) and Li et al. (2011).

⁸ A large literature in behavioral economics uses the dictator game as its core measure of altruism and pro-sociality (Forsythe et al 1994; Eckel and Grossman, 1996; Whitt and Wilson, 2007; among many others). Previous research has also replaced the recipient of the dictator game from a student to a charitable organization (Eckel and Grossman, 1996; Li et al, 2010; Carpenter et al. 2008, among others).

percent of daily income per capita. The average cost of lunch at the local cafeteria was approximately 15,000 IDR, so we can be confident that the stakes were not trivial for the subjects.

The first question we address is whether pro-sociality, as measured by this dictator game, correlates with actual effort in a pro-social task. To assess real effort, we utilize the “slider task” adapted from Gill and Prowse (2011). Subjects are shown 48 sliders on a computer screen. Each slider is set on the left, and the task for subjects is to move the slider to the center. The task demands real effort, but is sufficiently dull so as to rule out the possibility that the task itself intrinsically motivates subjects. Subjects are given two minutes to try and complete as many sliders as they can. The number of sliders completed in two minutes is the measure of effort.

While the task is simple, subject performance could still exhibit learning effects that would inject noise into our estimates. To minimize learning noise, the first rounds of the experiment constituted a practice block, where subjects completed four rounds of practice with the slider task. Subjects were first asked to engage in the slider task for four minutes, where they were encouraged to practice different strategies. Next, they were asked to engage in timed practice for three additional rounds, each lasting – as in the remainder of all the games – for two minutes.⁹

Once the practice rounds were over, we informed subjects that they would now be using the slider task to raise money for charity. In this round (referred to here and below as the “Charity” round)¹⁰, subjects were informed that for each slider they successfully completed, 100 tokens would be (and actually were) donated to the Indonesian Red Cross. The subjects themselves did not earn anything during this round and the data from this round did not enter into the calculation of subject payoffs. We use the results from this round to estimate whether those who give more to charity in the dictator game also exert more effort on behalf of the charity.

When subjects completed the charity round, they were told that they would engage in four tasks in the remainder of the experiment. Subjects were told that one of the four tasks would be chosen at random at the end of the experiment and that they would be paid according to the results of the chosen task (in addition to the payouts associated with the dictator and charity tasks described above). This ensures that decision-making across tasks is independent.

The first task faced by the subjects constitutes our best measure of their ability. The “private sector task” asked subjects to complete the slider task under a piece rate pay scheme designed to mimic the private sector. Each slider earned subjects 100 tokens for themselves. They engaged in this task for three rounds of two minutes each. If this task was chosen for payment, the sum total of all sliders completed in the three rounds was paid to the subject.

Once the private sector task was completed, all subjects engaged in a “public sector task” where they were asked to complete the slider task under a “public sector” pay scheme. The public sector mimics key elements of the real public sector in two ways. First, public sector salaries are generally divorced from effort and are “compressed” – those of different abilities receive similar pay.

⁹ Some of the subjects – though none in the games analyzed here – were treated with compensation schemes in which they were slotted into different pay grades according to their ability. Therefore, the ability of all subjects was measured in the fourth round. They were informed that their score in the fourth round would affect their payment in the later blocks, though they were not told exactly what levels of performance would translate into which levels of compensation. Since the subjects examined in the analysis here were only exposed to a flat-pay scheme, the ability measure from the fourth round played no role at all.

¹⁰ To avoid priming the subjects, we referred to this round as part of the practice rounds in the instructions.

Hence, all subjects in the public sector task are paid a flat salary. Second, although effort in the public sector does not benefit public sector workers, it does benefit society. Consequently, for each slider the subjects completed in the public sector task, the Indonesian Red Cross received 100 tokens. Note that pay in the “public sector” is completely divorced from effort.

An important characteristic of the experimental “public sector” is that its mission exactly corresponds to our measure of pro-sociality. Subject motivation to serve the public sector mission can therefore be precisely measured, allowing for a more precise identification of the effects of wages on the intrinsic motivation of entrants into the public sector.

Subjects are likely to differ in their ability to do the slider task. This is an important obstacle to using between-subject comparisons in order to make judgments about differences in intrinsic motivation. Ideally, then, we would like to isolate the component of public sector effort that is independent of ability. For example, in the model, public sector effort is given by $\lambda a_i \theta_i$ and we would like to isolate $\lambda \theta_i$. Unfortunately, there is no measure of ability that is untainted by individuals’ motivation. For example, Prior and Lupia (2008) asked subjects fact-based political questions, paying some of them for correct answers, but not others. Among those subjects who reported following politics “most of the time”, those who were paid recorded 32 percent more correct answers.

We therefore use the effort in the private sector task, as the least noisy measure of subject ability. As in Prior and Lupia (2008), the private sector task reduces noise because it gives participants an incentive to do their best. However, it is possible that subjects may be differently motivated by high-powered incentives. High scores in the private sector task may, as a consequence, not reflect greater ability, but greater motivation to work hard under piece rate compensation schemes. This is easy to see from the model, where $e_{priv} = w_{priv} a_i$. If we correct public sector effort for ability using private sector effort, we get $\frac{e_{pub}}{e_{priv}} = \frac{\lambda \theta}{w_{priv}}$. The ratio on the left-hand side constitutes an ability-adjusted measure of public sector effort, but it is weighted by private sector motivation, the private sector wage rate.

