# Pro-social motivation, effort and the call to public service

Sheheryar Banuri & Philip Keefer[[1]](#footnote-2)

s.banuri@uea.ac.uk

pkeefer@iadb.org

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**Abstract:**  We investigate the interaction of pro-social motivation and wages in pro-social organizations with a novel subject pool, 1700 students destined for the private and public sectors in Indonesia, using a measure of pro-social motivation that exactly matches the mission of the organization. Three novel conclusions emerge. Consistent with a common, but untested, assumption in the theoretical literature, workers with greater pro-social motivation exert higher *real* effort. However, high pay attracts *less* pro-socially motivated individuals. Furthermore, we also test whether a real world pro-social organization (the Indonesian Ministry of Finance) attracts pro-socially motivated workers. We find that prospective entrants into the Indonesian Ministry of Finance exhibit *higher* levels of pro-social motivation than a comparable sample of general workers.

 **JEL Codes**: C91; H83; J45

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**Sector Board**: Public Sector Governance (PSM)

**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. However, individuals can also derive utility from the contribution they make to the mission of the organization. This increases motivation to work to the extent that an organization’s mission matches the preferences of the worker.[[2]](#footnote-3) For pro-social organizations, such as those in the public sector, attracting pro-socially motivated workers may therefore be of critical importance.[[3]](#footnote-4)

In this paper, we ask three questions with respect to pro-social motivation, effort, and public service. First, do pro-socially motivated workers exert more effort in pro-socially motivated tasks? Second, does increasing pay reduce the likelihood of recruiting pro-socially motivated workers? If so, we would expect that in public sector organizations with lower pay, workers should exhibit greater pro-social motivation. The third question, therefore, asks whether public workers are more pro-socially motivated than non-public workers.

Using novel evidence from lab experiments with approximately 1,700 subjects from the government and private sectors in Indonesia, we find that pro-socially motivated individuals exert greater effort in pro-social tasks in the absence of extrinsic rewards; raising wages attracts unmotivated individuals into organizations with a pro-social mission; and “real world” public sector employees are more pro-socially motivated than a closely matched sample of general workers.

“Mission-matching” and the idea that government employees exert effort because they are pro-socially motivated have attracted substantial attention as an explanation for the effort exerted by government employees, despite weak monitoring and low-powered incentives.[[4]](#footnote-5) For example, Delfgaauw and Dur (2008) develop a model where workers differ on laziness and public service motivation. They show that when effort is unverifiable, lazy workers crowd out motivated workers as the public sector becomes highly attractive. When effort is observable, however, the public sector prefers to hire dedicated workers alone (if production is sufficiently small) so as to maximize motivational rents from the workers. Prendergast (2007) argues that pro-social preferences of government officials can lead to excessive generosity towards the beneficiaries of government programs, a prediction that underlines the need for evidence about whether government officials are, indeed, more pro-socially motivated. Evidence is sparse and mixed, however, showing either that government employees are indeed more pro-social, or that individuals with higher pro-social motivation will work harder on tasks that benefit society.

We make four contributions to the study of pro-social motivation and effort. First, previous research has confronted the difficulty of matching measures of pro-social motivation to the mission of the organization. Our experimental design allows us to precisely match a measure of motivation to organizational mission: We use a behavioral measure of pro-social motivation, the amount that subjects donate to the Indonesian Red Cross in a variation of the dictator game.[[5]](#footnote-6) Subjects then perform a real effort task with a mission that exactly matches this measure of motivation: greater effort in the 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 pro-social motivation and pro-social effort empirically. Those who exhibit greater pro-social motivation (by making larger donations to the IRC) work harder on a real-effort task that serves the pro-social mission. In fact, we find that effort levels of pro-socially motivated subjects approach effort levels generated by high powered piece rate contracts.

This is not the first analysis to examine the effects of pro-social motivation on effort – in the final section of the paper, we review a growing literature focused on this question (e.g., Carpenter and Gong 2014). In contrast to earlier work, we examine subjects who more closely resemble typical central government workers and whose efforts benefit a population that mimics the beneficiaries of central government ministries. Prior research compares the efforts of more and less motivated workers. However, it is possible that workers who exhibit more pro-social motivation are also more task-motivated. In our experiment, task motivation cannot account for the results we observe, since we compare the effort of more and less pro-socially motivated subjects after controlling for their efforts in the same task when a pro-social mission is absent. Finally, in some prior work, the experimental context heightens the effect of pro-social motivation by identifying beneficiaries whose welfare some subjects actually prefer to reduce (e.g., candidates from the other political party, as in Carpenter and Gong). We find significant effects of pro-social motivation even in a more neutral context in which, at worst, subject welfare is at unaffected by beneficiary welfare, and never negatively affected by it.

Our third contribution is to a nascent literature that examines the effects of organization mission on occupational choice. Subjects choose between two organizations with different missions. In one, a “private organization”, greater effort yields larger payoffs for the subject. In the other “public organization”, greater effort yields larger payoffs for the Indonesian Red Cross and subjects earn a flat wage, independent of their effort.[[6]](#footnote-7) In contrast to previous research, and for reasons that we explain below, we find that *less* pro-socially motivated subjects are more likely to choose the public organization when wages are high, relative to when wages are low. Our results and approach diverge from prior research in this area (e.g., Dal Bó, Finan and Rossi 2013) and illuminates key factors that might condition the relationship between pro-social motivation and pecuniary compensation, including whether ability is correlated with pro-social motivation and the precision with which motivation and reservation wage are measured. Our fourth contribution is to demonstrate the importance of mission-matching in organizational choice, by precisely measuring the pro-social preferences of subjects who have selected into the public sector in the real world.[[7]](#footnote-8) We compare the pro-social preferences 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 thus constitute a pool of “general” workers. Numerous prior efforts to investigate this issue, discussed in the final section of the paper, have yielded ambiguous findings about mission-matching. We build on this earlier work in two ways: with a behavioral measure of pro-social motivation that is directly related to the work of government officials; and by comparing a pool of non-public sector subjects with a reasonably well-matched pool of public sector subjects.

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 preferences. The analysis here indicates that even when this match is not particularly close, significant differences in pro-social motivation 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 mission;[[8]](#footnote-9) 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.[[9]](#footnote-10)

In addition, the comparison of the pro-social motivation of public sector and general workers addresses a central question in the literature concerning the mechanism through which public employees exert effort. In particular, are public employees more pro-socially motivated because pro-social individuals select into the public sector, or because service in the public sector reinforces pro-social behavior? Our novel subject pool allows us to isolate the effect of selection.

The next section describes our experimental design, which we use to address three questions about the interaction of pro-social motivation and ability, selection into pro-social organizations, and the wage level of those organizations. The next three sections then present and discuss the results for each of these questions, nesting the findings in a substantial body of research on these questions.

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## Experimental Design

The experiments and measurements described in this section address three questions. First, do more pro-socially motivated employees exert more effort in an organization with a pro-social mission? Second, do high wages in the pro-social organization induce unmotivated individuals to join the organization? And, third, are the individuals who select into non-caring, central government positions more pro-socially motivated than a pool of general workers? All require an accurate measure of pro-social motivation with respect to pro-social missions.[[10]](#footnote-11)

Our aim is to capture pro-social motivation that is most relevant to employees in a pro-social organization that serves a large group of anonymous individuals, spread across the entire country, with no other (e.g., religious) mission. 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.

To measure pro-social motivation, we asked subjects to play a modified version of the standard dictator “game”. Normally, two players each receive 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 percent 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.[[11]](#footnote-12) 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. Annual income per capita in Indonesia is approximately $3,000; the dictator endowment is approximately 20 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.

Since a key issue is the degree to which pro-social motivation affects real effort, to measure effort we utilize the “slider task” adapted from Gill and Prowse (2012). 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. The use of this computerized version of the “envelope-folding effort task” to simulate effort costs is increasingly common in the literature (Breuer, 2012; Georganas, Tonin, and Vlassopoulos, 2013; Ibañez and Schaffland, 2013; among others).

While the task is simple, subject performance could still exhibit heterogeneous learning effects that would inject noise into our estimates. To minimize learning noise, 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.[[12]](#footnote-13)

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 “Effort-for-Charity” round),[[13]](#footnote-14) 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. 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.[[14]](#footnote-15)

When subjects completed the effort-for-charity round, they were told that they would engage in four tasks for 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 was done to reinforce independence across the four tasks.

The first task faced by the subjects constitutes our best measure of their ability. The “pay-for-effort task” asked subjects to complete the slider task under a piece rate pay scheme designed to mimic a private, for-profit organization. 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 pay-for-effort task was completed, all subjects engaged in a task with a pro-social mission (public organization), referred to as “pro-social task”. This task embodies two features found in real pro-social organizations, particularly in the public sector, in two ways. First, salaries in pro-social organizations are generally divorced from effort and are “compressed” – those of different abilities receive similar pay. Hence, in the experiment, all subjects receive a flat salary when they participate in the pro-social task. Second, although workers’ effort in pro-social organizations may yield no private benefits for them, it does benefit society. Consequently, for each slider the subjects completed in the pro-social task, the Indonesian Red Cross received 100 tokens. Figure 1 displays the overall order of the tasks. We conducted multiple treatments between subjects that varied the compensation rules governing the pro-social task. The order of the tasks always followed the same structure, however.

Figure 1 shows that, 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, 2008). 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.

## Figure 1: Structure of the Experiment



The charity used in the pro-social task ensures that the mission corresponds exactly to the measure of pro-social motivation. This allows for a precise identification of the effects of wages on the pro-social motivation of entrants into pro-social organizations. Once the pay-for-effort (private) and pro-social (public) tasks were complete, subjects were then asked to choose between the private and public organizations for their next task. They then undertook three further rounds of the task that they chose. The organizational choice task allows us to isolate the effects of the wages in the pro-social organization on the pro-social motivation of workers who choose employment in the pro-social organization.[[15]](#footnote-16)

In sum, our subjects engaged in seven incentivized tasks in any given session. Of these seven, the first two were always compensated (the dictator game and effort for charity task). One of the next four tasks (including the pay-for-effort task, the pro-social task, and the two organizational choice tasks) was then randomly selected for payment. This was done so as to induce independence across the tasks and to protect against any portfolio effects (payment details are given below). The seventh and final task (risk measure – used mainly as a control in this paper) was also always compensated.

To reiterate, donations to the charity in the dictator game serve as our measure of pro-social motivation (and our main dependent variable for our third result). The effort-for-charity task[[16]](#footnote-17) constitutes our measure of uncompensated effort on behalf of the charity. The pay-for-effort task[[17]](#footnote-18) constitutes our measure of ability and introduces subjects to the first type of contract available to them in the organizational choice task (Task 3). Thus, the ratio of effort in the effort-for-charity task to the pay-for-effort task is our “ability-adjusted” measure of effort on behalf of the charity (and our main dependent variable for our first result). The pro-social task[[18]](#footnote-19) constitutes our measure of compensated effort on behalf of the charity, and also serves to introduce subjects to the second type of contract available to them in the organizational choice task (Task 3). Finally, the organizational choice task[[19]](#footnote-20) asks subjects to select one from two types of contracts, and is the main dependent variable for our second result. We use the risk measure and responses to the survey as controls throughout the analysis.

