

# Mission Motivation and Public Sector Performance: Experimental Evidence from Pakistan

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## Abstract

This paper studies how emphasizing an organization’s mission affects the performance of workers. In partnership with the Department of Health in Pakistan, I implement a field experiment emphasizing the organization’s mission to community health workers, and cross randomize the mission treatment with performance-based financial incentives. My results show the mission-emphasizing treatment motivates workers to improve performance across multiple tasks—including home visits, antenatal checks, tuberculosis screening, and the organizing of vaccination camps. In comparison, financial incentives improve performance only on the incentivized tasks (home visits). I do not find crowding-out of intrinsic motivations when the two treatments are combined. However, the improvement on home visits in the combined treatment is smaller than when financial incentives alone are provided, reflecting the allocation of effort to non-incentivized tasks. Importantly, the mission-emphasizing treatment also results in improved health outcomes among the target population—including fewer incidences of diarrhea and increased vaccinations. These results highlight that promoting an organization’s mission can be a powerful motivator for public workers, especially in weakly institutionalized environments.

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# 1 Introduction

Motivating employees is a central challenge for all organizations. For many employees, especially in non-profit and public-sector organizations, two key sources of motivation tend to drive performance: financial incentives and an intrinsic motivation from the organizational mission.<sup>1</sup> In this paper, I study how each of these individual motives, as well as how their combination, affects performance, which remains an open question for several reasons. For example, highlighting mission-motives may not matter to individuals who have already selected to be part of a public-service organization. Additionally, emphasizing the mission may stimulate performance improvements on some dimensions at the expense of others—comparable to the multitasking problem of performance linked—monetary incentives (Holmstrom and Milgrom 1991). Furthermore, if the mission intrinsically motivates workers, adding financial incentives may lead to the *crowding-out* of motivations (Deci et al. 1999; Gneezy et al. 2011; Cassar 2018). Such potentially conflicting considerations necessitate understanding whether and how these two motivations affect workers’ performance.

The economic literature has not currently addressed the effect emphasizing a mission has on worker performance.<sup>2</sup> While a few studies have provided insights into mission as a signal to match workers with employers—i.e., theoretically (Besley and Ghatak 2005; Prendergast 2008) and in laboratory settings (Banuri and Keefer 2016; Carpenter and Gong 2016)—none have been able to quantify the impact emphasizing an organization’s mission has on workers’ effort when workers have already selected to work for an organization.

In this paper, I experimentally test whether emphasizing an organization’s mission motivates workers to exert effort in their job. To accomplish this objective, I partner with the District Health Officer (DHO) in Haripur, Pakistan, to implement a mission-training program for existing community health workers. Under the treatment, workers watch a video of the DHO describing and emphasizing the mission and then participate in *reflection* sessions with a facilitator to discuss the mission. Workers are encouraged to share thoughts about the

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<sup>1</sup>Many organizations strategically communicate and emphasize their mission to workers who have already selected to be a part of the organization. For example, Teach for America emphasizes its mission of educational equity to motivate their staff—who have already been selected to work for them—through summer training programs (Diamond 2010). This approach is even true for corporations. According to a survey reported in Harvard Business Review (2015), nearly half of surveyed organizations invest in such activities as emphasizing organizational mission to motivate workers.

<sup>2</sup>To date, scholars have studied how to get workers to exert effort using pay-for-performance (Lazear 1996; Prendergast 1999; Holmstrom 2017; Khan et al. 2016; Muralidharan and Sundararaman 2011; Glewwe et al. 2010; Lazear 2000), non-financial rewards (Ashraf et al. 2014a;b; Neckermann et al. 2014; Kolstad 2013; Delfgaauw et al. 2013; Ager et al. 2016), career concerns (Holmstrom 1999; Dewatripont et al. 1999; Khan et al. 2019), and social incentives (Ashraf and Bandiera 2018).

mission as well as their experiences relating to the mission. Notably, the discussion of mission is not a one-off event; instead, the treatment is designed as a repeated engagement in the form of three monthly sessions.<sup>3</sup> The treatment’s delivery is bundled with a skills-refresher training for the workers, which enables using a placebo treatment in the experiment—i.e., only including a skills refresher in the training without any discussion about the mission.

I also test the effect of a performance-linked financial incentive that runs in parallel to the mission training. Workers in the financial incentives treatment group can earn a bonus of up to 2.9% of their monthly salaries based on the number of households they serve. As in many settings, this financial incentive is tied to just one dimension of what in fact is a multitasking job. I unpack the theoretical ambiguity about how mission and financial incentives may interact as motivators by including a group of workers who receives both treatments. As theory predicts that there can either be a crowding-in—where the two motivations are additive (Bowles and Polania-Reyes 2012)—or a crowding-out—where the additional motivators diminish intrinsic motivations for the job (Gneezy et al. 2011; Deci et al. 1999; Benabou and Tirole 2003; Cassar 2018)—this third treatment enables me to isolate the impact of the combined motivators. Finally, a set of workers continue to operate under the status-quo regime, which forms the pure control group for comparison.

The community health workers of the Department of Health provide several desirable organizational features, making the experimental study of mission-driven motivations and financial incentives possible. These workers are permanent government employees, functioning in non-overlapping communities. Their job is fundamentally mission oriented, yet the department does not emphasize the mission during routine operations, which may diminish workers’ intrinsic, mission-based motivations. The community health workers are responsible for outreach activities focused on basic and preventive health services. Consequently, they are required to visit each household in their community, making monthly visits a key measurable metric of performance in what is essentially a multitasking setting. Activities and tasks carried out during the visits provide measures of multitasking in this setting. However, neither the visits nor associated tasks are monitored by the managers, which potentially leads workers to shirk their responsibilities. These features together make this organization a good setting for the study.

Using home visits and associated multiple tasks as measures, I examine the efficacy of the mission-emphasizing, financial incentive, and combined treatments on the performance of

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<sup>3</sup>By design, the treatment is delivered over three months following examples of organizations who frequently use their mission to motivate workers. For example, Nike constantly emphasizes the mission to its workers by encouraging executives to “work the corporate mission statement into regular conversation” (Lashinsky 2015).

workers. To measure worker behavior, I conduct monthly surveys of ten random households in the community of each worker and ask whether the households were visited during the previous calendar month. In cases where households were visited, I further collect information on the activities performed during the visit, such as examination of pregnant women and children, discussion on disease prevention, and screening for tuberculosis. These additional data quantify treatment impact and the corresponding quality of the workers' effort toward the organization's goals.

Based on the household survey data, the treatment emphasizing the mission brings a 16.2% improvement in household visits by the community health workers over the status quo. The data show this treatment increases the probability of a household visit by 5.7 percentage points over the baseline of 35.3 %, observed in the pure control group. I am able to directly attribute this change to the mission treatment, as the placebo training treatment does not achieve any significant improvement in household visits. I also find the workers motivated due to the mission treatment improve performance not only against the home-visits metric but across multiple other tasks. The mission treatment brings an improvement of 0.17 standard deviations on a multitasking index comprised of improving antenatal and child checks, imparting health literacy for disease prevention, screening households for tuberculosis, and organizing vaccination camps. In comparison to the mission treatment, the financial incentives improve household-visit performance by 27.5 percent, increasing the probability of a household visit by 9.7 percentage points above the control probability of 35.3%. However, workers receiving the financial incentive treatment do not change behavior on multiple-tasks performance—there is no discernible difference between the multitasking index of the pure control and the financial incentive treatment groups.