Nevertheless, noise from using private sector effort as an ability control is less problematic than using alternative measures of ability. For example, we could also use a measure of effort from the final practice round, for which subjects receive neither intrinsic nor extrinsic rewards. In this case, though, low scores would not necessarily reflect low ability, but rather disinterest in exerting effort on an unmotivated task. Indeed, as the private sector wage goes to zero, $\frac{e_{pub}}{e_{priv}} = \frac{\lambda \theta}{w_{priv}}$ becomes essentially uninterpretable. Consistent with the argument that this should be a particularly noisy measure of ability, the standard deviation of effort in the final, uncompensated practice round is significantly larger than the standard deviation of effort in private sector effort.

“Real world” efforts to control for ability confront similar challenges. Dal Bó, Finan and Rossi (2013) are at the frontier when they employ IQ and salary history as ability measures. However, these also may be correlated with motivation. This is obvious in the case of salary history – those with higher salaries in prior employment may be more able, but may also be more motivated. In the case of IQ, Duckworth et al. (2011) identify a significant relationship between test motivation and IQ scores. If test motivation and public sector motivation are also correlated (i.e. those who are motivated to do well on the IQ test are also motivated to respond positively to the self-reported measures of public sector motivation), this would yield a correlation between measured ability (IQ) and measured motivation. Their model predicts that when the two are correlated, higher

wages do not necessarily deter the most highly motivated from applying to the public sector, the result that emerges from their field experiment. One reason to believe that our measure of ability is less sensitive to motivation is that it is uncorrelated with our measure of motivation.

The formulation of effort as a multiplicative function of ability and motivation is intuitive and common. The exact function is of course unknown, however. We therefore also examine the robustness of our results to an alternative assumption, that effort is an additive function of ability and motivation, so that we correct public sector effort for ability by using the expression: $e_{pub} - e_{priv}$.

We conducted two treatments using a between-subjects design at the University of Indonesia. Each treatment had one of two possible public sectors, one with a “low” flat salary, of 1400 tokens per round, and one with a “high” flat salary of 2200 tokens per round. Since we are primarily concerned with intrinsic motivation in this paper, salaries were chosen to ensure intrinsic motivation would play a large role in the decision to join the public sector. All subjects in the low salary treatment were sufficiently capable of manipulating sliders that they could earn more in the private sector (piece rate) task. About 90 percent of subjects in the high salary treatment could earn more in the private sector task.

Once they were familiar with both the private and public sector tasks, subjects were given a choice of sectors – private or public – and then completed three further rounds of either the private or public sector task, corresponding to their choice. This is called the “sector choice task”, which incentivizes the decision to choose between the public and private sectors. This allows us to isolate the effects of the public sector wage on the intrinsic motivation of workers who choose employment in the public sector.¹¹

After completing all of the games involving sliders, subjects engaged in two additional tasks. One, not of concern here, was a risk measure (using the Eckel and Grossman elicitation method, Eckel and Grossman, 2002). The other was an extensive survey recording subject demographics. Finally, towards the end of the session, subjects were asked for a volunteer to assist with payment to the charity. First, the volunteer would roll the (four-sided) die to determine the task that would be paid out at the end of the session. Next, the volunteer would verify payment by accompanying an experimenter to the closest bank and make the cash donation directly to the bank account of the charity.

UI and STAN students received 25,000 IDR as their show-up fee. Average earnings from the experiment were around 120,000 IDR. All sessions were conducted during March 2012 and March 2013 and took about 2 weeks, on each occasion, to complete in each institution. In addition, since subjects used a mouse to manipulate the sliders, care was taken to utilize identical mice at each location and to use the same screen resolution on the computers to minimize differences across samples. Since this was an individual task, multiple treatments took place within the same session. Subjects were randomly assigned to seats within the computer lab and subjects in adjoining seats were given alternating treatments.

¹¹ The final task, Task 4, was simply a continuation of the sector choice task, Task 3, but contains a treatment shock. Subject participation in this task had no influence on the earlier tasks; analysis of Task 4 is , beyond the scope of this paper.

Experimental sessions were conducted in March 2012 and March/April 2013, with a total of 1,723 subjects.¹² Subjects were recruited using announcements with the aid of students at each location. The experimental sessions consisted of a number of games, but always began with the dictator task. All earnings were expressed in tokens, with an exchange rate of 8.33 IDR per token.

All subjects were paid in cash at the end of each session. Payments were made to the charity at a nearby bank, in cash, to the charity's listed bank account. Specifically, at the end of a session, experimentalists asked for a volunteer from the session. The volunteer stayed behind to verify payment to the charity. Once all subjects were paid, the volunteer added up the total donation to the charity from the session, and filled out a cash deposit slip for (depending on the location) Bank Mandiri, or PT. Bank Rakyat Indonesia. Deposits were made in the presence of the volunteer once per day in cash at the closest bank location. All subjects were informed of this procedure in the instructions at the beginning of the experiment. Payments were carried out once a day in the presence of a volunteer from the session. In the case of multiple sessions in a day, participants were informed when the donation was to take place, and were invited to come verify payments at that time.