One final issue in experimental design that is relevant for the estimations below is the degree to which standard errors might be clustered, either by age and major (cohort effects) or by institution. To the extent that they are, we should report clustered standard errors to mitigate downward bias in estimated standard errors. However, if the errors are homoscedastic, then clustering actually *increases* bias. In fact, the nature of our sign-up procedures (individuals had several ways to sign up, and no recruitment or sign-ups were conducted “group-wise”) and our experimental design (subjects moved at their own pace through randomly-assigned tasks with no communication among them) indicate that standard errors are likely to be independent within these clusters.

Moreover, and consistent with the experimental design, we observe minimal intra-cluster correlation. For the ability-adjusted effort variable (reported in table 1), intraclass correlation is 0.0028. For the amount sent in the dictator game variable (reported in table 3), the intraclass correlation is 0.0000, and finally for the contract choice variable (reported in table 2) it is 0.0259. The 95 percent confidence interval for all three includes zero.[[20]](#footnote-21) We therefore do not use clustered standard errors in the analysis below. However, essentially all the results are robust to clustering by cohort (age-major-institution) or by experimental session.

### Distinguishing Motivation and Ability

Subjects are likely to differ in their ability to do the slider task, or any other real effort task, whether in the laboratory or in a randomized control trial. Their heterogeneous ability is an important obstacle to using between-subject comparisons in order to make judgments about the contribution of differences in pro-social motivation to observed effort, since effort is the product of both ability and motivation. The two are inherently difficult to disentangle. For example, although IQ is meant to be a “pure” measure of ability, Duckworth et al. (2011) find that test motivation has a significant effect on IQ scores. Similarly, Borghans et al. (2013) also identify effects of both intrinsic and extrinsic incentives on IQ test performance. 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.

Unlike prior efforts to examine the effects of motivation on effort, we have a precise control for ability, the effort exerted by subjects in the pay-for-effort task. This is the least noisy measure of subject ability since, as in Prior and Lupia (2008), the pay-for-effort task gives participants an incentive to do their best.

It is possible that subjects may be differently motivated by high-powered incentives. High scores in the pay-for-effort task may, as a consequence, not reflect greater ability, but greater motivation to work hard under piece rate compensation schemes. A simple model clarifies why, despite this ambiguity, our measure of ability is likely to be more reliable than a non-incentivized measure.

Once the first two tasks in the experiment are completed, subjects can choose to work in a pay-for-effort (private) organization or a pro-social (public) organization. Income in the pay-for-effort organization is the product of their effort and ability times the wage (piece rate), $w\_{piece}a\_{i}e\_{i}$; ability $a\_{i}\in \left(0,1\right)$ determines the fraction of effort $e\_{i}$ that is transformed into output. In pro-social organizations, workers earn a flat wage, unrelated to effort and ability, given by $w\_{soc}$. The pro-social motivation of workers is given by $θ\_{i}$, $θ\_{i}\geq 0$. Pro-socially motivated workers (those with $θ\_{i}>0$) 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. Their utility therefore increases with effort according to $λa\_{i}e\_{i}θ\_{i}$, where $λ\in \left[1,\frac{1}{a\_{i}}\right]$; $λ=1$ implies that workers care only about the actual contributions that their effort makes to the mission and$ λ=\frac{1}{a\_{i}}$ implies that workers value their efforts on behalf of the mission 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 effort, extrinsic motivation, and pro-social motivation enter utility separably, the utility of workers who choose to work in the piece-rate or pro-social organizations can be described by:

(1) Private organization: $u\_{i}=w\_{piece}a\_{i}e\_{i}-\frac{1}{2}e^{2}$

(2) Public organization: $u\_{i}=w\_{soc}+λa\_{i}e\_{i}θ\_{i}-\frac{1}{2}e^{2}$

Workers who select into the private organization choose effort to maximize $w\_{piece}a\_{i}e\_{i}-\frac{1}{2}e^{2}$, yielding $e\_{piece}=w\_{piece}a\_{i}$. In the public organization, they choose effort to maximize $w\_{soc}+λa\_{i}e\_{i}θ\_{i}-\frac{1}{2}e^{2}$, or $e\_{soc}=λa\_{i}θ\_{i}$.

From these expressions for effort, it follows immediately that if we use effort in the pay-for-effort task to correct for ability in the pro-social task, we get $\frac{e\_{soc}}{e\_{piece}}=\frac{λθ}{w\_{piece}}$. The ratio on the left-hand side constitutes an ability-adjusted measure of effort in the public organization, but as the right hand side makes clear, the measure is weighted by the wage rate in the private organization. Nevertheless, the expression also makes clear that there is less noise from using effort in the pay-for-effort task as an ability control is less problematic than from using alternative measures of ability.

In particular, the most common alternative measure of ability is to use effort in a task for which subjects receive neither intrinsic nor extrinsic rewards, such as the final practice round in our experiments. In this case, though, low scores do not necessarily reflect low ability, but rather disinterest in exerting effort on an unmotivated task. Indeed, as the piece-rate wage goes to zero, $\frac{e\_{soc}}{e\_{piece}}=\frac{λθ}{w\_{piece}}$ 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 the pay-for-effort task.

Using the incentivized ability measure does inject noise to the extent that subjects differ in their motivation to work under a piece rate. However, this is unlikely to bias the findings reported below. To see this, one can include an additional parameter (γ) to the utility function under the pay-for-effort task, such that $u\_{i}=γw\_{piece}a\_{i}e\_{i}-\frac{1}{2}e^{2}$: the higher is γ, the more motivated is the individual by piece rate compensation. Correcting effort in the pro-social organization with effort in the pay-for-effort organization then yields $\frac{e\_{soc}}{e\_{piece}}=\frac{λθ}{γw\_{piece}}$. If the pro-social and piece rate motivation are negatively correlated, then the ability-adjusted measure will be larger for those with low piece-rate motivation (γ). This would yield a spurious correlation between ability-adjusted effort in the pro-social task and pro-social motivation. Since the piece rate is never varied in our experiments, we cannot estimate γ and are therefore unable to determine the extent of correlation between γ and θ. However, there is no evidence in the literature suggesting that they are negatively correlated. Moreover, the key conclusion remains that an ability measure based on uncompensated effort (piece rate wage of zero) is uninterpretable.

### Recruitment, Task Assignment and Payment Procedures

Students received 25,000 IDR as their show-up fee. Average earnings from the experiment were around 120,000 IDR. 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. Experimental sessions were conducted in March 2012 and March/April 2013 and took about 2 weeks, on each occasion and in each institution, to complete, with a total of 1,723 subjects.[[21]](#footnote-22)

Subjects at each institution were recruited using a combination of flyers and email announcements by the administration. These emphasized the fact that the students would play games, have the opportunity to earn money, and would earn money simply for showing up. They did not reveal the nature or purpose of the experiments. At the University of Indonesia, the faculty of Economics sent the notice to their students and to students in Accounting and Management. At the State College of Accountancy, announcements were posted on the college website and students were encouraged to sign up for pre-specified sessions. No effort was made to limit participation at the State College of Accountancy. However, at the University of Indonesia, participants were limited to the three majors (Economics, Accounting, and Management). Furthermore, student assistants were hired to assist in the conduct of the experiments. They aided recruitment efforts by posting reminders on Facebook and Twitter groups for their organizations.

All earnings were expressed in tokens, with an exchange rate of 8.33 IDR per token.[[22]](#footnote-23) 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. 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

This section reviews, in turn, the findings that pro-socially motivated individuals exert more effort on pro-social tasks; unmotivated individuals are more likely to select into mission-oriented jobs when wages are high relative to when wages are low; and, in Indonesia, individuals who have selected into public sector employment (students at STAN) are more pro-socially motivated than individuals who have not (students at UI). Each of these findings bears on a substantial literature; these implications are addressed in the final, discussion section.

### Motivation and effort

Although the literature has assumed that pro-social motivation translates into greater effort when individuals work in organizations with pro-social missions, this assumption has received little empirical attention (Carpenter and Gong, 2014 and Ashraf, Bandiera, and Jack, 2014 are notable exceptions and are further discussed below). Since we know how much subjects donated to the International Red Cross in the dictator game, we can infer how closely their pro-social mission preferences match those of the Indonesian Red Cross. Consequently, we can exactly determine whether, in fact, a closer match of mission preferences and organization mission indeed increases effort.

We ran a large number of different pay treatments for the pro-social task (see figure 1) with both STAN and UI students in March 2012 and March 2013. Though exposed to different pay schemes for pro-social tasks, all subjects were asked to participate in identical versions of the dictator game, practice rounds, effort-for-charity round, and the pay-for-effort task. Hence, we can report the effects of pro-social motivation on effort for more than 1,700 subjects.[[23]](#footnote-24)

Subjects’ pro-social motivation is defined as the amount donated to the Indonesia Red Cross in the dictator game, from a total endowment of 2,000 tokens (16,660 IDR ≈ $1.75). Subjects’ effort on behalf of the Indonesian Red Cross is given by their performance in the effort-for-charity round, in which they were told that every slider they completed would yield 100 tokens for the IRC (833 IDR ≈ $0.09). Subjects themselves received no compensation in this round. To reiterate, we account for ability differences among subjects by dividing their effort in the effort-for-charity round by their effort in the pay-for-effort task (the piece rate in this task was also 100 tokens: 833 IDR ≈ $0.09 per slider).[[24]](#footnote-25)

**Figure 2: The Relationship between Pro-social Motivation and Effort**



Note: Bars indicate 95 percent confidence intervals. For example, those who gave 1501-2000 tokens exerted significantly more effort than those who gave 1000 or fewer tokens.

Figure 2 summarizes the strong relationship between ability-adjusted effort and pro-social motivation (dictator): effort on behalf of the Indonesian Red Cross rises systematically and significantly with donations to the IRC. The relationship between pro-social motivation and effort can also been seen in estimates of the following OLS regression,

$EFFORT\_{i}=α+βMOTIVATION\_{i}+δCONTROLS\_{i}+ε\_{i}$ -- (1)

where the dependent variable is ability-adjusted effort, the ratio of effort in the effort-for-charity round to effort in the pay-for-effort task. *MOTIVATION* is the amount that subjects give to the International Red Cross in the dictator game.[[25]](#footnote-26) The *CONTROLS* consist of gender and age, which are often related to pro-social behavior.[[26]](#footnote-27) We include a dummy for location (STAN equals one, UI equals zero) to see if effort differs significantly across public and non-public sector subjects. In addition to this, we also control for income effects (by controlling for current financial health and family income), risk preferences, religiosity, and area of study. We also control for subject confidence in our assurances that the charity will be paid in accordance with the instructions.[[27]](#footnote-28) Finally, as discussed earlier, 240 subjects faced slightly different versions of either the charity round or private sector task. We use dummy variables to control for any effect of these changes, but results are robust to excluding these observations entirely.