I do not find evidence for crowding-out of motivations when the mission treatment is combined with the financial incentives, but the data show financial incentives do lose their effectiveness. The workers in the combined treatment improve performance in terms of household visits compared to the pure control group, but the improvement is not as high as the group that received only the financial incentive. Namely, the combined-treatment group improves performance by 6.7 percentage points as opposed to an improvement of 9.7 percentage points achieved with the similar, but stand-alone, financial incentive. The difference between the two effects is statistically different from zero, which indicates the financial incentives become less effective rather than the intrinsic motivations getting crowded-out.<sup>4</sup>

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<sup>4</sup>See Kamenica (2012); Gneezy et al. (2011); Frey and Jegen (2001); Bowles and Polania-Reyes (2012); De Wit and Bekkers (2016); Deci et al. (1999); Desmidt (2016) for review of crowding-out literature from the viewpoint of different fields.

The difference in household visits between the financial incentives and the combined treatment appears to be driven by multitasking. Similar to the stand-alone mission treatment, the combined (mission plus financial incentive) treatment improves the performance of workers on multiple tasks, as reflected by an increase of 0.143 standard deviations on the multitasking index compared to the pure control group. In comparison, the financial incentive treatment does not improve productivity on any of these tasks. This difference in the allocation of effort results in the financial incentives becoming less effective when combined with the mission treatment in terms of increasing household visits.

To explore the mechanism behind all these results, I survey workers and find those in the mission and combined treatments become more intrinsically motivated in two ways. First, I find workers in the mission and combined treatments believe their department cares about the mission and is more aligned with their preferences, which in turn drives these workers to feel more attached to their job. I interpret these beliefs as evidence of intrinsic motivation due to the alignment of the mission with workers' preferences. Second, as I detail later in this paper, one year after the experiment, I find the workers in the mission and combined treatments are more altruistic, which I discern using an incentivized willingness-to-work task. These two pieces of evidence confirm that the mission treatment intrinsically motivates workers to perform better.

Mission treatment motivates workers to improve effort in terms of the number of household visits and in performing multiple tasks. However, these are inputs in the process of improving the health of the community—the ultimate mission of the organization. Therefore, I also collect data through household surveys and from administrative registers to trace the effect of mission treatment on the health of children. Mission-emphasizing and combined treatments result in better health outcomes among children compared to the control group, as measured through an index of outcomes including incidences of diarrhea, vaccination rates, and mortality rates. The financial incentive treatment also improves health; however, the effects of this treatment are smaller in magnitude than the mission and combined treatments.

I rule out three alternative explanations for how the mission treatment works. First, if the mission treatment provided new information about the tasks the workers need to perform, then we should find the placebo group of workers would improve on performance measures related to mother and child health, which was the focus of the skills-refresher training. However, we do not find any evidence of the effectiveness of the placebo treatment. Second, if the mission treatment made workers concerned about being monitored—and thereby resulted in higher effort—then their perception of being monitored would be different from other workers. We find the mission-emphasizing and combined treatment workers do not have

different beliefs about being monitored compared to the workers in other treatments and control groups. Third, in addition to being intrinsically motivated by the mission treatment, it is conceivable that workers may be influenced by their peers to perform. I randomize the workers receiving the mission training into either a group setting or into a private, one-on-one session with the facilitator. I find no difference in the performance of the two sub-treatments, rejecting the possibility that peer influence may add to the individual motivation due the mission.

This paper provides, to my knowledge, the first empirical evidence via a field experiment that mission can motivate workers to perform when contracts are incomplete. Theoretical literature has argued that mission motivation works on the selection margin (Besley and Ghatak 2005; Prendergast 2007)—i.e., organizations invest in mission to attract workers who have similar preferences—and that it helps economize on incentives (Wilson 1989). This paper, however, provides evidence that mission also generates an incentive effect beyond the selection margin. When organizations emphasize their mission, they motivate workers who are already part of the organization to exert more effort. With this result, this paper also contributes to the literature of personnel economics encompassing financial rewards (Lazear 2000; Prendergast 1999; Gibbons 1998) and social incentives (Ashraf and Bandiera 2018; Ellingsen and Johannesonn 2008; Rotemberg 1994). Further, this study extends the small literature that workers may get sentimental utility from their organization (Akerlof and Kranton 2005) and empirically establishes that managers can “exploit” this sentimental utility by emphasizing the mission.

The findings in this paper contribute to, and link, existing literature regarding the problems of multitasking (Holmstrom and Milgrom 1991; Baker 1992; Hart et al. 1997) and crowding-out (Gneezy et al. 2011; Deci et al. 1999; Frey and Jegen 2001). While the paper does not find crowding-out of intrinsic motivations, it is the first paper to report that financial incentives can lose effectiveness due to the addition of intrinsic motivations. It also provides evidence that this loss of effectiveness of financial incentives is linked to multitasking. The paper shows that emphasizing the mission motivates agents to be better workers overall, which helps ward against the tendency to direct effort only to the contractible tasks.<sup>5</sup> However, this equitable allocation to multiple tasks can reduce the efficacy of performance-linked financial incentives on the incentivized task when the two are combined.

This paper also contributes to the literature on improving public services in countries with weak institutions who struggle to enforce contracts. In such an environment, emphasizing

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<sup>5</sup>See Dewatripont et al. (2000) for a review of other ways to address the multi-tasking problem.

the mission motivates workers to work harder without changing the terms of the contract. Existing literature has focused the debate on either selecting better workers to join the public sector (Dal Bó et al. 2013; Deserranno 2019; Ashraf et al. 2018) or designing performance-contingent incentives to address under-performance.<sup>6</sup> This paper takes the literature beyond the debate between performance-contingent incentives and selection and instead argues that the public sector in places with weak institutions can use the mission to activate intrinsic motivations of already contracted agents, making them perform better without changing the incentives.

Lastly, this paper highlights the importance of clear communication from managers as an important component of managerial practice. By providing clear communication about the mission, managers set expectations about organizational values. This process in turn motivates workers to contribute more to the organization. In this sense, the paper relates to the literature on management practices in public organizations (Rasul and Rogger 2016; Bloom et al. 2015; Janke et al. 2019; Fenizia 2019) and firms (Bloom and Van Reenen 2010; Bloom et al. 2013) by proving a causal link between managerial communication and worker performance.

In the rest of the paper, I first describe the context and subject population of this experiment and then detail the experiment’s methodologies. Thereafter, I highlight my results on household visits, multitasking, and health outcomes. I discuss intrinsic preferences as a possible mechanism before wrapping up the discussion in the conclusion section.

## 2 Context

### 2.1 Community Health Workers

Community health workers play a key role in delivering preventive and basic health care in many countries around the world, including in developed countries, such as the United States of America. Researchers have estimated that about five million such workers operate within the global healthcare system (Perry et al. 2014). These workers’ role has received special attention in low- and middle-income countries since the 1970s, as countries faced extreme shortages of trained health professionals to promote preventive health care aimed

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<sup>6</sup>Performance-contingent incentives studied in the literature are either financial (Khan et al. 2016; Muralidharan and Sundararaman 2011; De Ree et al. 2018; Duflo et al. 2012; Glewwe et al. 2010; Banerjee and Duflo 2006) or non-financial (Ashraf et al. 2014a;b; Khan et al. 2019).

at achieving sustainable development goals (Scott et al. 2018).