Results

The results reviewed here support the three main conclusions of the paper. First, more pro-social individuals exert more effort on pro-social tasks. Second, more pro-social individuals select into the public sector when public sector wages are either high or low, but the tendency is significantly attenuated when salaries are high. Third, in Indonesia, individuals who select into public sector (general government) employment (students at STAN) are more pro-social than individuals who do not (students at UI).

Pro-sociality and effort

Although the literature has assumed that pro-social attitudes translate into greater effort when individuals work in organizations with pro-social missions, this assumption has received little empirical attention. By comparing subject behavior in the dictator game, our measure of pro-sociality, with subject effort on behalf of the Indonesian Red Cross in the real effort task, we can exactly measure the degree of mission-matching and assess whether, in fact, a closer match of mission preferences and organization mission indeed increases effort.

Subjects' effort on behalf of the Indonesian Red Cross is given by their performance in the Charity round, in which they were told that every slider they completed would yield 100 tokens for the IRC. Subjects received no compensation themselves in this round. As the previous discussion makes clear, in order to account for ability differences, we divide their effort in the Charity round by their effort in the private sector (piece rate) task. Results are robust to accounting for ability by subtracting piece rate effort from Charity round effort (not shown).

¹² Sessions were conducted in one month over two years. The overall research project contained a number of treatments using the same sample and always began with the dictator game. We pool the data together for the purposes of this paper so as to maximize the number of subjects per treatment. To check for systematic differences between the samples across the two years, we test for significant differences in survey responses across the two years (since the surveys were nearly identical). No significant differences are found in the data.

We ran a large number of different public sector pay treatments with both STAN and UI students in March 2012 and March 2013. Though exposed to different pay treatments, nearly all subjects were asked to participate in the dictator game, practice rounds, charity round, and the piece rate round. Hence, we can report the effects of pro-sociality on effort for more than 1,400 subjects.¹³

The relationship between motivation and effort is based on estimates of the following OLS regression,

$$EFFORT_i = \alpha + \beta DONATE_i + \delta CONTROLS_i + \varepsilon_i$$

where the dependent variable is the ratio of effort in the Charity round (effort for charity) to effort in the private sector (piece rate) task. *DONATE* is the amount that subjects give to the International Red Cross in the dictator game.¹⁴ The *CONTROLS* consist of gender and age, which are often related to pro-sociality.¹⁵ We include a dummy for location (STAN equals one, UI equals zero) to see if effort differs significantly, after controlling for pro-sociality, across public and non-public sector subjects. We also control for subject confidence in our assurances that the charity will be paid. One specification also includes 240 subjects that faced different versions of either the charity round or private sector task. In that specification, dummy variables for the treatments are added to the model to control for their inclusion.

The results are displayed in Table 1. The central findings are in the first row: across all specifications, subjects who send more to the Indonesian Red Cross in the charity game also work harder on behalf of the Indonesian Red Cross. The second column adds all other controls, with practically no effect on the coefficient of *DONATE*. Finally, the third column adds subjects that faced difference versions of either the charity effort task, or the private sector task. Again, the estimate of *DONATE* is robust to their inclusion. The findings in Table 1 provide direct, behavioral evidence that employees motivated by a pro-social mission do, in fact, work harder in a pro-social setting. That is, mission orientation leads to the correlation of subject effort costs and monetary costs.

An alternative interpretation of Table 1 is that consistency bias leads to this correlation. Consistency bias would arise if subjects who give more to the charity also engage in greater effort for the charity because they value consistency in their choices. Consistency bias therefore generates a correlation between the effort costs perceived by the subject and the monetary cost that the subject already incurred. This bias is unlikely to emerge in this setting, however. Effort costs are stickier – less likely to be shifted by consistency bias – than monetary costs. In addition, the Charity

¹³ In addition to the dictator game and effort tasks described above, which were faced by the 1,480 subjects, approximately 240 additional subjects faced slightly different versions of the effort task. In one treatment, affecting approximately 180 subjects, we substituted the standard piece-rate private sector task with a risky private sector task, in which subjects had a 10 percent chance of suffering a positive shock and a 10 percent chance of a negative shock to their earnings. For another 60 subjects, when they engaged in the Charity round, the token multiplier on effort was 25 percent of its usual value (25 tokens per slider instead of 100). These subjects are excluded from the analysis in columns 1 and 2. We include these subjects in column 3, but add dummy controls for the treatments. Results are entirely robust to their inclusion.

¹⁴ For ease of presentation, the dictator game variable (range from 0 – 2000) is divided by 1000 in the table.

¹⁵ Prior literature has shown that higher levels of giving in the dictator game is associated with females (Eckel and Grossman, 1998) and older individuals (Bekkers, 2007).

task was separated from the dictator game by four rounds – ten minutes – of tedious practice moving the sliders, further suppressing any latent consistency bias.