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 dictator game also work harder on behalf of the Indonesian Red Cross, relative to their effort under the piece rate regime. Using a log-linear specification (not reported), we find that for every 100 tokens donated to the Indonesian Red Cross in the dictator game, effort for the Indonesian Red Cross increases by 0.22% (relative to effort exerted in the pay-for-effort task). The second column adds all other controls, with practically no effect on the coefficient of *MOTIVATION*. Finally, the third column adds controls for the different versions of the charity round and ability measure. Again, the estimate of *MOTIVATION* is robust to the additional controls.

## Table 1: Pro-social motivation and effort(*See Appendix Table A.1 for complete results*)

|  |  |  |  |
| --- | --- | --- | --- |
| Dependent Variable: | Ability-adjusted Effort | Ability-adjusted Effort | Ability-adjusted Effort |
|   | I | II | III |
| Pro-social Motivation | 0.019\*\*\* | 0.017\*\* | 0.018\*\* |
|  (Dictator Amount Sent)  | (0.01) | (0.01) | (0.01) |
| Belief that Charity was Paid |  | 0.003 | 0.003 |
|  (5 = Complete Confidence) |   | (0.00) | (0.00) |
| Constant | 0.945\*\*\* | 0.954\*\*\* | 0.955\*\*\* |
|   | (0.01) | (0.07) | (0.07) |
| R-squared | 0.004 | 0.009 | 0.009 |
| P-Value | 0.006 | 0.216 | 0.339 |
| Observations | 1720 | 1720 | 1720 |
| Demographic and Preference Controls |  No  | Yes | Yes |
| Income Controls | No | Yes | Yes |
| Institution and Area of Study Controls | No | Yes | Yes |
| Treatment Controls | No | No | Yes |

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, and to clustering on academic cohorts.

The findings in Table 1 provide direct, behavioral evidence that pro-socially motivated employees do, in fact, provide more effort. Subjects with median pro-social motivation exert 0.25 sliders of additional effort on average; the most motivated subjects exert 1.38 additional sliders of effort compared to the least motivated. This is a large gain, accounting for 85 percent of the increase in effort when these same subjects (the most and least motivated) go from the uncompensated and unincentivized effort in the practice round to extrinsically compensated effort in the piece rate round. Figure 3 displays these gains.

A key feature of these results bears emphasis. The correlation between pro-social motivation and pro-social effort that we find uses a measure of **relative** effort: effort in the pro-social task relative to effort in a task with only private benefits. The results not only indicate that an exact measure of mission orientation is, as intuition might suggest, correlated with an exact measure of effort towards that mission, but that pro-socially motivated subjects’ effort levels approach those generated by high powered extrinsic incentive contracts.

**Figure 3: Effort exerted in practice, charity, and piece rate rounds**

Note: The figure details the effort by the most and least motivated subjects in the uncompensated Effort in Practice; in the Effort for Charity task, which benefited only the charity; and the Effort in Piece Rate task, which benefited only the subject. The difference between the two groups in the Effort for Charity task (1.38 sliders) is 85 percent of the difference between average effort by both groups in practice and average effort by both groups in the piece rate task.

Two possible interactions between the dictator game and the effort-for-charity task might be a cause for concern. One is that subjects may see donations in the dictator game as substitutes for effort in the effort-for-charity game (a portfolio effect). Therefore, they may be less likely to exert effort when they donate more. This bias runs against our findings, and despite this, we still find a strong relationship between direct donations and effort.[[28]](#footnote-29)

Another interaction arises if there are order effects or consistency bias which operate in the opposite direction and therefore could give rise to a spurious correlation between donations and effort. Order effects come about if the result is driven by the ordering of the task, and consistency bias arises if subjects value consistency in their choices (e.g., if higher donations, then greater effort).[[29]](#footnote-30)

These biases would generate a correlation between the effort costs perceived by the subject and the monetary cost that the subject already incurred: subjects who give more (perceive a lower monetary cost of giving) would also perceive a lower cost of effort. These biases are unlikely to emerge in this setting, however. Effort costs are stickier – less likely to be shifted by order effects and consistency bias – than monetary costs. In addition, the effort-for-charity task was separated from the dictator game by four rounds – ten minutes – of tedious practice moving the sliders, further suppressing any latent consistency bias. The results presented are robust to controlling for effort in these practice rounds (not shown).[[30]](#footnote-31)

In sum, we find linkages between pro-social motivation and effort: subjects that donate more to the Indonesian Red Cross are also more likely to exert greater effort on behalf of the organization. In the discussion section, we detail out the contribution of our findings to the literature, and how these results are different from previous findings.

### Motivation and wages

The second question we address is whether less pro-socially motivated individuals are more likely to join pro-social organizations when wages are high. The simple model introduced earlier yields prediction on the effects of raising wages on the recruitment of motivated and able workers. We derive the first order equations from maximizing utilities (1) and (2) with respect to effort. Setting the expressions equal to each other gives:

(3) $w\_{piece}a\_{i}e\_{piece}-\frac{1}{2}e\_{piece}^{2}=w\_{soc}+λa\_{i}e\_{soc}θ\_{i}-\frac{1}{2}e\_{soc}^{2}$.

Substituting the expressions for optimal effort into (3) allows us to rewrite (3) in terms of parameters: $\left(w\_{piece}a\_{i}\right)^{2}-\frac{1}{2}\left(w\_{piece}a\_{i}\right)^{2}=w\_{soc}+\left(λa\_{i}θ\_{i}\right)^{2}-\frac{1}{2}\left(λa\_{i}θ\_{i}\right)^{2}$.

We are interested in establishing how changes in the salary paid by the pro-social organization affect the ability and motivation of workers who decide to join the pro-social organization. We therefore ask what pro-social wage leaves workers with ability and pro-social motivation $a\_{i}$ and $θ\_{i}$ just indifferent between the two organizations, which is given by

(4) $ \overbar{w}\_{soc}=\frac{1}{2}\left(w\_{piece}a\_{i}\right)^{2}-\frac{1}{2}\left(λa\_{i}θ\_{i}\right)^{2}$.

Totally differentiating (4) and holding ability constant, it follows immediately that the marginal worker who is just indifferent between the piece rate and pro-social tasks is less pro-social when the wage $\overbar{w}\_{soc}$ increases: $\left.\frac{∂θ\_{i}}{∂\overbar{w}\_{soc}}\right|\_{∂a\_{i}=0}=-\frac{1}{\left(λa\_{i}\right)^{2}θ\_{i}}<0$. An increase in the pro-social 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 larger is $θ\_{i}$). This is important in comparing our results in Indonesia with prior research in this area, an issue to which we return in the discussion section.

The model predicts that an increase in the pro-social wage should attract higher ability entrants to the pro-social organization. Holding pro-social motivation constant, from the total differentiation of (4) we get: $\left.\frac{∂a\_{i}}{∂\overbar{w}\_{soc}}\right|\_{∂θ\_{i}=0}=\frac{1}{w\_{piece}^{2}a\_{i}-\left(λθ\_{i}\right)^{2}a\_{i}}>0$. However, underlining the importance of precise measurement of the reservation wage, this effect is attenuated when the reservation wage is high. In our experiments, nearly all subjects can earn more in the pay-for-effort task – their reservation wage is relatively high, attenuating the extent to which higher wages in the pro-social organization attracts workers of greater ability. Again, in the discussion section we highlight this effect in comparing our results to prior research.

To investigate these predictions, we randomly selected 187 subjects at the University of Indonesia to participate in a game in which they chose between the pay-for-effort task (private organization) and the pro-social task (public organization). The private organization paid a piece rate for effort, the public organization paid a flat salary, but effort in the public organization yielded donations to the charity. This choice is not foreign to individuals in the UI subject pool. UI subjects constitute a pool of “general workers” who have not chosen a career. Many express an interest in public sector employment and would be competitive candidates if they applied.

Using a between-subjects design, we compare subject behavior across two treatments, to which subjects were randomly assigned. In both, subjects had to choose between the private or public organization, but in one the salary in the public organization was high and in the other it was low. In treatment 1 (called “Low Salary”), subjects were informed that the public organization paid a (low) flat salary of 1,400 tokens per round for a total of three rounds (34,986 IDR ≈ $3.68). In treatment 2 (called “High Salary”), subjects were informed that the public organization paid a (high) flat salary of 2,200 tokens per round for a total of three rounds (54,978 IDR ≈ $5.79). Earnings from the private organization (reservation wage) were identical across treatments (100 tokens-833 IDR-$0.09- per slider in each round, for a total of three rounds).

Since we are primarily concerned with pro-social motivation in this paper, public salaries were relatively low. This ensured that pro-social motivation would play a large role in the decision to join the public organization. It also emulates the public-private wage discrepancy found in many developing countries. With one exception, all subjects in the Low Salary treatment were sufficiently capable of manipulating sliders that they could earn more in the private organization (pay-for-effort task). About 90 percent of subjects in the High Salary treatment could earn more in the private organization. Figure 4 displays the distribution of earnings of all subjects in the pay-for-effort task in the two treatments.

Since the reservation wage for the majority of the subjects was significantly higher than in both the low and high wage treatments, we expect the piece rate task to exert a significant pull on subjects. In fact, the low salary regime attracts significantly fewer workers than the high salary regime: 26 percent of all subjects joined the pro-social organization in the low salary treatment versus 39 percent in the high salary treatment (p<0.10).

**Figure 4: Earnings in the pay-for-effort task**



Note: The figure presents the distribution of tokens earned by subjects in the pay-for-effort task in the Low and High salary treatments combined (N=187). The two reference lines denote the salary levels of the pro-social organization in the Low salary treatment (dashed black line) and the High salary treatment (solid black line).

The following probit specification is used to estimate how pro-social motivation (measured by donations to the Indonesian Red Cross in the dictator game) and *task-relevant* ability (measured by the number of sliders completed in the earlier pay-for-effort task) affect the decision to enter the pro-social organization:

$PUBLIC ORGANIZATION\_{i}=α+βMOTIVATION\_{i}+γABILITY\_{i}+δCONTROLS\_{i}+ε\_{i}$-- (2)

Models 1 and 2 in Table 2 report the characteristics of subjects who choose the pro-social organization under the two different salary levels. The first row indicates that pro-socially motivated types are more likely to join the low salary pro-social organization, not the high salary. In the low salary treatment, subjects who send an additional 100 tokens to the Indonesian Red Cross are four percent more likely to choose the pro-social organization (p<0.01), but no more likely when the pro-social wage is high.[[31]](#footnote-32)

Under both wage regimes, high ability workers are less likely to join the pro-social organization. This reflects the earnings gap for high ability workers between the two organizations. We find a marginal effect in the low wage treatment (p=0.102) and a significant effect in the high wage public organization (p<0.01): for every slider that subjects successfully manipulated in the pay-for-effort task (i.e. the higher their reservation wage), they were 1.3 percent *less* likely to join the high wage pro-social organization.