In Pakistan, community health workers are considered the backbone of the preventive and primary healthcare system, especially in rural areas. These workers function as a separate division of the Department of Health that is called the Lady Health Workers (LHW) program. Their division was established as a special program in 1993, with a total of 96,000 workers across the country (Jalal 2011). Since 2014, they are considered full-time public-sector employees, with a defined service structure and job protections equivalent to those afforded other bureaucrats.

Community health workers in Pakistan are all women.<sup>7</sup> They are hired by the Department of Health to work in specific communities in each district. They are affiliated with a health clinic for reporting purposes, but their work involves providing services outside of the facility to a clearly defined community. They do not overlap with other community health workers in their geographical sphere of responsibility. Since they work in non-overlapping communities, they also do not have any systematic interaction with other health workers in their routine jobs. This feature of the organization helps the current study by limiting the scope for spillovers, and it also makes feasible a clean measurement of performance.

Community health workers are primarily outreach workers. Their core duty is to provide preventive and basic health care to citizens at the citizens' doorstep. Thus, providing any kind of service hinges on the workers making visits to the households. Such visits are important for workers to stay up-to-date on the health status of the community and to educate the household members about disease prevention. During these visits, community health workers advise women on birth control, provide antenatal checks to monitor the health of expectant mothers, and follow up after the birth to advise on disease prevention and nutrition. Performing these duties requires community health workers to visit households regularly to keep track of marriages, pregnancies, and births. Notably, these tasks are assigned to the workers by their division in the Department of Health, so these activities are considered core duties.

Additionally, these workers perform tasks that are not considered core duties but that have been added to their roster of tasks. In this research, I focus on two of these additional tasks, as these activities have a significant impact on the health of the community. Firstly, workers have been asked to help the department fight the spread of tuberculosis in rural communities. To support this goal, they are supposed to ask the household if anyone has been coughing in

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<sup>7</sup>According to the World Health Organization, 70% of workers in the health sector in 104 countries are women (Boniol et al. 2019).



the family for more than a week. If families respond affirmatively, the workers ask further questions about the nature of the cough and whether the person is present, and the workers may refer the potential patient to visit the nearest clinic for consultation with a doctor.

Secondly, to support vaccinations, community health workers organize community immunization camps. Normally, trained technicians based in health facilities provide vaccinations, and parents can take children to health clinics for their routine vaccinations. However, to make access less costly for families, the technician can also organize camps in communities to bring the service closer to households. The successful organization of these camps requires effort from the health worker within the community, who teams up with the technician. Though the community health workers are not directly responsible for vaccinations, they use their interactions with families to encourage mothers to get their children vaccinated.

Workers receive a fixed monthly salary that is not dependent on their performance. The salary of a community health worker is about Rs. 17,500 per month, which is on par with the minimum wage set by the Government of Pakistan and higher than salaries in the informal sector for a person with a similar skill profile. Alternative employment opportunities are limited in the rural areas, though the skills gained from being a community health worker can be utilized to act as an informal private healthcare provider. Community health workers do not have a direct path for career progression—theoretically, they can apply for the job of a supervisor (if there is an opening), but those positions are few and open to competition from outside.

Even though there are no prospects for moving up the career ladder, the job of a community health worker comes with protections afforded to any other full-time employee of the state. Anecdotally, no one leaves the job and no one gets fired from it. There is no objective system of monitoring other than a register of information the workers keep, which can be checked by a supervisor, if needed. This lack of incentives and difficulty in measuring performance creates conditions for potential moral hazard.

## **2.2 Haripur District**

Haripur lies in the Khyber Pakhtunkhwa province of Pakistan and has a population of 1.003 million people. The district is considered one of the better areas in Pakistan in terms of economic development: It is ranked 18th out of 114 districts in the country in terms of the Human Development Index, which makes it comparable to Lebanon in overall score. According to the most recently available statistics, the female literacy rate in the district is

60% and the male literacy rate is 82%.

The Health Department in Haripur operates one district hospital and 40 rural clinics. Each rural clinic employs a doctor, a nurse, a pharmacist, and a vaccination technician. These staff work in the facility. The department also employs 710 community health workers to serve local communities. Despite a wide public-health network, about 58% of households rely on private health care when a child gets sick.

## 3 Details of the Experiment

This section details the experiment that was designed in partnership with the District Health Officer (DHO) to motivate the community workers. I first describe the research activities that took place between the end of 2018 and mid-2020, including treatments and data collection. Thereafter, I describe my tests of randomization balance.

### 3.1 Treatments

#### 3.1.1 Organizational Mission

This treatment entails what was pitched as a training session between worker(s) and a facilitator. Before the start of this experiment, I worked with the District Health Officer (DHO) to record a short video of the officer describing and emphasizing the organizational mission of the LHW program (the division that employs the workers). In the video, the DHO gives the following message (translated from Urdu):

*Today, I want to give LHWs a message about the LHW Program's mission and purpose. You are the Department of Health's vanguard for mother and child health. It is our resolve that I will extend health services to every household through this program so that no mother or child becomes a victim of any disease. The mission of this program is to ensure no mother or child is left without basic health services. And neither should a mother be left without knowledge about her own health and that of her child. I pay my tribute to your services. And I believe you will continue with your good work.*

Representatives of the DHO office contacted the workers to invite them to the training sessions. I randomized how the treatment was delivered to the workers to decipher whether the peers-influence channel for the mission treatment affected behavior: In the **Mission Private** treatment, the worker and facilitator met one-on-one in a private setting, whereas

in the **Mission Public** treatment, they met in a group setting with other workers. The group sizes were between 20 to 30 workers, depending on the logistics of the area.

In the session with a facilitator, the worker(s) were first asked to write on a piece of paper what they thought the organizational mission was. Thereafter, they watched the video. The facilitator then guided the workers through discussions of this mission statement, whether it aligned with their view, how it would influence their work, to what extent it was important, etc. The treatment was delivered in a participatory manner such that the facilitators did not “teach” but rather asked questions to direct the discussions and to invite workers to participate by sharing their views. The facilitators maintained similar lines of questions in the private and the public sessions. In the public sessions, they made sure that every worker had an opportunity to voice their opinion and participate in the discussion. Such efforts were intended to help the workers internalize the mission statement and feel as though they had a stake in the process.

This discussion was followed by refresher training on the basic skills required for preventive and basic healthcare provisions. These used case studies on care for pregnant women and for children. The inclusion of the skills-refresher materials helped make the discussion about mission appear more organic to the session and also provided a baseline for the placebo treatment, to rule out some alternative explanations for the mission-driven motivation. Each session lasted two-to-four hours and were repeated monthly for three months. In the subsequent sessions, the mission discussion focused more on sharing experiences from the field and how the workers connected with the organizational mission.

In the original randomization, the public treatment group was split into two sub-treatments. In the **Mission Public, Not Observable**, the workers were told the purpose of these sessions was not to discuss their performance; inversely, in the **Mission Public, Observable**, the workers were told that the group would discuss the performance of workers in the third session. I introduced this variation to mediate any workplace-norms mechanisms that may be driven by concerns for social image among peers. For the analysis in this paper, I pool these variations into one main mission treatment.