Table 1: Pro-social attitudes and pro-social effort

Dependent Variable: Ability-adjusted Effort for Charity			
	I	II	III
Amount Sent in Dictator Game	0.016** (0.01)	0.015** (0.01)	0.019*** (0.01)
Location (D) (1 = STAN)		-0.001 (0.01)	-0.002 (0.01)
Gender (D) (1 = Female)		0.006 (0.01)	0.005 (0.01)
Age (in years)		-0.004 (0.00)	-0.003 (0.00)
Belief that Charity was Paid (5 = Complete Confidence)		0.002 (0.00)	0.003 (0.00)
Treatment (D) (1 = Risky Private Sector)			0.001 (0.01)
Treatment (D) (1 = Low Charity Multiplier)			-0.006 (0.02)
Constant	0.947*** (0.01)	1.016*** (0.07)	0.996*** (0.07)
R-squared	0.003	0.005	0.006
P-Value	0.037	0.231	0.168
Observations	1480	1480	1720

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Dependent variable is ability-adjusted effort. OLS specification, standard errors in parentheses. The dictator game variable is divided by 1000 for presentational convenience. Results are robust to specifying the dependent variable as the difference between public and piece rate effort.

Pro-sociality and public sector salaries

The second question we address is whether pro-social individuals are less likely to enter the public sector when public sector wages are high or whether, as in Dal Bó, Finan and Rossi (2013), wages have no effect on the intrinsic motivation of new entrants. 187 subjects at the University of Indonesia were asked to choose between a piece rate compensation which benefitted themselves (private sector) or a flat salary and effort benefitting charity (public sector). This laboratory choice is not foreign to the UI subject pool. While the UI subjects have not already chosen to enter the public sector, unlike those at STAN, many express an interest in public sector employment and would be competitive candidates if they applied (though the great majority, in fact, will go into the private sector).

We conducted two treatments, a “low salary” control and a “high salary” treatment, with subjects randomly assigned between the two. We focus on this sector choice decision in order to estimate the effects of high and low salaries on intrinsic motivation. The following probit specification is used to estimate a regression that pools the high and low wage treatments:

$$PUBLIC\ SECTOR_i = \alpha + \beta DONATE_i + \gamma ABILITY_i + \delta CONTROLS_i + \varepsilon_i$$

The variable *ABILITY* is again measured using subject performance in the private sector (piece rate) task.

The private sector, reservation wage plays a key role in predictions about the effect of public sector wages on the pro-social motivation and ability of individuals who prefer the public sector. The experimental design allows us to precisely measure the private sector reservation wages of potential private sector workers. This eliminates noise that emerges from possible unobserved differences in the reservation wages of workers with high and low intrinsic motivation.

Table 2: Pro-social attitudes and entry into the public sector under low and high salary regimes

Dependent Variable: Sector Choice (1 = Join Public Sector)		
Treatment	Low Salary I	High Salary II
Amount Sent in Dictator Game	0.310*** (0.09)	0.072 (0.11)
Ability (Effort Exerted in Piece Rate)	-0.007* (0.01)	-0.013*** (0.00)
Gender (D) (1 = Female)	-0.215** (0.09)	-0.028 (0.11)
Age (in years)	0.026 (0.04)	-0.038 (0.04)
Belief that Charity was Paid (5 = Complete Confidence)	-0.011 (0.06)	-0.083 (0.07)
Constant	0.228	0.382
Pseudo R-squared	0.136	0.083
Chi-squared	14.35	10.58
P-value	0.014	0.060
Observations	92	95

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Probit specification, standard errors in parentheses. Table reports marginal effects. All subjects from the University of Indonesia (non-public). The dictator game variable is divided by 1000 for presentational convenience.

Table 2 reports separately the characteristics of subjects who choose the public sector under the two different salary levels. As in Dal Bó, Finan and Rossi (2013), the low salary regime attracts significantly fewer workers to the public sector than the high salary regime: 26 percent of all subjects joined the public sector in the low salary regime versus 39 percent in the high salary regime

($p < 0.07$). However, in contrast to their findings, the first row indicates that, in the low salary regime, but not the high salary regime, pro-social types are more likely to join the public sector. In the low salary regime, subjects who send an additional 100 tokens to the Indonesian Red Cross (five percent of subjects' initial endowment) are three percent more likely to choose the public sector.

Under both wage regimes, however, high ability workers are less likely to join the public sector, reflecting the earnings gap for high ability workers between the private sector and both public sector settings. Both salary levels (1400 token in the low salary treatment or 2200 tokens in the high salary treatment) are still lower than what most subjects earn from the private sector, consistent with many public sector positions around the world. Only 11 percent of our sample in the high wage treatment could earn more in the public sector (relative to their private sector outside option), while none of our sample could earn more in the Low wage treatment.

Table 3: Are public sector workers in high wage regimes less pro-social than those in low wage regimes?