## Table 2: Pro-social motivation and entry into the public organization under low and high salary regimes(*See Appendix Table A.2 for complete results*)

|  |
| --- |
| Dependent Variable: Sector Choice (1 = Join Public Organization) |
| Subjects | Private (University of Indonesia) |
| Treatment | Low Salary | High Salary | Pooled |
|   | I | II | III |
| Pro-social Motivation | 0.393\*\*\* | 0.050 | 0.324\*\*\* |
|  (Amount Sent in Dictator Game)  | (1.01) | (0.12) | (0.11) |
| Ability | -0.007 | -0.013\*\*\* | -0.007 |
|  (Effort Exerted in Piece Rate) | (0.004) | (0.00) | (0.00) |
| Treatment (High salary = 1) |   |   | 0.636\* |
|   |  |  | (0.34) |
| Treatment X Motivation |  |  | -0.307\*\* |
|   |  |  | (0.15) |
| Treatment X Ability |  |  | -0.005 |
|   |   |   | (0.01) |
| Constant | 0.176 | 0.365 | 0.297 |
| Pseudo R-squared | 0.295 | 0.143 | 0.155 |
| P-value | 0.003 | 0.110 | 0.002 |
| Observations | 92 | 95 | 187 |
| Demographic and Preference Controls | Yes | Yes | Yes |
| Income Controls | Yes | Yes | Yes |
| Area of Study Controls | Yes | Yes | Yes |

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. Demographic and preference controls include controls for gender, age, risk preferences, and religiosity. Income controls include controls for state of personal finances, and family income. Area of study controls include dummy variables for whether the subject was an Economics, Accounting, or Tax major. Additional controls include beliefs about whether the subjects trust that the donations were made according to the instructions, and a variable capturing subjects private information about the charity.

Models 1 and 2 do not identify whether the selection effects of the two pay treatments are significantly different from each other. In model 3, therefore, we pool the treatments and test whether motivated and able subjects are significantly more likely to join the pro-social organization under the high versus the low wage treatments. We do this by estimating the coefficients that interact the treatment variable (High Salary) with the ability and pro-social motivation measures. The magnitude of the salary – dictator interaction is large, negative, and significant, meaning that either less motivated subjects are more likely to join, as our model predicts; or more motivated subjects are less likely to join, because high incentives crowd out motivation.

The data favor the first interpretation. To test between these two hypotheses, we split the sample into motivated subjects and unmotivated subjects, according to whether subjects more than the average, or equal to or less than the average amounts in the dictator game. We then compare the proportion of motivated subjects who chose to join the public organization under the low wage treatment with the proportion of motivated subjects who chose to join under the high wage treatment. If there were motivation crowding out, the proportion of motivated subjects who joined would be lower under the high wage treatment. In fact, we find no significant differences in the proportions: in the low wage treatment, 46% of motivated subjects (11 of 24) chose to join the public organization; while in the high wage treatment, 44% of motivated subjects (16 of 36) did the same. These proportions are statistically indistinguishable: a two-tailed test of proportions yields a p-value of 0.92.

In contrast, the unmotivated group is much more susceptible to extrinsic incentives. In the low wage treatment, 19 percent of the unmotivated subjects (13 of 68) chose to join the public organization; while in the high wage treatment, 36% of subjects (21 of 59) did the same. This difference in proportion is significant (two-tailed proportion test: p<0.05).[[32]](#footnote-33) Thus, *less* pro-socially motivated subjects are significantly more likely (31 percent on average) to choose the pro-social sector in a high wage setting than in a low wage setting.

These results reinforce our conclusion, predicted by the model, that lower average motivation in the high-pay public sector is driven by its attractiveness to low motivation workers, not to the crowding out of high-motivation workers. The additional workers attracted by the high wage regime are relatively unmotivated. In contrast, the interactions of ability and wage regime are not significant: high ability individuals are not significantly more likely to choose the pro-social organization in the high wage setting than the low wage setting.

The effect of high pay on the entry of motivated workers can also be asked with respect to worker effort. If less pro-social individuals are more likely to join the high wage public organization, does this reduce effort in the high relative to the low pay organization? To see whether this is the case, we conducted a similar exercise as above, splitting the sample into motivated and unmotivated workers by average donation in the dictator game. We then conduct t-tests of ability-adjusted effort within these two groups, between the low and high wage treatments. If there were crowding out in terms of effort, we would expect groups to exert less effort in the high wage public organization. In fact, we find no significant differences in the ability-adjusted effort levels of either the motivated (p=0.81) or unmotivated (p=0.81) groups.[[33]](#footnote-34)

More generally, average effort levels do not differ between the two pay systems. Motivation is significantly higher in the low wage treatment and ability somewhat lower in the high wage treatment. This suggests that average effort should be lower in the high wage treatment. Average effort levels are correspondingly lower, by about 0.17 standard deviations. However, the difference is not significantly different.

Risk preferences do not play a role in the choice to work in the public or private organization (p>0.98). This is not surprising, since by construction, subjects are perfectly able to calibrate their effort levels (and hence their earnings) from the private organization, precisely because they engaged in an identical version of the private organization during the pay-for-effort task. In fact, at the time that they make the choice between organizations, they are provided with information on their performance so as to accurately calibrate the tradeoffs between the two.

This analysis points to three conclusions that account for the findings in Table 2 regarding the attractiveness of the public sector to able, motivated workers and high and low wage regimes. First, higher wages in pro-social organizations attract more workers. Second, as long as reservation wages are still higher overall, higher wages do not attract higher ability workers. A topic for future research is whether a substantial increase in the public sector wage relative to the reservation wage (which might be unlikely in practice) would attract high ability workers. However, third, the additional workers in the applicant pool in the high wage regime are likely to be less pro-socially motivated, on average, than under the low wage regime. Thus, raising wages reduces the overall pro-social motivation of the applicant pool, though we find little evidence of motivation crowding out. To the extent that pro-social motivation is difficult to observe, raising wages therefore lowers the average quality of the applicant pool.

These findings point to different effects of wage levels on motivation than those that are the focus of the literature. Previous research has predicted that higher pecuniary compensation might reduce the effort of all workers (e,g., Gneezy et al. 2011), or that it might discourage the entry of motivated individuals into the organization. We find, instead, that average effort levels are not significantly different across high and low wage settings, and that higher wages do not crowd out more motivated workers so much as they “crowd in” less motivated workers.

### Motivation in the public and private sectors

The results above indicate that, in the lab, pro-socially motivated workers exert more effort in pro-social tasks, and increasing wages lowers the average pro-social motivation of the applicant pool. This suggests that employees in low wage public organizations should be more pro-social than average workers. In fact, column 3 in Table 2 indicates that, on average, those who choose to work in the public organization are significantly more pro-socially motivated than those who do not. It is not obvious, however, that public workers are more pro-socially motivated in the real world (indeed, there is some evidence to the contrary).

The pro-social motivation of real public sector workers is contingent on numerous factors. Mission-matching is unlikely to be exact. On the one hand, workers’ pro-social motivation 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. In addition, 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 social welfare more so in some countries than in others.

The lab experiments avoid these ambiguities, since the pro-social motivation measures and the public organization mission are tightly controlled and the production function of the public organization fully translates subject effort into benefits for society. The question, then, is whether 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 particularly pro-social mission, also exhibit greater pro-social motivation than general workers.

Our subject pool allows us to compare the pro-social motivation of a pool of “general” workers (the University of Indonesia students) with those who have already committed to join, but have not yet worked in, the public sector, students attending Sekolah Tinggi Akuntansi Negara (STAN), the State College of Accountancy. Students at STAN join the college either directly after high school (for the Diploma I and Diploma III program: which are most of the students in our sample) or after a two year rotation in a government ministry (Diploma IV program). The Diploma I is a 1-year program focusing on three areas of specialization (customs; taxation; treasury) designed to create professionals with basic skills necessary for work in the public sector. The Diploma III is the more common program, with 3 years of study and six areas of specialization (accounting; administration; appraisal; customs; taxation; treasury). All courses taught have a public sector emphasis. The Diploma IV program is a two-year program leading to a Bachelor’s degree in Accounting, and is only available to individuals with work experience in the public sector.

Because neither group of students has actually worked in either the private or public sectors (our experiments excluded students in Diploma IV), we can attribute differences in pro-social motivation between STAN and UI subjects as arising from selection effects rather than socialization.[[34]](#footnote-35) This a key contribution of the comparison below: unlike most previous work, we can abstract from the potential effects of socialization on the pro-social motivation of individuals in the public and private sectors.

We do not argue that pro-sociality, by itself, “causes” entry into the public sector. On the contrary, sector choices are the product of all the differences between public and private sector employment, including mission, wages, job security, and the tuition benefits available to STAN students. Instead, we ask whether the equilibrium outcome of this process yields a systematic difference in pro-sociality between a large group of students who have chosen to pursue a high-flying public sector career and a large group of students who could have, but have not, chosen the same career. The comparison is meaningful precisely because the STAN students have made an ironclad decision to work in the public sector, but UI students, who could, have not.

Among the relevant factors that contribute to the equilibrium choices of students is the fact that the STAN students receive tuition-free education in a prestigious institution 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. The UI students are also plausible candidates for employment in the Ministry of Finance since entry into both institutions is highly competitive and both are prestigious, as students in both places affirmed.[[35]](#footnote-36) Admission to the Diploma III program is highly selective, with an acceptance rate of below 2%, similar to the University of Indonesia. Both subject groups are enrolled in technically similar programs, particularly in accounting. Though many UI students express interest in working in the public sector, none have actually committed to entering the public sector and a majority will, in fact, take positions in the private sector.

There are three possible reasons to be concerned about this result. First, it is possible that our UI subjects are not, in fact, representative of individuals who could have entered STAN, but chose not to, and vice versa. In this case, our results could be the result of unobserved characteristics of UI subjects who could *not* have entered STAN even if they had wanted to, or STAN subjects who could not have entered UI even if they had wanted to. Given the difficulty of entering both institutions, it is unlikely that those who are able to enter one, but are not qualified to enter the other, differ significantly – and, in particular, are significantly less pro-social – compared to those who could have entered both institutions. In addition, we know that at least some of our subjects, in both pools, passed both exams. Nevertheless, we cannot entirely exclude this source of bias, since it was not possible to pick a representative sample of students who could have entered both UI and STAN, and then compared the pro-sociality of those students after they selected one or the other.

Second, the labor market conditions associated with the Indonesian Ministry of Finance, including the STAN tuition program, may be sufficiently unique that our results do not translate easily to other public sector settings. However, particularly for the most selective government jobs, it is common for governments to authorize significant education benefits, bonuses and other benefits that are similar to those observed in STAN.

Third, the validity and relevance of our comparison between the two subject pools depend on whether the STAN graduates take positions in government that are both pro-social and give them the discretion to shirk: absent discretion, mission-matching is of little consequence. Upon graduating from the Diploma III program, students get assigned to either the Ministry of Finance (90 percent of graduates) or another ministry with a need for employees of the same skill-set, especially the ministry charged with auditing.[[36]](#footnote-37) Their jobs range from overseeing the spending decisions of other ministries to auditing spending efficacy to monitoring the fiscal stance of the country. While none of these jobs is “client-facing”, all have first-order effects on citizen welfare and all offer opportunities for discretion and shirking.