### 3.1.2 Performance-based Financial Incentives

Workers in this group were informed by the Health Department at the start of the project that they had been selected for a program where they could earn a financial reward based on the number of households the worker visited every month. Namely, they could earn Rs. 25 for every additional household visited over and above their routine (baseline) visits—for

up to 20 additional households. I used the month of November 2018 as a baseline. Through this incentive, workers could earn a maximum incentive of Rs. 500 (\$ 3.5) if they visited all 20 additional households in the month or visited all households assigned to them (i.e., if they ran out of additional households in their assigned area). The maximum incentive therefore totalled to 2.9% of their monthly salary. This incentive was provided for three months, though the workers did not know the term before the end of the third month. Mathematically, this treatment could be written as:

$$w_{ij} = \begin{cases} 25 * x_{ij} & x_{ij} < 20 \\ 500 & x_{ij} \geq 20 \\ 500 & x_{ij} + h_j = H_j \end{cases}$$

where  $w_{ij}$  is the amount earned by worker  $i$  in month  $j$  when she visits  $x$  households over and above the number of households visited in baseline  $h$  or when she runs out of total assigned households  $H$ .

The baseline benchmark and the subsequent incentive payment was based on the data collected in the independent survey, described in section 3.4. The first incentive payment was made during the second month of the experiment, after the first round of surveys collecting information about visits during the previous calendar month was completed.

### 3.1.3 Combined Treatment of Financial Incentive and Mission

For this treatment, I paired the Mission Public sessions with the financial incentive offered to the workers. Workers were informed they had been selected for a financial incentive program through a phone call, and they were invited to the Mission Public sessions, described above. The reward amount earned by each worker was privately disclosed, and the training sessions did not include any discussion of the financial incentive, which kept the financial rewards portion of the treatment comparable to the standalone financial incentive treatment.

### 3.1.4 Placebos and Control

In order to rule out alternative explanations for any results found during this experiment, I included placebo treatments as well as a pure control group in the experiment.

**Placebo:** During the placebo, a group of community health workers met in a public setting to receive a refresher training on the basic services the workers were expected to provide to their communities. The refresher training contents were the same as those delivered during the latter half of the mission-treatments sessions. I also divided this treatment into sub-groups based on whether an announcement about performance would be made or not—following the methods of the mission-emphasizing treatments, in one group, I explicitly announced there would be no discussion of workers’ performance related to the refresher training, and in a second group, I informed workers that the group would discuss their performance in the third session. For the analysis in this paper, I pool these sub-treatments in one placebo group.

**Control:** The pure control workers neither participated in training sessions nor received any financial incentives. In this way, this group continued under the status-quo condition.

### 3.2 Sample and Design

I randomized the 710 Lady Health Workers into treatment groups, as shown in Figure A1. The randomization was done at the individual level but block-stratified at the clinic level. Each treatment condition had 89 workers except the “Placebo training, observable” treatment group, which had 88 workers. For the main analysis, I combine all the sub-groups of the mission and placebo treatments into their respective groups.

### 3.3 Timeline

As shown in Figure A2, the project began in December 2018 with a baseline survey of households, followed by a worker survey in January 2019. The Department of Health sent invitations for their first respective training treatments to the selected workers during the last week of January. At the same time, workers undergoing the financial incentive treatment were informed about the opportunity to earn a “bonus” based on performance. The first training sessions were held at the beginning of February, repeating monthly until April 2019. Post-surveys of the households were launched on the 1st of March 2019 and continued until June. I collected administrative data and conducted individual phone interviews with each of the workers in April 2020.

### 3.4 Data Sources

I use data from household surveys, worker surveys, and administrative reports to trace the effects of treatments on performance.

**Household Surveys** I surveyed ten randomly selected households in the target community of each worker during five rounds of surveys—one baseline survey, three post-treatment-session surveys (administered during the month following the training sessions), and one post-experiment survey administered a month after the completion of the experiment. Since the workers’ communities were not all the same size, each community’s households had a different probability of selection for a survey. Consequently, I used inverse probability weights in the regressions when using these data.

The households were selected through randomization carried out in the field, and the surveys were administered to female respondents by female enumerators to account for any cultural sensitivities respondents may have.

The baseline survey was conducted in December 2018, at which time each responding household was asked if the health worker visited in the previous calendar month (i.e., November 2018). The post-treatment surveys were administered every month from March to June 2019, beginning at the first of every month. In each survey, the households were asked information about the previous completed calendar month—for example, the survey starting March 1st collected information from households about worker activities in February. Households were then resampled after the first post-treatment survey. The experiment ended by the end of April 2019, so the survey in May was the last round to collect information relevant to the duration of the experiment. I administered an additional round of surveys in June 2019 to collect information regarding visits a month after the completion of the experiment.

In addition to asking about whether health workers visited a home, I also collected information on the health of children, their vaccination status, and other activities performed by the workers. However, due to financial constraints and the need to complete a large number of surveys in a limited amount of time, I did not include all questions in all rounds of surveys.

**Worker Surveys:** I administered a baseline survey to the workers in January 2019. This survey collected information on worker tenure; motivation for public service, using (Perry 1996); and IQ, using Raven’s matrices. An end-line survey of workers was later administered in June 2019. This survey collected information on the beliefs of workers regarding the

mission, its importance, and their identification with the organization. Finally, a post-end-line survey was administered a year after completion of the project. This survey collected further information on the beliefs of workers as well as allowed me to administer a lab in the field experiment to study the persistence of the treatment effects.

**Administrative Reports:** To trace the effect of treatments on the health outcomes of the communities, I collected data on the mortality rates of mothers and children within the assigned communities of each worker. For each worker, I also collected weight data from the administrative reports—generated by the health workers—for five random children. I collected this information one year after the treatments were administered.

### 3.5 Randomization Balance

Table A1 uses the baseline household data to test for randomization across the workers assigned to the different treatments. The table reports a joint orthogonality test between the treatments and confirms treatment assignment does not predict performance or community characteristics at the baseline. I also test for differences between each treatment condition and the pure control condition and report the p-value from the Wald test of the null hypothesis—i.e., that there is no difference between the treatment and control. In this table, I pool the mission and placebo sub-treatments in their respective groups. I also report the balance of the original randomization in Table A2. Both tables show the treatments are orthogonal to the distribution of community characteristics.

Table A3 provides summary statistics about the community workers and households in the experiment. The average worker is responsible for serving 156 households, and on average, they have been working in the same position within the department for fifteen years. Additionally, on average, these workers have completed ten years of schooling, which is higher than the average 3.8 years of schooling for women in Pakistan. About 38% of them also have a healthcare-related certification. Table A4 reports the balance between the treatments on individual characteristics of workers. Data on these characteristics were collected before the start of the experiment but only became available after randomization was complete. The treatments are balanced on all variables except for the tenure of workers.

## 4 Main Results

In this section I report my analysis of the data, with a focus on the questions of whether emphasizing the organizational mission improves performance. I first describe my estimation strategy for studying these questions and then move to the results section.