Dependent Variable: Sector Choice (1 = Join Public Sector)		
Treatment	Pooled Low + High Salary	
	I	II
Amount Sent in Dictator Game	0.180** (0.07)	0.323*** (0.11)
Ability (Effort Exerted in Piece Rate)	-0.008*** (0.01)	-0.007 (0.00)
Treatment (High salary = 1)		0.619* (0.33)
Treatment X Dictator Game		-0.274* (0.15)
Treatment X Ability		-0.005 (0.01)
Gender (D) (1 = Female)		-0.117 (0.07)
Age (in years)		-0.011 (0.03)
Belief that Charity was Paid (5 = Complete Confidence)		-0.044 (0.05)
Constant	0.316	0.309
Pseudo R-squared	0.058	0.102
Chi-squared	13.73	24.15
P-value	0.001	0.002
Observations	187	187

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Probit specification, standard errors in parentheses. Table reports marginal effects. All subjects from the University of Indonesia (non-public). The dictator game variable is divided by 1000 for presentational convenience.

In table 3, we pool the treatments and test for differences in the likelihood of choosing the public sector by treatment. The first column in Table 3 shows that, across both the high and low wage treatments, pro-social individuals are significantly more likely to enter the public sector (the coefficient on the amount sent to the International Red Cross in the dictator game is significant and positive). High ability people suffer the largest pecuniary penalty for accepting work in the public sector; conditional on their motivation, they are *less* likely to enter the public sector.

The second column tests for differences in the likelihood of choosing the public sector. We identify these differences by adding a dummy variable for whether the treatment is high salary (equal to one) or low, as well as two interaction terms of the salary treatment with the dictator game and ability variables. The magnitude of the salary – dictator interaction is large, negative, and significant, indicating that intrinsically motivated subjects are significantly less likely (27 percent on average) to choose the public sector in a high wage setting than in a low wage setting. In contrast, the interactions of ability and wage regime are not significant: high ability individuals are not significantly more likely to choose the public sector in the high wage setting than the low wage setting.

A natural question is the degree to which selection effects influence the average effort by subjects who choose the public or private sectors. From Table 3, higher ability subjects are significantly more likely to choose the private than public sector under both high and low public sector wage regimes. Consistent with this, private sector subjects engage in significantly greater effort than public sector subjects. In addition, subjects who choose the public sector under the low wage regime exert greater effort (.17 standard deviations) compared to those under the high wage regime. The difference is not significant, since few subjects choose the low-wage public sector, but follows from the significantly greater pro-sociality of subjects who choose the low-wage public sector. As the earlier discussion concludes, more pro-social individuals exert greater effort in pro-social missions.

The findings in Table 3 differs from those in Dal Bó, Finan and Rossi (2013) in two important ways: raising public sector wages reduces the likelihood that intrinsically motivated individuals choose the public sector (they find no effect for most measures and a positive effect for a few measures of motivation). Furthermore, raising wages has no impact on the likelihood that high ability individuals will choose the public sector (they find a positive relationship between wages and ability). As the earlier discussion outlines, there are several explanations for these differences.

First, we are able to match precisely our measure of intrinsic motivation with the mission of the public sector. This allows for a higher-powered and less noisy test of the effects of wages on motivation. Second, when, as in our experiments, private sector pay is almost always higher, across all ability levels, increases in salary are likely to have a larger effect on the intrinsic motivation of applicants and a smaller effect on their ability. This is easy to see from the earlier expression:

$$\left. \frac{\partial a_i}{\partial w_{pub}} \right|_{\theta_i=0} = \frac{1}{w_{priv}^2 a_i - (\lambda \theta_i)^2 a_i} > 0.$$

For those who are just indifferent between the public and private sectors when private sector pay is relatively high, public sector pay has a smaller effect on ability.

Third, the effect of wages on motivation depends on the correlation between motivation and ability. In both our model and that of Dal Bo et al. (2013), when they are uncorrelated, higher wages unambiguously reduce intrinsic motivation. In fact, among our subjects and using behavioral measures of motivation and ability that correspond exactly to the public sector task, ability and motivation are uncorrelated ($p > 0.33$). When the two are correlated, as they are among the subjects

in the Mexico field experiment, using questionnaire-based measures of ability and motivation, Dal Bo et al. (2013) predict and find no effect or a slightly positive effect of wages on motivation. Fourth, subjects in our treatment know their task-relevant ability exactly and can clearly identify their contribution to the public sector mission. They are therefore more likely to take into account their actual contribution to the pro-social mission in deciding whether to join the public sector (λ is higher).

Finally, the two settings capture different segments of the public sector. The subjects in their field experiment were attracted by government job advertisements seeking applicants who would take jobs in remote and underserved areas of Mexico. Such advertisements may therefore attract more highly motivated workers, regardless of the level of pay (indeed, pay levels were only revealed to subjects once they had already chosen to apply). In this case, as the earlier discussion of the model indicates, changes in public sector pay have a weaker effect on the observed motivation of new entrants. In contrast, all of our subjects are contemplating careers that would be fungible across the private and public sectors (accounting, auditing, economics, management) and where private sector earnings of those who choose the private sector will be at least as high as those who choose the public. The distribution of intrinsic motivation among these individuals is likely to be shifted to the left (downwards) relative to the Mexican sample, but at the same time similar to the distribution of motivation of potential entrants to a large class of public sector jobs.