Table 3 shows that the two samples differ statistically on a number of dimensions. STAN subjects are about six months older and far less likely to be women.[[37]](#footnote-38) The public sector STAN students exhibit 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).[[38]](#footnote-39)

STAN subjects are slightly more religious, but again subjects in both groups tended to respond that they attended religious services once a week. STAN subjects are more trusting, but in both schools the mean response was close to four on a ten point scale. UI subjects are somewhat more likely to say that people are likely to take advantage of them, but the mean response of UI and STAN is again close to 5 on a ten point scale. The two subject pools were close to 3 (about average) when asked about their family income, though UI students were slightly more tilted towards “not good” (2) compared to “good” (3) when asked about the state of their personal finances.[[39]](#footnote-40) 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.

**Table 3: Sample differences between public and non-public 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).

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:

$MOTIVATION\_{i}=α+βLOCATION\_{i}+δCONTROLS\_{i}+ε\_{i}$ – (3)

Our focus is the coefficient, $β$, where $LOCATION\_{i}$ is a dummy variable equal to 1 if subject *i* is from STAN. The variable $MOTIVATION\_{i}$ is, as before, subject i's donation to the charity and $ε$ is the error term.

The results, presented in Table 4, show a significant difference between future 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. On average, they donate about 90 (16 percent) more tokens than non-public officials (controlling for subject specific characteristics). This is a large difference in the context of dictator games, in which ten percent differences in contribution rates are considered quite large.

The base specification, in Column I, is a bivariate regression with just the location dummy (STAN=1), and shows that public officials donate about 50 tokens more than their non-public official counterparts. Column II rules out numerous “spurious” reasons that might account for the association between subjects’ location (at STAN or UI) and their donations to the Indonesian Red Cross (see Appendix Table A.3 for complete results). Differences in the state of personal finances between the two groups do not drive donations; the base specification controls for the two measures of subjects’ personal finances and both are insignificant. Though women and older people behave differently in dictator games, the gender and age composition of the two subject pools does not account for the difference in their donations to the Indonesian Red Cross.[[40]](#footnote-41)

Controls for area of study (economics majors have been found to donate less in previous literature) and religiosity (how often subjects attend religious services) do not predict giving behavior, although most local charities in Indonesia operate through mosques. Risk preferences differ, so we control for subject responses to the Eckel-Grossman risk measure; these do predict donations, but do not account for the inter-school differences in giving. The two subsamples differ in the extent to which subjects believe the charity will actually be paid; subjects that believe it will be paid contribute significantly more, but again this does not account for inter-school differences in giving.

The second column adds subject *i*'s rating of the effectiveness of the charity, which controls for subjects’ private information regarding the charity. However, their ratings of charity effectiveness are likely to be heavily influenced by subjects’ overall pro-social preferences, 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 donate more 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 age, religiosity, personal finances, area of study, religiosity, and risk-taking.[[41]](#footnote-42)

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 127 tokens more than the private sector accounting majors, even controlling for their charity rating.

## Table 4: Are public sector workers more pro-social?(*See Appendix Table A.3 for complete results*)

|  |
| --- |
| Dependent Variable: Amount Sent to Charity in Dictator Game |
| Subjects | All | All | All | Accountants Only | University of Indonesia Only |
|   | I | II | III | IV | V |
| Location (D) | 49.17\* | 89.09\*\* | 89.24\*\* | 127.10\*\* | . |
|  (1 = STAN) | (26.15) | (39.18) | (38.70) | (58.31) | . |
| Charity Rating | . | . | 58.70\*\*\* | 49.41\*\*\* | 72.90\*\*\* |
|  (7 = Most effective) | . | . | (8.86) | (15.19) | (13.55) |
| Intent to Join Public Sector (D) | . | -47.24 | -59.05 | -86.01 | -44.58 |
|  (1 = Yes) | . | (38.03) | (37.60) | (67.60) | (38.68) |
| Gender (D) | . | 72.15\*\* | 78.18\*\*\* | 66.28 | 71.52\* |
|  (1 = Female) | . | (29.85) | (29.50) | (50.55) | (41.06) |
| Belief that Charity was Paid | . | 28.02\* | 14.52 | 0.15 | -11.72 |
|  (5 = Complete Confidence) | . | (16.29) | (16.22) | (28.57) | (23.80) |
| Constant | 569.37\*\*\* | 384.50 | 176.20 | 512.20 | 56.60 |
|   | (20.63) | (250.10) | (249.00) | (449.60) | (348.00) |
| R-squared | 0.002 | 0.015 | 0.039 | 0.048 | 0.060 |
| P-Value | 0.060 | 0.014 | 0.000 | 0.001 | 0.000 |
| Observations | 1723 | 1723 | 1723 | 596 | 650 |
| Demographic and Preference Controls | No | Yes | Yes | Yes | Yes |
| Income Controls | No | Yes | Yes | Yes | Yes |
| Area of Study Controls | No | Yes | Yes | Yes | Yes |

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). Demographic and preference controls include controls for gender, age, risk preferences, and religiosity. Income controls include controls for state of personal finances, and family income. Area of study controls include dummy variables for whether the subject was an Economics, Accounting, or Tax major. Additional controls include beliefs about whether the subjects trust that the donations were made according to the instructions, and a variable capturing subjects private information about the charity. Results are robust to clustering on academic cohorts.

A final issue surrounding these results is whether the effort and choices that subjects make regarding the Indonesian Red Cross reflect their effort and choices in the actual public institutions in which they might work. This is the case as long as subjects’ behavior towards the Indonesian Red Cross and its beneficiaries captures their attitudes towards the beneficiaries and functions of their own ministries. In fact, the tasks and beneficiaries of the Indonesian Red Cross do overlap with Indonesia’s public sector. Activities such as disaster relief are common to both, and the beneficiaries of both are all Indonesian citizens. This overlap is greatest for service ministries (like the National Agency for Disaster Management in Indonesia) or in ministries (like Finance) that backstop service ministries. It might be less in other ministries.

At the same time, the match between IRC beneficiaries and tasks and those of the Indonesian public sector matters only for the question of whether actual public sector employees are more pro-social than non-public sector employees, as measured by their contributions to the Indonesian Red Cross. The match is irrelevant for the tests regarding the effects of pro-social motivation on effort and the interaction of each with pecuniary compensation. In those results, the key issue is that the beneficiaries of subject giving in the dictator game match the beneficiaries of their effort in the slider tasks.

#### **Discussion and contribution to prior research**

In this paper, we report three main findings: (1) greater pro-social motivation yields higher effort in pro-social tasks; (2) *less* pro-socially motivated subjects are more likely to choose the public organization when wages are high, relative to when wages are low; and (3) workers that have selected into the public sector exhibit higher pro-social motivation than workers that have not. In this section, we take each result in turn and discuss its contributions to prior research.

Our first finding (on motivation and effort) extends past research that has also examined links between motivation and effort and clarifies ambiguities that emerge in it. For example, Carpenter and Gong (2014) record political party preferences of a group of U.S. university subjects. They randomly assign subjects to effort tasks that serve the mission of either their preferred party or that of the rival party. In this setting, mission mis-matching *reduces* the utility of subjects, since they are asked to exert effort on behalf of a political party that they oppose. Mission-oriented subjects exert more effort when matched to their preferred party. This result could be driven by the disutility of the mismatch rather than by the utility of the match, leaving open the question of whether mission-matching yields greater effort in a more typical and neutral public sector setting, where mis-matches do not reduce subject utility. Our comparison focuses on such a setting, where workers might be highly motivated or unmotivated to deliver benefits to society, but not actively opposed to delivering them.

In their study of volunteer firefighters in Vermont, Carpenter and Myers (2010) find mixed evidence of motivation on effort. They observe the decisions of volunteer firefighters and community members to select into fire service, and to turn out upon receiving a call. Altruistic individuals are more likely to select into the service, but not to turn out (which is motivated by image concerns). They also find that extrinsic rewards increase effort, but effort motivated by image concerns is crowded out. However, they observe the turnout decision only among those individuals who have signed up with the fire service. We find a strong relationship between pro-social motivation and effort among *all* subjects.[[42]](#footnote-43)

Tonin and Vlassopoulos (2010) conduct an experiment with university students, assessing the importance of mission in menial tasks. They find that females, but not males, exert more effort when effort yields charitable contributions. Their work does not address mission-matching directly, however, since they do not look at how variations in pro-social preferences across subjects affect their effort. We allow pro-social motivation to vary by pre-selecting the charity (which mimics a public organization), measuring differences in motivation towards the charity, and showing that those differences account for different levels of effort on behalf of the charity.[[43]](#footnote-44)

In a recent paper, Fehrler and Kosfeld (2014) find, in contrast to Carpenter and Gong (2014) and our first results above, that mission-matching has no effect. They find no difference in effort by subjects on behalf of an NGO selected by the subject relative to effort on behalf of a randomly selected student. However, there could be unobserved heterogeneity among subjects in their motivation to exert effort on behalf of chosen NGOs relative to strangers, making it more difficult to identify significant effects from mission-matching in this setting.[[44]](#footnote-45)

They also report results from a second experiment, this time giving subjects a choice between exerting effort on behalf of the NGO or the random student, but repeating the choice over 20 rounds, each time increasing the payoff from choosing the student. Here they do find evidence of mission-matching effects on effort. Subjects who exhibited a greater willingness to pay to work on behalf of the NGO, by foregoing the extra compensation associated with exerting effort on behalf of the random student, subsequently exert greater effort. However, as in Carpenter and Myers (2010), though with the opposite result, they reach this conclusion based on comparisons among those who decided to exert effort on behalf of the NGO, one-third of the subject pool. Our findings are based on the behavior of all subjects, before they select into the private or public organization.

Gerhards (2015) has an analysis related to that of Fehrler and Kosfeld. Using humanitarian workers and a within-subjects design, she varies the degree of mission-matching and the piece rate. Subjects respond to the mission-match by choosing higher levels of effort, but this increase in effort decreases with higher incentives. A replication with student subjects reinforces this finding. Unlike both of these studies, we use a real effort task (subjects must actually exert effort) rather than a chosen effort task (where subjects choose a number that represents the effort that they would exert). More importantly, we use a single charity as our basis for the mission, rather than asking subjects to work for two different possible missions. We can therefore unambiguously link heterogeneity in mission-matching to subject preferences over a single mission rather than to their relative preferences over two missions. This allows us to show that mission matching increases effort, but also that this effect is monotonic in the decision space: the greater the mission match, the higher the effort exerted.

Ashraf, Bandiera, and Jack (2014) conduct a field experiment on the impact of pecuniary and non-pecuniary incentives on HIV prevention. They invite hair stylists to sell female condoms at their salons in Zambia. They randomly assign these volunteers to a control group (no incentives), two pecuniary reward groups (small and large financial incentives), and a non-pecuniary reward group (status-based, tournament-style incentives). Status rewards have the largest impact on sales, and motivated workers (as measured by a dictator game) sell more condoms on average in the entire sample. However, among the members of their control group, motivation has no effect on sales.

The control group most closely matches the experimental conditions confronting our sample, since it received no pecuniary compensation for effort. The difference in results may be due to the high level of motivation found among volunteers in the field, which implies that motivation effects are difficult to identify, as we discuss in the context of our second set of results. This is not an issue in our lab setting: more motivated individuals have no reason to select into our experiments since they were unaware of the tasks they would perform and the beneficiaries of those tasks prior to signing up.