The data were collected through a survey of households in the respective communities of the 710 community health worker, as described in 3.4. I run the following regression to estimate the effects:

$$\begin{aligned}
 V_{ijmb} = & \beta_0 + \beta_1 * Mission_{jb} + \\
 & \beta_2 * FinancialIncentive_{jb} + \beta_3 * (Mission\&FinancialIncentive)_{jb} + \\
 & \beta_4 * Placebo_{jb} + B_b + M_m + z_{jb} + \epsilon_{ijmb}
 \end{aligned} \tag{1}$$

Equation 1 presents the main estimation used to analyze household-level data.  $V_{ijmb}$  is the outcome reported by household  $i$  from the community of worker  $j$  in survey round  $m$ .  $Mission_{jb}$ ,  $FinancialIncentive_{jb}$ , and  $(Mission\&FinancialIncentive)_{jb}$  represent treatment dummies for each worker indicated by  $j$  in block  $b$ .  $Placebo_{jb}$  takes a value of one for the placebo treatments and zero otherwise.  $z_{jb}$  controls for the baseline performance of worker  $j$ ; however, this term is only included when the outcome variable is a visit. To absorb block- and survey-month specific variation in the data,  $B_b$  is a vector of the randomization-block controls, and  $M_m$  captures survey-month.  $\epsilon_{ijmb}$  is an idiosyncratic error term. When a variable is only reported in one round of surveys, I omit the vector of month dummies. In this estimation, I pool all sub-treatments of the mission into one treatment and also pool the two placebo sub-treatments into one.

For analyses using worker-level data, I estimate Equation 2.  $V_{jb}$  is the dependent variable in the worker-level estimates reported by (or for) the worker  $j$ .  $B$  is a vector of the randomization-block controls and  $\epsilon_{jb}$  is an idiosyncratic error term.

$$\begin{aligned}
 V_{jb} = & \beta_0 + \beta_1 * Mission_{jb} + \\
 & \beta_2 * FinancialIncentive_{jb} + \beta_3 * (Mission\&FinancialIncentive)_{jb} + \\
 & \beta_4 * Placebo_{jb} + B_b + \epsilon_{jb}
 \end{aligned} \tag{2}$$



## 4.1 The Effect of Mission on Visits

I study whether mission acts as an incentive for workers to improve their performance in terms of visiting more households. I also study how it interacts with performance-linked payments in this same environment.

Table 1 presents the main results of Equation 1. Each column in the first panel presents results from the regressions using household data pooled across the three waves of household surveys conducted during the experiment. Each regression uses randomization-block and survey-wave fixed effects and clusters standard errors at the worker level. I have data on ten households per community in each wave of the post-treatment-session survey, but as the communities are different sizes, I weight each point with the inverse probability of being selected for the survey to make the data representative. Further, to achieve higher precision, I include the baseline performance level of workers in the regression, reported in Column 2—here, the baseline performance is defined as the probability a household was visited by the worker before the start of the experiment. Column 1 reports the results of Equation 1 without controlling for the baseline performance of workers.

As shown in row A of Column 1, if I do not control for the baseline performance, the mission treatment improves the probability of a household visit by 5.1 percentage points. This effect changes only marginally when I add the baseline controls to the regression, as shown in Column 2. When I include these baseline controls, workers improve visits by 5.7 percentage points over a control mean of 35.3 percent. This change is a 16.14 % increase in the performance of workers achieved via the mission treatment, suggesting that emphasizing the organization’s mission does work as an incentive to existing workers. The observed extra effort translates into eight additional visits in a given month, on average. Furthermore, the effects of mission on performance do not disappear immediately after the completion of the experiment. As shown in Figure ??, in the post-experiment survey, the workers who received the mission treatment continue to perform better compared to the pure control. Further, in section A.1, I rule out alternative explanations for this change in performance.

I also study how traditional financial incentives perform in this same environment. The second row of Table 1 reports the effect of performance-based financial incentives on the probability of household visits. The probability of a household visit increases by 10.1 percentage points for this group when not controlling for baseline performance (Column 1) and 9.7 percentage points when I control for the baseline performance (Column 2), compared to the status-quo condition. Such results indicate financial incentives improve the performance of community health workers by 27.4 percent. This improvement translates into 15.1

additional household visits by the workers in a month.

[Table 1 Here]

## 4.2 The Combined Effect of Mission and Financial Incentive

In the preceding analysis, I establish that the mission treatment motivates workers to improve effort on home visits. In this section, I study how the mission treatment interacts with financial incentives. Many organizations use mission motivation alongside financial incentives, expecting the two to complement each other. Theoretically, the literature argues the two can complement each other if they provide some “good news” about the intentions of the principal (Bowles and Polania-Reyes 2012).<sup>8</sup> However, if the mission treatment and financial incentives send opposing signals, then the two treatments may cancel the effect of each other (Benabou and Tirole 2006).

To study the combined effect, I include a group of workers in the experiment who receive both the mission-emphasizing and financial incentive treatments. The third row in Table 1 shows the effect of this combined treatment on the probability of a household visit. The effect of combining the two treatments is large and statistically different from the pure control group. These workers improve by 6.8 percentage points above the control condition (Column 2), which is an improvement of 19.2 percent in performance. However, despite this treatment motivating workers to work harder, the effect is not additive because combining mission and financial incentives does not lead to an even higher improvement in performance. On the contrary, the effect of combined treatment is smaller than the group that received just the financial incentive treatment.

I test the differences between coefficients on the treatment dummies in the second part of Table 1 to study if the effects are indeed different from each other. This part of the table reports the linear combinations of coefficients and tests them against the null hypothesis that the difference between them is zero. I report the  $p$ -values of these tests in square brackets. In the second row of the second half of Table 1, I find the effect of mission is smaller in magnitude than the effect of combined treatment (mission and financial incentive) but not statistically distinguishable. This result suggests that the intrinsic motivation does not get crowded out when the two treatments are combined.

The third row of the second half of Table 1 reports the combined treatment is smaller than

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<sup>8</sup>By complements, I mean the effects of the two motivations are additive.

that of the financial incentive treatment. Receiving the two treatments together diminishes the effect of financial incentives by almost 3 percentage points. This difference is also statistically different from zero. While combining the two treatments does not crowd-out the intrinsic motivations, the combination does appear to reduce the effectiveness of the financial incentives substantially.

While I will discuss the possible channels for this effect in the next section, the current evidence indicates that it is at least not driven by a ceiling effect in the financial incentives treatment. If the ceiling effect were in play, workers in the group receiving both the mission-emphasizing and financial incentive would have at least improved by as much as the financial incentive-only group. Instead, their performance is lower than the financial incentive-only group, rejecting the possibility of a ceiling effect.

The preceding analysis shows organizations can use their mission to address the moral hazard arising out of incomplete contracts. Not surprisingly, financial rewards has the bigger effect on the effort of workers. However, a puzzle emerges: when the two treatments are combined, the financial incentives appear to be less effective in motivating effort—workers in the combined treatment leave money on the table even though the intrinsic motivation does not get crowded-out. I explore a possible reason behind this puzzle in the next section.

## **5 Why Do the Financial Incentives Become Less Effective?**

In this section, I argue the puzzle of the diminishing effectiveness of financial incentives is because the mission treatment stimulates workers to allocate effort to multiple tasks, whereas the financial treatment does not. To support my argument, I first provide evidence that there is no difference between the mission and the financial treatments in terms of the overall effort, proxied by the length of the work day. Second, I provide evidence that workers in the mission-emphasizing and combined treatments allocate effort to performing multiple tasks whereas those in the financial treatment do not—they focus mostly on visiting more households, which is the incentivized task.