Pro-social behavior in the government and private sectors

Column 1 in Table 3 indicates that, on average, pooling high and low wage public sector pay regimes, those who choose to work in the public sector are significantly more pro-social than those who do not. It is not obvious that this same relationship should hold with real world public and private sector workers. The pro-sociality of real public sector workers is contingent on numerous factors and need not be higher than private sector workers. First, mission-matching is unlikely to be exact. On the one hand, workers' public sector motivation may or may not correspond to their preferences over the specific missions of the Ministries of Finance, Health, or Public Works, and their preferences for those specific missions are typically difficult to assess. On the other hand, work in the public sector can also be attractive for other reasons, ranging from job security to the enjoyment of tasks in the public sector that are less common in the private sector. Public sector work is heterogeneous in the degree to which workers can assess their individual contributions to social welfare: front line workers can better observe their contribution to social welfare than others. Finally, the political economy of public sector activity shifts public sector goals away from pro-sociality more so in some countries than in others.

The “experimental” public sector avoids these ambiguities, since pro-sociality and the public sector mission are tightly controlled and the production function of public sector benefits seamlessly and transparently translates subject effort into benefits for society. The question, then, is whether, in the particular Indonesian context in which the laboratory experiments are conducted, real world public sector workers, who operate off of the front lines (in the Ministry of Finance), in a country where the public sector is not known to be among the most efficient or to be driven by a pro-social mission, also exhibit greater pro-sociality than private sector workers.

Our subject pool allows us to compare the pro-sociality of students largely destined for the private sector (the UI students) with those who have already agreed to join, but have not yet joined, the public sector, students attending Sekolah Tinggi Akuntansi Negara (STAN), the State College of Accountancy. Though many UI students express interest in working in the public sector, none have actually committed to entering the public sector and the vast majority of them will, in fact, take

positions in the private sector. On the other hand, study at STAN is tuition-free in exchange for a commitment to join either the Ministry of Finance or to assume an accounting role at one of the other ministries, should a position be offered to the students. Students who are offered a position and turn it down are required to repay their tuition. All STAN students intend to join the public sector; nearly all do so.

Table 4: Sample differences between public and private workers

Variable	University of Indonesia	State College of Accountancy	Sig.
Observations	650	1073	
Risk Gambles	3.26	3.39	*
Effectiveness of the Charity	5.18	5.50	***
Age	19.75	20.35	***
Female (%)	53%	23%	***
Religious Attendance	4.12	4.24	**
Personal Finances	2.48	2.60	***
Family Income	2.76	2.87	**
Fairness of Others	4.56	5.10	***
Trust in Others	3.73	4.08	***
Prepared to take Risks	2.55	2.75	***
Accounting Major (%)	32%	36%	**
Want to Join the Public Sector (%)	56%	97%	***
Procedures:			
Privacy Preserved (%)?	97%	97%	
Clarity of Instructions	4.20	4.20	
Clarity of Activity	4.18	4.19	
Clarity of Survey	4.04	4.13	**
Charity was Paid	4.09	4.29	***

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. 2-sided t-tests (proportions tests for percentages).

The essentially iron-clad commitment to join the public sector is the main distinguishing feature between STAN and the University of Indonesia. For example, entry into both is highly competitive and both are prestigious, as students in both places affirmed.¹⁶ Because neither group of students has actually worked in either the private or public sectors, we can attribute any

¹⁶ For example, a student at UI, who had also been accepted at STAN, indicated that he chose UI over STAN because he did not want to join the public sector.

differences in pro-sociality between STAN and UI subjects as arising from selection effects rather than socialization.¹⁷ Table 4 presents a description of the sample in the two institutions.

The two samples differ on a number of dimensions, even though the students join their respective institutions straight out of high school. STAN subjects are less than a year older and far less likely to be women.¹⁸ The samples differ on their attitudes and preferences as well, with the public sector STAN students exhibiting slightly *greater* tolerance for risk (contrary to expectations), according to both a behavioral measure, “Risk Gambles” (Eckel and Grossman, 2008), and a stated preference measure “Prepared to take Risks” (a question taken from the World Values Survey). STAN subjects are also more religious, more trusting, and have stronger fairness preferences. Finally, STAN subjects report being in better financial health personally. However, the financial background of the subjects is not particularly different: we asked a large subsample about their parents’ monthly income and results were statistically identical across the two groups.

We estimate the following OLS regression to compare the pro-social motivation of individuals who have selected into the public sector, but not yet worked there, STAN students, with UI students, who have not selected into the public sector and are much more likely to go to the private sector:

$$DONATE_i = \alpha + \beta OFFICIAL_i + \delta CONTROLS_i + \varepsilon_i$$

Our focus is the coefficient β , where $OFFICIAL_i$ is a dummy variable equal to 1 if subject i is from STAN. The variable $DONATE_i$ is, as before, subject i 's donation to the charity and ε is the error term.