Our second finding (on the effects of wage levels on pro-social motivation) contributes to a substantial body of research, much of it theoretical. Ellingsen and Johannesson (2008) argue that pro-social individuals are more likely to act pro-socially when the mission of the organization to which they belong is pro-social and the organization chooses a compensation scheme that assumes that the employees will act pro-socially (see also Benabou and Tirole, 2006 and Andreoni and Bernheim, 2009). One prediction of this literature is that individual pro-social preferences should be higher in pro-social organizations that 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).

Dal Bó, Finan and Rossi (2013) report the results of a field experiment in Mexico that comes closest to our experimental analysis. 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. Employing 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 serving in the organization with a pro-social mission. However, in our experimental setting, unmotivated applicants are significantly more likely to choose this organization when wages are increased. In addition, raising wages has no impact on the ability of workers who choose the pro-social organization.

There are several possible explanations for the divergent findings. One, emerging from the model in Dal Bó, Finan and Rossi (2013), relates to the correlation of ability and motivation. When they are uncorrelated, as in the Indonesia sample, they predict that public sector wages and average motivation should be inversely related. When they are positively correlated, as among the Mexico subjects, this need no longer be the case. The second explanation is related, but concerns measurement. We can precisely measure subjects’ ability, preferences for the organization’s mission and reservation wage – subject earnings if they were to choose a non-mission or private organization instead of the mission or public organization. This reservation wage plays a key role in predictions about the effect of wages on the pro-social motivation and ability of individuals who choose the mission (pro-social) organization. For example, in our experiment, the reservation wage of subjects is almost always higher than the wage in the pro-social organization; as our model demonstrates, under these conditions pro-social motivation plays a correspondingly larger role in decisions to join the pro-social organization.

In field experiments, all three are difficult to measure. Proxies for ability, such as individuals’ IQ and salary history, are noisy measures of the reservation wage of individuals should they go to non-mission sectors.[[45]](#footnote-46) Moreover, both can be related to the public sector orientation of workers, yielding a positive correlation between ability and motivation. For example, salary history reflects past employment choices, which are influenced by both workers’ ability and their public sector orientation, making it difficult to use as a measure of their reservation wage in non-mission organizations.[[46]](#footnote-47) Our experimental design allows us to precisely and separately measure the ability, motivation and reservation wages of potential workers, eliminating noise that emerges from possible unobserved differences in the reservation wages of workers with high and low pro-social motivation.[[47]](#footnote-48) Less noisy measures allow for more powerful tests of the effect of higher wages on pro-social motivation of new applicants.

Our third finding concerns the pro-social motivation of public sector workers. Past research has not identified systematically greater pro-social motivation among workers in mission organizations. Respondents to the World Values Survey classify themselves as public, private or NGO sector employees. Using these data, Dur and Zoutenbier (2013) 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.[[48]](#footnote-49) Our analysis extends these findings with a behavioral measure of pro-social motivation that is directly related to the work of government officials, a well-defined population of public sector subjects, and with evidence on the actual sector choices of individuals.

Buurman, et al. (2012) examine data from a large survey of Dutch workers. Respondents were compensated for participating in the survey and could choose the type of compensation they would receive: a gift certificate, a lottery ticket, or a charitable donation. Younger employees in mission organizations (either NGOs or the public sector) were significantly more likely to make the “pro-social” choice, a charitable donation. In our experiments, we avoid the potentially confounding effect of risk preferences (their compensation scheme involved lottery tickets as a third option). Our findings, though, are similar: new entrants into the public sector in Indonesia, students at STAN, exhibit greater pro-social preferences relative to a comparable pool of general workers, students at UI.

Gregg et al. (2011) analyze the data from a survey of thousands of British workers, including employees in for-profit and non-profit “non-caring” and “caring” (health, education and social care) sectors. They use self-reported hours of unpaid overtime worked as their measure of pro-social motivation and find 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. Tonin and Vlassopoulos (2014b) study pro-social preferences among a sample of retirees from 12 Western European countries using data from three waves of the Survey of Health, Aging, and Retirement in Europe. They measure pro-social motivation using responses to a survey question asking whether the respondent had done voluntary or charity work in the past month/year. They find that public workers display greater levels of pro-social motivation than private workers. When respondents’ pre-retirement occupations are taken into account, there are no significant differences between workers in the public and private sector, with the exception of education workers.

In contrast, we find significantly greater pro-social preferences in the “non-profit non-caring sector”. Our measure of pro-social motivation, actual contributions to charity, avoids the problem of imperfect or biased reporting of unpaid overtime hours or time spent on volunteer or charitable activities.

Serra, Serneels, and Barr, (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 effectiveness of its public sector. Finally, they measure pro-social motivation differently, using behavior in the generalized trust game[[49]](#footnote-50), and whether subjects say that the opportunity to help the poor is most important to them.

In contrast to our findings, they find that public 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. However, in their design, elements of reciprocity can potentially confound the results, since reciprocity decisions (in standard trust games) have both reciprocity and altruism components (Cox, 2004; Fehr and Schmidt; 2006).[[50]](#footnote-51) Thus, it may be the case that public and private workers are similarly altruistic, but differ on reciprocity. The Indonesian public sector is also more effective than the Ethiopian public sector, and thus, consistent with the model above and to the extent that the Ethiopian public sector has no credibility in its mission, we would expect to see little correlation between performance on the trust game and public sector employment.

What mechanisms could explain greater pro-social motivation among government sector employees in Indonesia compared to the United Kingdom, Germany, the Netherlands and Ethiopia? One possibility is the measurement of pro-social motivation. Buurman, et al. (2012) and our analysis use direct, behavioral measures of pro-social motivation. This explanation is not entirely satisfactory, however, since, Serra, Serneels, and Barr’s (2011) use a behavioral measure (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.[[51]](#footnote-52)

A more interesting explanation for the divergent results lies in possible differences in labor markets. We conjecture, 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-socially motivated 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-socially motivated individuals concentrate in government employment.[[52]](#footnote-53) Indonesia is likely to have fewer organizations and employment opportunities with pro-social missions compared to the Netherlands and Great Britain.[[53]](#footnote-54)

Recent work from India appears to reach the opposite conclusion and finds that public sector workers are more likely to cheat and are less pro-social (i.e. less likely to donate to charity; Banerjee, Baul, and Rosenblat, 2013; Hanna and Wang, 2013). Hanna and Wang (2013) conduct experiments with Indian college students in their final year of study, some of whom express a preference for work in the public sector. Among these experiments, they compare the performance in a donation game similar to ours, of those who prefer the public sector with those who do not express such a preference. They find that subjects stating a preference for the public sector donated *less* to charity.

We also asked our Indonesian students whether they “…plan to work for a [ministry] when [they] graduate from [institution]”? Approximately 56 percent of the University of Indonesia students, who, like those in the India research, have not committed to either the public or private sectors, responded that they did. As in Hanna and Wang (2013), subjects who indicated they planned to work in the public sector donated less than those who did not, but the difference is not significant. Column 4 in Table 4 reports regression results of just the University of Indonesia students (replicating Hanna and Wang, 2013). The coefficient on the variable is again negative and insignificant (p=0.250). Thus, using a similar specification as Hanna and Wang (2013), we find little evidence that subjects stating a preference for joining the public sector are less pro-socially motivated, but significant evidence that those who have made a binding commitment to join the public sector, and are otherwise similar to those who have not made such a commitment, exhibit greater pro-social motivation.[[54]](#footnote-55)

Our unique subject pool also allows us to advance understanding of the role of selection in the emergence of differences in pro-social motivation between government and general 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, Serneels, and Barr, 2011). Differences across organizations in the attitudes of their employees are driven by the selection of intrinsically motivated individuals into organizations that share their mission.[[55]](#footnote-56) 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) finds.[[56]](#footnote-57) Our study design allows us to exclude competing explanations for these differences. We identify selection effects using a very large sample, none of whom have experience in either government or private sector employment, so that workplace socialization cannot confound our findings.

## Conclusion

We analyze pro-social motivation, effort and entry into pro-social organizations in a novel setting and with new experimental instruments. The results demonstrate that mission-matching indeed leads to higher effort: pro-socially motivated individuals work harder for pro-social missions. In addition, wages partly determine the pro-social motivation of individuals who enter public organizations. When the reservation wage in the non-mission sector is high, pro-socially motivated individuals are significantly more likely to enter public organizations when public wages are low. When mission-based organizations pay high wages, but still less than non-mission organizations, they are more likely to attract *less* pro-socially motivated workers. Finally, using a pool of subjects in Indonesia that allows us to pin down whether pro-socially motivated 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 motivation than a comparable pool of general workers.

In many ways our findings confirm what Wilson noted in his seminal book: (pro-social) motivation is the core driver of effort in the public sector, and pay functions as a critical lever in the recruitment of pro-socially motivated employees. Since it is not immediately apparent whether pro-social motivation can change over time, attracting pro-socially motivated workers is a critical function of public sector pay schemes. When reservation wages are relatively high, we find that higher wages do little to attract ability, but they do seem to attract *less* pro-socially motivated workers. The net effect on output from these competing factors, and the effect of wage differences in public organizations in the face of low reservation wages in non-mission organizations, are important areas of future research.

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**Appendix A – Expanded tables**

## Table A.1: Pro-social motivation and effort

|  |  |
| --- | --- |
| Dependent Variable: | Ability-adjusted Effort for Charity |
|   | I | II | III |
| Amount Sent in Dictator Game | 0.019\*\*\* | 0.017\*\* | 0.018\*\* |
|   | (0.01) | (0.01) | (0.01) |
| Location (D) |   | 0.001 | 0.001 |
|  (1 = STAN) |  | (0.01) | (0.01) |
| Gender (D) |  | 0.009 | 0.009 |
|  (1 = Female) |  | (0.01) | (0.01) |
| Age (in years) |  | -0.003 | -0.003 |
|   |   | (0.00) | (0.00) |
| Current State of Personal Finances |   | -0.001 | -0.008 |
|  (4 = Excellent) |  | (0.01) | (0.01) |
| Family Income (Relative to Others) |  | 0.006 | 0.005 |
|  (5 = Much Above Average) |   | (0.00) | (0.00) |
| Risk Preferences |  | 0.003 | 0.003 |
|  (6 = Risk Seeking) |  | (0.00) | (0.00) |
| Religious Attendance |  | 0.002 | 0.002 |
|  (5 = More than Once a Week) |  | (0.00) | (0.00) |
| Economics Major (D) |   | 0.002 | 0.003 |
|   |  | (0.01) | (0.01) |
| Accounting Major (D) |  | 0.006 | 0.006 |
|   |  | (0.01) | (0.01) |
| Tax Major (D) |  | -0.007 | -0.008 |
|   |   | (0.01) | (0.01) |
| Belief that Charity was Paid |   | 0.003 | 0.003 |
|  (5 = Complete Confidence) |   | (0.00) | (0.00) |
| Treatment (D) |   |   | 0.001 |
|  (1 = Risky Piece Rate) |  |  | (0.01) |
| Treatment (D) |  |  | -0.006 |
|  (1 = Low Charity Multiplier) |   |   | (0.02) |
| Constant | 0.945\*\*\* | 0.954\*\*\* | 0.955\*\*\* |
|   | (0.01) | (0.07) | (0.07) |
| R-squared | 0.004 | 0.009 | 0.009 |
| P-Value | 0.006 | 0.216 | 0.339 |
| Observations | 1720 | 1720 | 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.