## 5.1 Time Spent on the Job

In the workers' endline survey, I collect information regarding the length of their typical work day. In Appendix Table A8, Column 1, I find that even though the treated workers increase the amount of time they spend on their job in a given day relative to the pure control, there are no differences between the mission, combined, and financial incentives treatments. In the status-quo case, the workers self report that they spend about 318.4 minutes (or five-and-a-half hours) everyday on their job. The mission treatment increases this time duration by 16.9 minutes, and the financial incentive and combined treatments increase the reported duration by about fifteen minutes. I conclude that all treated workers exert similar levels of effort on their jobs. But since there are differences in how many households they visit, as reported in Table 1, based on their treatment groups, the workers may be allocate their effort to multiple tasks differently. I check this notion in the next section.

## 5.2 Multitasking

As the financial incentives treatment increases the workers' monetary utility only if they improve performance on the incentivized task, theory suggests workers only exert effort for that task. In contrast, I hypothesize the mission treatment motivates workers to improve without directing effort to any one task, resulting in better performance overall. If that is indeed the case, it helps resolve the puzzle of financial incentives becoming less effective on the incentivized task when a financial incentive is added to the mission treatment. To this end, I examine the breakdown in workers' multitasking activities.

Workers perform multiple tasks that can be largely divided into core and non-core tasks. Core tasks are the activities they are expected to perform during a visit—such as antenatal checks, child health exams, and discussions about disease prevention. Non-core tasks include activities outside the direct responsibilities of workers. I track two such non-core tasks—screening for tuberculosis and helping the department's immunization technicians organize immunization camps in their communities. Table 3 presents the analysis of these core and non-core tasks. The first four columns of the table use data from the household surveys and the fifth column relies on data from worker surveys.

Table 3, Columns 1 – 3 report workers' core activities, with the first two columns describing data from the household surveys during the experiment and Column 3 depicting household responses to the post-experiment survey. Column 1 of Table 3 shows the effect of this study's treatments on whether the workers perform antenatal checks on pregnant women during their

visit. The mission and combined treatments increase the probability of an antenatal check by 5.2 and 4.6 percentage points, respectively, over the control mean of 35.9%. The financial incentive treatment does not have any effect on this task. Column 2 reports the effects on children examined. Workers in the mission and the combined treatments are 3.2 and 2.7 percentage points more likely to examine children, respectively. However, only the effect of the mission treatment is significant. Workers in the financial incentive treatment improve on this task by 2.4 percentage points, but the effect is not significant. Column 3 reports that when asked whether workers discussed general disease prevention, household responses differ across the study's treatments. Workers who received the mission and combined treatments are 5 and 5.8 percentage points, respectively, more likely to discuss disease prevention with the household, whereas the financial incentives treatment sees a 2.4 percentage points increase, though this effect is statistically not significant.

As a non-core activity for the home visits, workers have been asked to screen households for symptoms of TB and refer suspected patients to doctors for diagnosis.<sup>9</sup> Column 4 of the table reports the effect of this study's treatments on the probability of a household being screened for TB, based on data collected in two rounds of surveys. The mission-treatment appears to motivate workers to improve their performance on this task: Workers in the mission and combined treatments are 4.7 and 4.4 percentage points, respectively, more likely to screen the households for TB. However, workers in the financial incentives group do not improve their performance on this task at all.

The last task I analyze is workers' participation in co-organizing immunization camps, a non-core activity. As discussed earlier, community health workers encourage parents to get their children vaccinated as part of their core duties, but these workers are not directly responsible for providing vaccination services. Instead, children are taken to a health facility, where trained technicians vaccinate them. To improve coverage rates, technicians may also organize community camps to bring their services closer to families, making it less costly for families to have their children vaccinated. In organizing these camps, the community health workers help manage logistics, advertise the camp, and help mothers bring children to the location. Workers do not get paid extra for this activity and can easily shirk some of their responsibilities unless they are motivated by the mission to help improve the health of mothers and children in their communities.

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<sup>9</sup>There is a separate division within the health department that is focused exclusively on addressing the spread of tuberculosis. This division has its own staff and is integrated in the health facilities. However, the department has asked community health workers to help refer suspected cases of tuberculosis to doctors for proper diagnosis. From there, these patients are then traced by the separate division.

In the endline survey, I asked workers how many camps they helped organize during the three-months period. Column 5 reports the effects of treatments on their responses. Workers on average, report organizing 5.7 camps over three months in the control group. Workers in the mission and combined treatments organized on average nearly an additional half camp during this same period. In comparison, the workers in the financial incentive treatment increased their effort by 0.17 extra camps.

The preceding five results prove that the mission-treated workers are intrinsically motivated to perform better overall. Interestingly, the combined-treatment group showed comparable increases to the mission-alone treatment across all metrics. Such evidence speaks to the intrinsic motivation in play for the mission- and combined-treated groups.

I also combine the information from the five tasks into a multitasking index. First, I collapse the household data into a worker-level data set by calculating the mean performance for each worker on each task. If the performance was measured in multiple waves of surveys, I collapse the data at the worker–survey-wave level. This step confirms that all the data are at the same level of aggregation, as the information on immunization camps is available only at the worker level. The collapsed data for each variable at the worker–survey-wave level is standardized using the mean and standard deviation of the pure control. Missing data are imputed with the mean of the respective treatment groups. I weight each component by the inverse of the variance-covariance matrix before combining it in one mean index, as prescribed by Anderson (2008). For robustness, Appendix Table A10 uses the index constructed without weighting the data with the variance-covariance matrix, wherein each component of the index is assigned equal weight, similar to Kling et al. (2007).

The analysis using the multitasking index is reported in Column 6 of Table 3. The results present a clear picture that the mission treatment improves the performance of workers on multiple tasks by 0.175 standard deviation. Similarly, the combined treatment has an effect of 0.143 standard deviation. Both of these effects are statistically different from zero. In contrast, financial incentives alone have no effect on the multitasking index.

In the second half of the table, I test whether the coefficients on the treatment dummies are similar to each other. The effect of the financial incentive treatment is 0.18 and 0.15 standard deviations smaller than the mission and the combined treatments, respectively. These results show the difference in allocation of effort between the financial and the mission treatments. Further, the combined treatment’s effect cannot be statistically distinguished from the effect of the mission treatment, indicating that the workers in both groups are motivated in the same manner.

These results prove that workers who receive financial incentives exclusively do not exert effort on the non-incentivized tasks but those that receive the mission treatment exclusively do improve on multiple tasks. Moreover, the mission-driven performance on multitasking does not disappear when that treatment is combined with financial incentives. Given that all the groups of workers exert similar levels of overall effort, as proxied by the time spent working in a day, it follows that workers' differences in task allocation explain why the financial incentive becomes relatively less effective in the combined treatment.

[Table 3 Here]

## 6 Health Outcomes

While community health workers are considered a key link in improving maternal and child health in developing countries, the improvements in task performance I have discussed thus far do not inherently equate to changes in health outcomes within the communities these workers serve. Consequently, in this section, I study whether this study's treatments help translate to the improved health of mothers and children.