Unobserved characteristics of the different subject pools could give rise to a spurious association between their location (at STAN or UI) and their donations to the Indonesian Red Cross. For example, public sector subjects give significantly more to charity than UI students if they were significantly richer.¹⁹ Differences in group composition might also matter. It is well-known, for example, that some types of individuals are more pro-social than others (e.g., older versus younger subjects, or women versus men). If gender or age influence government employment for reasons unrelated to pro-social motivations, it becomes more difficult to infer that pro-social individuals join the government because they are pro-social. We therefore control for objective individual characteristics that are known to influence pro-social behavior, age and gender.²⁰ We also control, as before, for the extent to which subject i has confidence that the charity will be paid, to

¹⁷ There is the issue of socialization within STAN itself, prior to joining the public sector. While we cannot completely rule out the fact that subjects may be socialized at the institution, we note that there are no age effects, so subjects are not becoming more pro-social over time. However, whether subjects are socialized into becoming more pro-social during their first year is a question our data cannot address.

¹⁸ When we asked administrators about this gender gap, they stated that while STAN admits an equal number of males and females, females are reluctant to accept because public sector employment entails an obligation to relocate frequently, away from their families.

¹⁹ In the 2013 sample, we asked students to state their family income levels. STAN students reported parental income as slightly higher than UI students (but not significant: $p > 0.8$).

²⁰ The Indonesian public service does not have any employment regulations that systematically privilege applications from demographic groups that might be more pro-social (i.e., affirmative action programs that favor groups that happen to have higher pro-social motivation). On the contrary, one group known to be more pro-social, women, is significantly under-represented among the (more pro-social) STAN subjects.

ensure that subjects understood the stakes of the game; it is possible that this lack of confidence reflects individual characteristics that influence both pro-social behavior and entry into government.

Table 5: Are real public sector workers more pro-social?

Dependent Variable: Amount Sent to Charity in Dictator Game			
Subjects	All I	All II	Accountants Only III
Private sector (0) or public sector (1)? (0 = University of Indonesia; 1 = STAN)	60.969** (28.18)	47.463* (27.92)	82.961* (48.91)
Age (in years)	-6.326 (10.90)	-7.022 (10.77)	-19.010 (19.67)
Gender (D) (1 = Female)	54.19* (28.24)	59.02** (27.91)	35.390 (47.78)
Trust in Others (9 = Believes others are trustworthy)	10.16* (5.50)	8.860 (5.44)	-1.277 (9.61)
Belief that Charity was Paid (5 = Complete Confidence)	23.560 (16.36)	10.440 (16.29)	-4.703 (28.82)
Charity Rating (7 = Most effective)		57.882*** (8.82)	50.240*** (15.23)
Constant	531.112** (229.40)	300.788 (229.40)	686.550 (418.90)
R-squared	0.008	0.032	0.024
P-Value	0.018	0.000	0.024
Observations	1723	1723	596

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. OLS estimates, standard errors in parentheses. All subjects from the University of Indonesia (non-public) and STAN (public).

The results, presented in Table 5, show a significant difference between public officials (STAN students) and the students at UI. Subjects who have selected into public service (STAN) make significantly larger donations to the Indonesian Red Cross. They donate about 61 more tokens, or about eleven percent, than non-public officials. This is a large difference in the context of dictator games, in which ten percent differences in contribution rates are considered quite large. The second column adds subject i 's rating of the effectiveness of the charity. This variable controls for subjects' private information regarding the charity. However, their ratings of charity effectiveness are likely to be more heavily influenced by subjects' overall pro-sociality, precisely what we capture with the amount sent in the dictator game. In fact, the two are highly correlated. Nevertheless, even controlling for the charity rating, students at STAN behave more pro-socially than students at UI. Subjects who rate the charity as more effective also, unsurprisingly, give significantly more. In addition, consistent with previous dictator games, women are more generous than men. These results are robust to additional controls such as religiosity, personal finances, and risk-taking.

The third column focuses only on subjects who study the single academic major that is exactly common to both institutions, accounting. This group not only shares an academic interest, but also a likely future occupation. The public sector accounting majors give 83 tokens more than the private sector accounting majors, even controlling for their charity rating. As above, this result is also robust to controlling for religiosity, income, and risk-taking.

These results contrast with those in past research. In Gregg, et al. (2011), a group that includes general government employees (those in the non-profit, non-caring sector) is not more pro-social than the private sector employees. One interpretation of the evidence presented in Serra, et al. (2011) is also that government-employed front-line medical professionals are not more pro-social than their private-sector counterparts. Only Buurman, et al. (2012) find more pro-social behavior in a group that includes general government employees (all government and non-profit sector workers), but this result may be driven by the presence of workers in caring occupations. What mechanisms could explain greater differences in the pro-social motivations of private and government sector employees in Indonesia than in the United Kingdom, the Netherlands and Ethiopia?

One possibility is the measurement of pro-social behavior. Only Buurman, et al. (2012) and our analysis use direct, behavioral measures of pro-social behavior. This explanation is not entirely satisfactory, however, since, Serra et al.'s (2011) behavioral proxy for pro-social behavior (results from the Generalized Trust Game), and Gregg, et al.'s (2011) survey data (self-reported unpaid overtime) are both likely to be correlated with pro-social behavior.²¹

We conjecture, instead, consistent with the analysis in Besley and Ghatak (2005), that labor markets vary with respect to both the number of opportunities for pro-social work that they offer and the wage offers that governments make in response to changing labor market conditions. If we hold constant extrinsic rewards and the number of pro-social organizations, then a country with a less pro-social public sector should attract fewer, pro-social individuals than a country with a more pro-social public sector. However, these *ceteris paribus* conditions are unlikely to prevail.