## Table A.2: Pro-social motivation and entry into the public organization under low and high salary treatments

|  |
| --- |
| Dependent Variable: Sector Choice (1 = Join Public Organization) |
| Subjects | University of Indonesia |
| Treatment | Low Salary | High Salary | Pooled |
|   | I | II | III |
| Pro-social Motivation | 0.393\*\*\* | 0.050 | 0.324\*\*\* |
|  (Amount Sent in Dictator Game)  | (1.01) | (0.12) | (0.11) |
| Ability | -0.007 | -0.013\*\*\* | -0.007 |
|  (Effort Exerted in Piece Rate) | (0.00) | (0.00) | (0.00) |
| Treatment (High salary = 1) |   |   | 0.636\* |
|   |  |  | (0.34) |
| Treatment X Motivation |  |  | -0.307\*\* |
|  |  |  | (0.15) |
| Treatment X Ability |  |  | -0.005 |
|  Ability |   |   | (0.01) |
| Gender (D) | -0.259\*\* | -0.015 | -0.110 |
|  (1 = Female) | (0.10) | (0.12) | (0.08) |
| Age (in years) | 0.048 | -0.016 | 0.004 |
|   | (0.04) | (0.05) | (0.03) |
| Current State of Personal Finances | 0.164\*\* | -0.095 | 0.018 |
|  (4 = Excellent) | (0.08) | (0.06) | (0.06) |
| Family Income (Relative to Others) | 0.023 | 0.099\* | 0.066 |
|  (5 = Much Above Average) | (0.06) | (0.06) | (0.04) |
| Risk Preferences | -0.022 | 0.026 | -0.001 |
|  (6 = Risk Seeking) | (0.03) | (0.04) | (0.02) |
| Religious Attendance | 0.003 | 0.043 | 0.026 |
|  (5 = More than Once a Week) | (0.04) | (0.05) | (0.03) |
| Economics Major (D) | -0.034 | -0.207\* | -0.146\* |
|   | (0.11) | (0.12) | (0.08) |
| Accounting Major (D) | -0.216\*\*\* | -0.051 | -0.143\* |
|   | (0.08) | (0.13) | (0.08) |
| Tax Major (D) | 0.518 | . | 0.444 |
|   | (0.34) | . | (0.28) |
| Belief that Charity was Paid | -0.020 | -0.113 | -0.069 |
|  (5 = Complete Confidence) | (0.06) | (0.07) | (0.05) |
| Charity Rating | 0.026 | 0.027 | 0.030 |
|  (7 = Most effective) | (0.03) | (0.04) | (0.03) |
| Constant | 0.176 | 0.365 | 0.297 |
| Pseudo R-squared | 0.295 | 0.143 | 0.155 |
| Chi-squared | 31.14 | 18.2 | 36.58 |
| P-value | 0.003 | 0.110 | 0.002 |
| Observations | 92 | 95 | 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.

## Table A.3: Are public sector workers more pro-social?

|  |
| --- |
| Dependent Variable: Amount Sent to Charity in Dictator Game |
| Subjects | All | All | All | Accountants Only | University of Indonesia Only |
|   | I | II | III | IV | V |
| Location (D) | 49.17\* | 89.09\*\* | 89.24\*\* | 127.10\*\* | . |
|  (1 = STAN) | (26.15) | (39.18) | (38.70) | (58.31) | . |
| Intent to Join Public Sector (D) |   | -47.24 | -59.05 | -86.01 | -44.58 |
|  (1 = Yes) |   | (38.03) | (37.60) | (67.60) | (38.68) |
| Gender (D) |   | 72.15\*\* | 78.18\*\*\* | 66.28 | 71.52\* |
|  (1 = Female) |  | (29.85) | (29.50) | (50.55) | (41.06) |
| Age (in years) |  | -5.04 | -6.01 | -18.30 | 10.67 |
|   |   | (10.94) | (10.81) | (19.56) | (14.87) |
| Current State of Personal Finances |   | 27.30 | 19.33 | 27.02 | 37.87 |
|  (4 = Excellent) |  | (21.40) | (21.17) | (37.54) | (30.12) |
| Family Income (Relative to Others) |  | 10.66 | 12.01 | 38.88 | -17.70 |
|  (5 = Much Above Average) |   | (17.27) | (17.05) | (29.49) | (23.40) |
| Risk Preferences |   | 23.59\*\*\* | 23.77\*\*\* | 37.31\*\* | 8.58 |
|  (6 = Risk Seeking) |  | (8.64) | (8.53) | (15.28) | (12.72) |
| Religious Attendance |  | -1.28 | -3.54 | -32.53 | -19.90 |
|  (5 = More than Once a Week) |   | (12.63) | (12.48) | (21.73) | (17.69) |
| Economics Major (D) |   | -29.63 | -9.16 | . | -46.99 |
|   |  | (46.10) | (45.64) | . | (46.60) |
| Accounting Major (D) |  | -0.49 | -2.52 | . | -40.34 |
|   |  | (34.08) | (33.66) | . | (47.50) |
| Tax Major (D) |  | -45.39 | -46.38 | . | -251.80 |
|   |   | (38.88) | (38.40) | . | (198.80) |
| Belief that Charity was Paid |  | 28.02\* | 14.52 | 0.15 | -11.72 |
|  (5 = Complete Confidence) |  | (16.29) | (16.22) | (28.57) | (23.80) |
| Charity Rating |  | . | 58.70\*\*\* | 49.41\*\*\* | 72.90\*\*\* |
|  (7 = Most effective) |  | . | (8.86) | (15.19) | (13.55) |
| Constant | 569.37\*\*\* | 384.50 | 176.20 | 512.20 | 56.60 |
|   | (20.63) | (250.10) | (249.00) | (449.60) | (348.00) |
| R-squared | 0.002 | 0.015 | 0.039 | 0.048 | 0.060 |
| P-Value | 0.060 | 0.014 | 0.000 | 0.001 | 0.000 |
| Observations | 1723 | 1723 | 1723 | 596 | 650 |

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).

**Appendix B - 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.[[57]](#footnote-58) 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.