To trace the effects of this study's treatments on health outcomes, I use two sources of data. First, I rely on reports from households, as recorded in their surveys. Within these surveys, I collect information about the incidence of diarrhea and the vaccination status of the household's children under the age of two years. Second, I use administrative reports prepared by the workers as part of their routine job, I collect information on child and maternal mortality.<sup>10</sup> I combine these outcomes in an index of health outcomes using the methods outlined in Anderson (2008). I also collect child-weight data from the administrative registers to supplement the analysis.

Diarrhea is the most basic preventable disease that the community health workers can influence via teaching about both prevention—e.g., the importance of sanitation and clean drinking water—and treatment—e.g., how to make and use re-hydration solutions. Diarrhea is also the second most common reason for childhood deaths globally.<sup>11</sup> In the post-experiment survey, I asked households if any child had diarrhea-like symptoms during the

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<sup>10</sup>The plan to collect this information through an independent survey of households did not materialize due to the emergence of Covid-19. To minimize contact, I adapted the study to collect administrative records.

<sup>11</sup>According to the CDC fact sheet on Diarrhea: <https://www.cdc.gov/healthywater/pdf/global/programs/globaldiarrhea508c.pdf>, accessed on 09/03/2020.

previous four months, and I use this information to construct a dichotomous variable of the disease incidence.<sup>12</sup>

Column 1 in Table 4 reports the effects of this study’s treatments on the incidence of diarrhea in households that have at least one child. Nearly 29% of the households in the control group report children getting diarrhea in the four-month time period. However, my three treatments—mission, financial incentive, and combined treatments—lead to a substantial reduction in diarrhea, indicating that workers’ performance improved on this basic dimension through all treatments. Interestingly, as discussed later, the placebo group—who received training about health concerns but not the mission—did not see a change in health outcomes.

Next, I track if the workers’ efforts translate to increased vaccination rates. Though workers can influence vaccination camps, household vaccinations are not a direct output of the workers because vaccinations are the result of demand from parents and the supply of vaccination services from the health department. Community health workers *can* influence vaccination rates by making sure parents are educated about the need for vaccinations and by informing them of any immunization camps if they wish to vaccinate their children. I collected information about vaccination in two waves of surveys: one wave, during the survey conducted in March 2019, and the second wave, after the experiment in June 2019. During these surveys, enumerators asked households about the vaccination status of each child along with their age. Then, using guidelines from the CDC, enumerators calculated whether the child received timely vaccinations and noted the number of children who were indeed fully vaccinated per the prescribed schedule.

I use the proportion of children timely vaccinated in each household (for households with at least one child) as the main outcome in the analysis reported in Column 2 of Table 4. It appears that only the mission-emphasizing and combined treatments have a substantial effect on the proportion of timely vaccinated children. Children in these treatment groups were nearly 3 percentage points more likely to be vaccinated, whereas workers receiving just the financial incentives have a smaller effect—namely, 1.2 percentage points. These treatment effects are directly linked to workers’ multitasking performance, discussed in Section 5.

[Table 4 Here]

From the administrative registers, I extract the number of children born alive in 2019 and how many of them did not survive during the year. I also extract the number of mothers

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<sup>12</sup>It is important to note that this measure of incidence is not comparable to the data from national health surveys because I ask for information covering a longer period than what is asked in the health surveys done by statistical agencies.



who died while giving birth or due to birth-related complications during the year. The effect of this study’s treatments on child mortality appear in Column 3 of Table 4, and the effects on maternal mortality appear in Column 4. Given that both events are rare, I do not have enough statistical power to make conclusive claims about the effects. However, treatments appear to have a negative effect on the mortality rates over the year.

To confirm I am not picking up on chance effects and to better understand the relationship between the treatments and health outcomes, I combine the four measures into one summary health index. Since the data are only available for 703 of the 710 workers, I assign the average value of the treatment group to the missing data and use Anderson (2008)’s method to weight each component by the inverse of the variance-covariance matrix to create a summary index of health outcomes. For robustness, Appendix Table A10 uses the index constructed without weighting the data with the variance-covariance matrix—with each component of the index assigned equal weight, similar to Kling et al. (2007). The robustness check validates this weighted approach.

The results reported in Column 5 of Table 4 indicate that the mission treatment has a positive effect on the health of the community. Workers in the mission treatment generate a 0.205 standard deviations improvement in the composite health index. This effect is followed by the positive effect of 0.164 standard deviations achieved by the combined treatments. The financial incentive treatment also achieved an improvement of 0.12 standard deviations. However, this effect is 0.084 standard deviations smaller ( $p - value = 0.127$ ) than the improvement brought about by the workers motivated by the organizational mission. Based on these results, I can argue that this study’s treatments led to meaningful improvements in the health of communities served by workers, especially those workers motivated by the mission of the organization.

Though the weight of children (collected from administrative registers) represents another valuable metric of the treatments’ effects on health outcomes, I omitted these data from the above analysis because this information was only available for 543 workers—the remaining workers did not have functional scales to measure children’s weight. Though the availability of these data are balanced across treatments, the data show some differences in terms of gender and age across the groups (see Table A.6). Therefore, I did not include these data in the main analysis but present my findings as additional supporting evidence in the appendix.

Table A12 reports the effects on the health outcomes presented in the main Table 4 but add the children’s weight data as Column 5. This column reports the effects of the treatments on the weight of children, as measured in kilograms and after controlling for the age and gender

of children. The important takeaway from this analysis is that the coefficients on the three treatments are all positive, though only the combined treatment has a statistically significant effect on children’s weight. In Column 6, I combine the weight data in the health index. As with the main result in this section, both the mission-emphasizing and the combined treatment appear to have a much stronger effect on the health of children compared to the financial incentive treatment. In particular, the mission treatment improves health by 0.096 standard deviations ( $p - value = 0.075$ ) more than the financial incentive, and the combined treatment improves health by 0.068 standard deviations ( $p - value = 0.29$ ) over the financial incentive.

## 7 How Does the Mission Treatment Work?

In this section, I argue that the mission-emphasizing treatment intrinsically motivates workers to perform. I use two pieces of evidence to make this argument. First, workers may have preferences to work for a mission-driven organization. The mission treatment therefore activates such preferences by signaling an alignment between the preferences of workers and the organization. Second, the treatment stimulates altruistic preferences, making the worker more pro-social.

### 7.1 Alignment of Preferences

In the end-line survey, I ask workers whether they agree with statements acknowledging the mission to be central to the operations of their organization. I specifically ask them to rate on a scale of 1 to 7 (with 7 communicating “Very Strongly Agree”) how much they agree with the following statements:

1. Mission Importance: I like the LHW program more than other departments because of the importance it places on the mission.
2. Mission Alignment: I believe the LHW program’s mission is very similar to my thinking since the beginning of 2019.
3. Mission Dependent Attachment: If the LHW program’s mission was something else, I would not have been as attached to the program.

Workers’ responses to these statements help me to assess whether workers believe their preferences align with the organization.

Column 1 in Table 2 reports the effect of treatments on the index of beliefs. Workers in the mission-emphasizing and the combined-treatment groups are 0.201 and 0.23 standard deviations more likely to believe their preferences are aligned with the organization. The second part of the table compares the coefficients on treatments. The effects on workers' beliefs of the mission-emphasizing treatment and the combined treatment are different from the effect of the financial incentive treatment by 0.23 and 0.26 standard deviations, respectively. Importantly, emphasizing the mission has a similar effect on beliefs in the mission alone and combined treatments, with a difference of 0.036 standard deviation. Appendix Table A7 reports the components of this index. Mission and combined treatments have positive and large effects on all beliefs. Workers in these groups are more likely to believe their organization considers the mission to be important, to believe the mission is aligned with their own thinking, and to feel more attached to their work because of the mission. These effects do not exist for the financial incentive and placebo groups.