In particular, opportunities for pro-social employment outside of government may be fewer in some countries, so that pro-social individuals concentrate in government employment. Indonesia is likely to have fewer organizations and employment opportunities with pro-social missions compared to the Netherlands and Great Britain.²² At the same time, in countries where government organizations are not ranked highly internationally in terms of their pro-social motivation, non-government employers may also rank less highly (corporate efforts to be seen as “good citizens”, for example, may be less common). In these settings, the intrinsic rewards for pro-social individuals may be higher in the general government sector, even when it is not particularly pro-social.

Conclusion

We analyze intrinsic motivation, effort and entry into the public sector in a novel setting and with new experimental instruments to capture mission-matching. The results demonstrate that mission-matching indeed leads to higher effort: individuals who are more pro-social also work harder for the pro-social mission. In addition, public sector wages influence the intrinsic motivation

21 Among the subjects in our experiments, pro-social behavior and responses to the question “can others be trusted” are significantly correlated.

22 Ethiopia has fewer still, of course. However, Serra, et al. (2011) focus precisely on a narrow class of employees (health workers) where non-government opportunities for pro-social individuals appear to be much greater.

of the individuals who enter the public sector: in low wage settings, pro-social individuals are significantly more likely to enter the public sector; the same is not the case in high wage settings. These distinct effects lead to significantly fewer pro-social workers in the high wage public sector. Finally, using a pool of subjects in Indonesia that allows us to pin down whether pro-social individuals select into public service (students at the College of Accountancy, STAN), we find that individuals who select into the public sector exhibit greater pro-social preferences than others.

In many ways our findings confirm what Wilson noted in his seminal book: intrinsic motivation is the core driver of effort in the public sector, and pay functions as a critical lever in the recruitment of motivated employees. Since it is not immediately apparent whether motivation can change over time, attracting motivated workers is a critical function of public sector pay schemes. We find that raising salaries may attract higher ability workers (as Dal Bó, Finan and Rossi 2013 have shown), they may also reduce the overall motivation of the applicant pool. The net effect on output for these competing factors is an area of future research. The findings here are part of a broader research agenda that is meant to uncover the effects on effort and motivation in the public sector. The agenda addresses questions such as, what are the effects of pay reforms meant to tie public sector performance more closely to compensation? Do they drive out pro-social individuals? Do they reduce the productivity of incumbents? And, if they do, are new entrants sufficiently productive to offset this effect?

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Appendix A - Instructions

Dictator Game Instructions Page 1 of 2:

On this page, we have a description of the charity that you will be paired with. Please read the description of this charity.

Indonesian Red Cross Society (Palang Merah Indonesia): The Indonesian Red Cross Society (IRCS) is a humanitarian organization and a member of International Federation of Red Cross and Red Crescent Societies. The IRCS was created on September 17th, 1945, exactly 1 month after Indonesia's independence. President Soekarno ordered its inception when a battle between Indonesian soldiers and allied troops broke out, leaving many wounded, on September 3rd, 1945. Based on its performance, IRCS received international recognition in 1950 when it was accepted as a member of the International Red Cross and achieved its legal status through Presidential Decree Number 25 Year 1959, which was later reinforced by Presidential Decree Number 245 Year 1963. The IRCS central headquarters is located at Jl. Jenderal Gatot Soebroto Kav. 96, Jakarta 12790.²³ Activities undertaken by the IRCS include:

PMI in Disaster Response: A variety of geographical and geological factors, as well as demographic conditions affect the high frequency of natural disasters in Indonesia. In accordance with the duties and functions of the organization, the Red Cross Indonesia is obliged to provide help and assistance during an emergency to those in need, in a professional manner based on the basic principles of the International Red Cross and Red Crescent Movement. Disaster response activities include evaluation of preferred PMI rescue and first aid by giving priority to the vulnerable, such as pregnant women, children, and seniors.

Water and Sanitation for Vulnerable Communities: In accordance with the Indonesian Red Cross policy 1999-2004 and the IFRC Strategy 2010 for public health programs, PMI is helping vulnerable groups promote public health through improved hygiene, clean water and sanitation facilities; making it an integrated program with community development in the field of first aid, disaster management, and development of water sanitation programs for vulnerable groups of people who have difficulty accessing clean water and people in disaster/conflict refugee camps.

²³ Description from Wikipedia; Accessed on January 24th 2012. Link: http://en.wikipedia.org/wiki/Indonesian_Red_Cross_Society

Dictator Game Instructions Page 2 of 2:

Now we would like to ask you whether you would like to make a donation to the charity. You are given 2000 tokens. You can choose to send none, some, or all the tokens to the charity. This amount will be added to the final total sent to the charity and you will keep the rest. Please enter the amount you would like to send and the amount you would like to keep below. Note that both these amounts should add to 2000.

Tokens you would like to keep: _____

Tokens you would like to send to the charity: _____