**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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Banuri: School of Economics and Centre for Behavioral and Experimental Social Science, University of East Anglia, Norwich, UK, NR4 7TJ (e-mail: s.banuri@uea.ac.uk); Keefer: Inter-American Development Bank, 1300 New York Avenue, N.W., Washington, DC 20577 (e-mail: pkeefer@iadb.org). The authors have no relevant or material financial interests that relate to the research described in this paper. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily represent the views of the World Bank, its Executive Directors, or the countries they represent. The authors are grateful for financial support from the World Bank, and acknowledge helpful conversations with Ghazala Mansuri. In addition, the authors are grateful to Riatu Qibthiyyah at the University of Indonesia, Dr. Muhammad Taufiq at STIA, Mr. Ridwan Galela at STAN, and Maria Tambunan at the World Bank, for arranging for access to the three institutions where we conducted the experiments; and to Eric McLester for his invaluable help in running the experiments. [↑](#footnote-ref-2)
2. Motivation may be derived from various sources (Ryan and Deci, 2000) including extrinsic rewards, the mission of the organization, and the task itself (which is the usual interpretation in the literature). Mission-matching (i.e. the extent to which the mission of the organization and the mission of the worker align) or task-matching (i.e. the extent to which the task itself directly impacts workers’ utility) can both increase effort by increasing workers’ motivation. Tonin and Vlassopoulos (2013b, 2014a) provide empirical evidence for self-image concerns as a source of charitable giving (pro-social behavior). [↑](#footnote-ref-3)
3. Some of the literature uses the term “Public Service Motivation (PSM)” rather than pro-social motivation as we do. This is because the literature focuses squarely on motivation for serving the public, which is specific to the public sector in particular. While we also focus on the public sector, our results apply to most mission-based organizations – hence, our preference for using the term pro-social motivation. [↑](#footnote-ref-4)
4. Nearly all missions of public institutions (which are the focus of this work) are pro-social. Furthermore, the mission of the organization is the major source of motivation for workers in the (“non-caring”) public sector since the tasks performed are very similar (if not identical) to the private sector. Therefore, in order for public officials to be “mission-oriented”, it follows that they must be pro-social. [↑](#footnote-ref-5)
5. Other plausible measures of pro-social motivation, such as the willingness to make contributions to individual strangers, do not as closely capture the preferences of subjects for the government mission of serving the general public. [↑](#footnote-ref-6)
6. Note that we are focusing on the public sector in this paper. However, the results extend to any pro-social mission-oriented organization, and particularly to the non-profit sector. Critically, the two major distinctions that we make between the private and public sectors are that: (1) effort in the public sector generates public goods, while effort in the private sector generates private rewards; and (2) compensation in the public sector is independent of effort, while compensation in the private sector is completely determined by effort. These differences are common knowledge and all subjects are repeatedly informed of this. [↑](#footnote-ref-7)
7. We use donations to the Indonesian Red Cross as a proxy for pro-social motivation throughout the paper. This is a plausible proxy, as the scope and outreach of the Indonesian Red Cross mimics the public sector, and in fact, duplicates the work of the National Agency for Disaster Management (Badan Nasional Penanggulangan Bencana). For more on this agency, see: http://www.indonesia.go.id/in/lpnk/badan-nasional-penanggulangan-bencana/2466-profile/368-badan-nasional-penanggulangan-bencana [↑](#footnote-ref-8)
8. Worldwide Governance Indicators place Indonesia’s control of corruption below the 40th percentile of all countries (Kaufmann, Kraay, and Mastruzzi 2009), suggesting a weaker pro-social orientation. [↑](#footnote-ref-9)
9. In the public sector, client-facing ministries (such as health and education) are more likely to be perceived as having “caring” missions since they are in constant contact with the public and directly responsible for delivering services. Support ministries (such as the Ministry of Finance) do not share this orientation, and are correspondingly less likely to be perceived as “caring”. [↑](#footnote-ref-10)
10. 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; or to people more physically or socially distant from themselves; or when they provide assistance directly to individuals or indirectly, by donating to organizations that, in turn, assist anonymous individuals. [↑](#footnote-ref-11)
11. A large literature in behavioral economics uses the dictator game as its core measure of altruism and pro-social behavior (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). 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). [↑](#footnote-ref-12)
12. 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” in the slider task. In these treatments, “ability” was measured during one of the practice rounds, rather than the pay-for-ability task. Subjects were informed that their score in the fourth round would affect their payment in later rounds (none of the practice rounds were compensated). We use the compensated pay-for-ability task as our measure of ability, rather than the uncompensated practice round. [↑](#footnote-ref-13)
13. To avoid priming the subjects, we referred to this round as part of the practice rounds in the instructions. [↑](#footnote-ref-14)
14. Inevitably, the effort measured in this round is a function of both a subject’s ability (as in possessing the skills required to move sliders efficiently) and motivation (the drive to move sliders on the screen). Since we are interested in measuring motivation, we need to correct our measure for ability. We explain how we accomplish this in the subsection below. [↑](#footnote-ref-15)
15. 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. [↑](#footnote-ref-16)
16. Effort-for-charity task: Subjects are not compensated, but effort (sliders) generates donations for the charity. [↑](#footnote-ref-17)
17. Task 1: Effort (sliders) generates private returns for the subjects using a piece rate. Effort does not impact donations. [↑](#footnote-ref-18)
18. Task 2: Subjects are compensated according to treatment, and effort (sliders) generates donations to the charity using a piece rate. [↑](#footnote-ref-19)
19. Task 3/4: Subjects are presented with the choice between two types of contracts before engaging in effort (sliders): (1) a “private organization” where effort generates private returns using a piece rate (identical to Task 1), or (2) a “pro-social organization” where effort generates donations to the charity, and compensation is unrelated to effort. [↑](#footnote-ref-20)
20. Another way to see that clustering is not an issue is to calculate the Moulton factor, which indicates the degree by which our standard errors might be underestimated. The average cluster size *n* is 20 for the age-major-institution clusters, so using the intraclass correlation, $ρ\_{e}$, obtained for ability-adjusted effort, the formula for the Moulton factor, $\sqrt{1-\left(n-1\right)ρ\_{e}}$ , yields 1.026, meaning that the true standard errors would be, at most, 2.6 percent larger than the ones estimated by the conventional specification, implying practically no effect on *p* values. [↑](#footnote-ref-21)
21. 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. [↑](#footnote-ref-22)
22. We use “tokens” as the currency in the lab as opposed to cash. This is primarily for ease of replication across cultures as often currency focal points vary across countries, and so in implementing tokens, experimental protocols and instructions remain identical even when conducting experiments in different contexts. The drawback of tokens is that it reinforces the artificiality of the lab. Replicability of the experiment, however, is a more important concern. [↑](#footnote-ref-23)
23. In addition to the dictator game and effort tasks described above, which were faced by the 1,480 subjects, 240 additional subjects faced slightly different versions of the effort task. In one treatment, affecting 180 subjects, we substituted the standard pay-for-effort task with a risky pay-for-effort 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 effort-for-charity round, the token multiplier on effort was 25 percent of its usual value (25 tokens per slider instead of 100). No significant differences are found in these alternate treatments, and we therefore include these subjects and add dummy controls for the treatments. [↑](#footnote-ref-24)
24. 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: $e\_{soc}-e\_{piece}$. Our results are robust to this specification, as well as to simply adding in our ability measure to the regressions as a control variable. [↑](#footnote-ref-25)
25. For ease of presentation, the dictator game variable (range from 0 – 2000) is divided by 1000 in the table. [↑](#footnote-ref-26)
26. 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). [↑](#footnote-ref-27)
27. Confidence that the charity would be paid in accordance to the instructions was very high. Of our entire sample of 1,723 subjects, only 43 disagreed/strongly disagreed with the statement “I am confident the charity will be paid in accordance with the instructions” (2.5%). Another 15.6% of subjects were neutral, with 84.4% either agreeing or strongly agreeing in our procedures. [↑](#footnote-ref-28)
28. This portfolio effect does not influence the pay-for-effort task that we use to adjust for ability, since the payout for that task is based on chance and there are no contributions to charity in that task. [↑](#footnote-ref-29)
29. Note that this is distinct from “self-consistency”, which would predict that subjects think they are more consistent in their actions than they actually are (Lecky, 1945; Secord and Backman, 1964; Swann, 1987; among others). Self-consistency mitigates consistency bias in that subjects may act inconsistently out of a perception that their actions are more consistent than they actually are. We thank an anonymous referee for pointing this out. [↑](#footnote-ref-30)
30. Our results abstract from the opportunity cost of time in the effort-for-charity task: subjects did not have any option other than to engage in the task itself, whereas in the real world, they might have undertaken any number of alternative activities. However, our results fully capture the opportunity costs of effort. Theoretically the opportunity costs of time should operate in the same direction, with motivated workers giving more time and exerting effort in the task, while unmotivated workers do not. This is an open question, however, but outside the scope of this work. [↑](#footnote-ref-31)
31. Because the dictator game variable is divided by 1,000, an increase of 1,000 tokens in giving yields a .393 or 40 percent increase in the probability of joining the public organization. [↑](#footnote-ref-32)
32. Results are robust to using the median donation instead of the mean. [↑](#footnote-ref-33)
33. We also confirm this using regression analysis (not reported). Effort levels are not significantly different across the two treatments when controlling for motivation. Furthermore, these results are robust to adding ability in as a control. [↑](#footnote-ref-34)
34. 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. [↑](#footnote-ref-35)
35. 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. [↑](#footnote-ref-36)
36. Students often do not control where they will be placed after graduation, but can signal geographic preference. Academic ranking typically determines whether a student will be placed in or near their first preference. [↑](#footnote-ref-37)
37. 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. [↑](#footnote-ref-38)
38. These differences are small. For example, in answer to the question about whether the subject is fully prepared to take risks or tries to avoid taking risks, on a scale from 1 (avoid risks) to 5 (prepared for risk), the great majority of subjects in both STAN and UI answered 2 or 3 (neutral). [↑](#footnote-ref-39)
39. 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). [↑](#footnote-ref-40)
40. The Indonesian public service does not have any employment regulations that systematically privilege applications from demographic groups that might be more pro-socially motivated (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 STAN subjects. [↑](#footnote-ref-41)
41. Risk preferences and donations are positively related in most of our specifications. To our knowledge, this has not been found previously in the literature. [↑](#footnote-ref-42)
42. They find that social image concerns, unobserved in our experiments, play a large role in the decision to turn out. We cannot definitively rule out these concerns as a motivator, but it is unlikely that our results are the spurious outcome of image concerns, since we followed single-blind procedures. [↑](#footnote-ref-43)
43. In another experiment, Tonin and Vlassopoulos (2013a) find that general workers are motivated to exert effort by social incentives (effort yielding donations to a subject-selected charity), but social incentives are not as effective as private incentives (direct payments to the subject): effort increases through social incentives are half as effective as private incentives, by their estimation. [↑](#footnote-ref-44)
44. Indeed, subjects appear to have been motivated by both. In their experiment, the modal subject was unwilling to sacrifice even a tiny amount of income (substantially less than five percent of earnings) in order to extend benefits to the NGO rather than to the student. In contrast, in most dictator games, and in ours in Indonesia, the average donation is about 10 percent and very few (6% of all subjects) give nothing. [↑](#footnote-ref-45)
45. The effects of pro-social wages on ability also differ between Mexico and Indonesia. In Mexico, the reservation wages for the subjects are noisy, while in our experiments, the reservation wages are known, and are relatively high, attenuating the extent to which higher wages in the pro-social organization attracts workers of greater ability. [↑](#footnote-ref-46)
46. The IQ measure employed by Dal Bo, Finan and Rossi (2013) is appropriate for measuring general ability, but its relationship to the specific tasks that their subjects are expected to perform in the public sector is unclear. The measure of ability that we employ is directly relevant to that the subjects perform. In addition, generally motivated workers are more likely to take IQ tests seriously and engage in greater effort in the test (Duckworth, 2012, Borghans et al. 2013). These same workers may also be more likely to score highly on the survey-based measure of public sector motivation used in their study to measure motivation, possibly yielding a mechanical correlation between ability and motivation. The construction of the ability and motivation measures in our study may make them less vulnerable to such a mechanical correlation. [↑](#footnote-ref-47)
47. The workers in the Mexico experiment (and the Zambia experiment of Ashraf, et al. 2014) are likely to have had high pro-social motivation to begin with (high *θi*). The subjects in the Mexico 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 have attracted more highly motivated workers than our subjects in Indonesia, who expect to join the fast track at the Ministry of Finance or a private sector firm. Changes in public sector pay would therefore have had a weaker effect on the observed motivation of new entrants. [↑](#footnote-ref-48)
48. In Dur and Zoutenbier, the effect increases when respondents report greater confidence in political parties. The associations in Smith and Crowley are strongest when respondents perceive less corruption. [↑](#footnote-ref-49)
49. The generalized trust game involves proposers and responders with equal endowments. Proposers decide to send some amount of their endowment to responders. Responders receive three times this amount and can then choose to pass some of this to another (different) proposer. This game is different from the standard dictator game because subjects can “pass on” earnings to another proposer. Since all proposers are not identified, the donating carries an element of reciprocity. Finally, their game also has donations going to their peers, which is different from giving to charitable organizations (see Andreoni, 2008 for a review of the literature on charitable contributions). [↑](#footnote-ref-50)
50. Reciprocity effects are attenuated by their design in the sense that the recipient of the amount is a different person than the sender, but they both come from the same pool (i.e. health workers), whereas in our setup the beneficiary is a charity. [↑](#footnote-ref-51)
51. Among the subjects in our experiments, pro-social motivation and responses to the question “can others be trusted” are significantly correlated. [↑](#footnote-ref-52)
52. In a similar vein, Jones (2012) shows wage differentials between non- and for-profits are related to the size of the industry. He finds that in smaller nonprofit industries, a larger wage differential is found because nonprofit firms are able to find motivated workers without too much difficulty. As the size of the nonprofit increases, so does the demand for workers, yielding a reduction in the wage differential. Since we expect the Indonesian caring sector to be smaller (and have a greater wage differential), it would follow that the average non-profit caring worker in Indonesia would also be more pro-social relative to the average, and that this difference would be wider in Indonesia, relative to the United Kingdom. [↑](#footnote-ref-53)
53. 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. [↑](#footnote-ref-54)
54. While we believe our results highlight the importance of examining actual public sector workers when comparing the behavior of public and non-public sector workers, they may nevertheless be consistent with the findings of Hanna and Wang regarding the differences between uncommitted students who express a preference for public sector work and those who do not. First, to the extent that the Indian public sector is more corrupt (has a less pro-social mission) than the Indonesian public service, and to the extent that India has more pro-social organizations outside of the public sector, more pro-social Indian students may be more averse to working in the public sector. Second, the Indonesian and Indian samples are likely different: the Indonesia subjects, whether from STAN or UI, are elite students and are headed for the top tier of public and private sector jobs. Their motivation and career preferences may therefore not be comparable to those of the Indian subjects in Hanna and Wang (2013). This reinforces one of the central messages of our analysis, that the relative motivation of public and private sector workers is contingent on a wide range of factors, including the reservation wages of potential public sector workers, wages in the public sector, and the degree to which the pro-social organization is actually pro-social. Each of these circumstances is likely to be a fruitful subject for future research. [↑](#footnote-ref-55)
55. 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. [↑](#footnote-ref-56)
56. The 83 respondents who reported moving from the non-profit to the for-profit caring sector were significantly less likely to report unpaid overtime in the non-profit sector than the 2404 respondents who remained in the non-profit caring sector. [↑](#footnote-ref-57)
57. Description from Wikipedia; Accessed on January 24th 2012. Link: http://en.wikipedia.org/wiki/Indonesian\_Red\_Cross\_Society [↑](#footnote-ref-58)