These results provide evidence that the workers' preferences for a mission-driven organization is one of the main channels for the mission treatment's influence over the performance of workers.

## 7.2 Altruistic Preferences

I also test if the treatment activates altruistic preferences in the workers. If so, the worker becomes more pro-social and receives utility from performing costly activities without a financial compensation.

A year after the experiment, I find workers in the mission-emphasizing and combined treatments are pro-social in their behavior towards their job. This result comes out of an experiment in April 2020 wherein I administered an incentivized activity to elicit the willingness of workers to perform an activity for different rates of compensation, following the Becker-DeGroot-Marschak mechanism. Though the activity was designed to be performed in person, I had to modify the experiment to a phone-based activity due to the Covid-19 pandemic.

During this follow-on activity, my team called workers on the phone and introduced themselves as part of the respective training and/or financial incentives program—or a survey program (for the pure control group)—the workers had participated in a year ago. The workers were asked whether they would be willing to make a list of households with pregnant women and/or children in return for some to-be-determined remuneration. Then, after confirming that the workers' response would be kept confidential, the enumerators read out

the list of incentive rates one-by-one and asked the worker to inform the research team about whether they would accept such an offer or not. To make their answers incentive-compatible, the enumerator made clear that the actual offer would to be selected randomly from their decisions. Though it was made clear to the workers that implementation depended on how the Covid-19 situation evolved,<sup>13</sup> the enumerators impressed upon the worker that their compensation decision would likely be implemented. In the menu of compensation offers, the first was Rs. 0—asking them if they would do the work for free. Responses to this offer helped us understand if the treated workers were motivated to perform the job without any monetary compensation.

Column 2 of Table 2 reports the effects of treatments on workers’ willingness to work without a payment. Workers who received the mission treatment are 10.5 percentage points more willing than the control group to perform the extra work without being paid. For comparison, the workers who received exclusively the financial incentive treatment are 5.8 percentage points *less likely* than the control group to accept the job without a compensating payment, though the effect is statistically not different from the control group. The second part of the table reports that the effects of the mission and combined treatments are different from the financial incentive treatment, though they are similar to each other.

[Table 2 Here]

These results reveals that the mission treatment makes the workers more intrinsically motivated. In combination with previous results, we find that this intrinsic motivation coincides both with workers’ beliefs that their preferences align with their organization’s and with workers’ shifts towards altruism. Further, the effect of the mission treatment on workers’ motivations is the same irrespective of whether the treatment is delivered alone or in combination with the financial incentive treatment.

## 8 Alternative Explanations for How the Mission Treatment Works

In this section, I study three alternative mechanisms for the effect of the mission treatment on worker performance. First, I explore if peer influence add to the individual motivation of workers to perform. Second, I examine if the mission treatment works purely through

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<sup>13</sup>Unfortunately, the pandemic prevented this final implementation.

conveying information about the type of tasks a worker should perform. Third, I evaluate whether it is possible that the mission provides workers with information about being monitored, thereby prompting them to work harder.

## 8.1 The Role of Peers

I explore if the mission treatment influences the behavior of workers through their peers, in addition to individually motivating them. Such a channel can work in two ways. First, workers' beliefs may change regarding what their peers care about, which in turn may change workers' expectations about their own effort. If workers do not want to appear to be behaving any differently from their peers, they may change their own behavior. Second, workers may not care about deviating from the expected effort level per-se, but they may learn from their peers what is important during the performance of their job. This learning may also stimulate effort.

[Table 5 Here]

The design of the experiment helps us untangle the additional effect of mission treatment through peers. As discussed in Section 3.1, the mission treatment was delivered in two different ways. In the first, workers received the treatment individually through one-on-one interactions with a facilitator. Under this individual treatment, I restricted the worker's knowledge about others receiving the same treatment.

Under the second treatment, workers received the treatment in a group setting, where the treatment sessions implied the organizational mission is common knowledge. Thus, I assumed the effect of the treatment on this group would be through a combination of intrinsic preferences and of the additional effect due to peers. Differencing the effect of individual treatment from public treatment would thus reveal any additional behavioral changes due to changes in expectations about peers' effort. I estimate the effect of the two modes of treatment by estimating the following equation on the full sample.

$$\begin{aligned}
 V_{ijmb} = & \beta_0 + \beta_1 * MissionPublic_{jb} + \beta_2 * MissionPrivate_{jb} \\
 & + \beta_3 * FinancialIncentive_{jb} + \beta_4 * (Mission + FinancialIncentive)_{jb} + \beta_5 * Placebo_{jb} \quad (3) \\
 & + B_{jb} + z_{jb} + M_m + \epsilon_{ijmb}
 \end{aligned}$$

In Column 1 of Table 5, I show the workers in the public and private groups have higher

reported motivation for the mission, indicating that their intrinsic preferences are activated in both groups. However, Column 2 shows workers in the private group do not believe their co-workers to be additionally motivated by the mission relative to the control.<sup>14</sup> Though the difference between the private and public group in Column 2 is not statistically different, the magnitude is large. This outcome suggests that, with a bigger sample, the difference could have been statistically significant.

Column 3 of Table 5 reports that both the public and private treatments lead to very similar effects on the performance of workers. The second part of the table reports the result of testing  $\beta_1 - \beta_2 = 0$ . I cannot reject the null hypothesis that the coefficients of private treatment (pure preference channel) and public treatment (a combination of preference and norms channel) are the same. This result suggests the mission treatment may not stimulate an additional effect via expectations about peers. While preferences can be endogenous, since the assignment to public treatments was random, I can confidently rule out peer influence as a mechanism of mission treatment.

## 8.2 Mission as Information

The second alternative explanation I test is whether the mission treatment acts as an instrument of learning and information transmission for the workers. It is possible the workers optimize their efforts on certain tasks in the status-quo based on the information they have. However, conceivably, the mission treatment alters the set of information available to the worker by highlighting duties such antenatal care and child health. Workers following this new information may re-optimize from other tasks to the performance metrics they received via the treatment.

I test for this mechanism by including a placebo treatment within the experiment. The placebo group receives the refresher training, just like the public mission treatment, but does not discuss the mission during the training. If the mission treatment works by channeling information to workers, I should see the placebo also training workers to improve their effort. Additionally, if mission works through conveying specific topics to the workers, then the workers undergoing the placebo treatment should exert more effort on the tasks related to the topics discussed in their refresher training.

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<sup>14</sup>I measure intrinsic preferences and beliefs about others through survey statements. *Mission Importance*, *Self* is captured by the agreement of workers with the statement “Mission-driven motivation is important for me.” *Mission Importance*, *Others* is captured by the agreement of workers with the statement “Mission-driven motivation is important for my co-workers.”

I do not find evidence to support this explanation. The placebo treatment does not increase household visits, as reported in Table A5, and also has no effect on the specific tasks related to mother and child health, as reported in Table 3. These results suggest that providing information is not the main channel through which the mission treatment works.

### 8.3 Monitoring

The third potential channel explaining the mission treatment’s changes in worker behavior relates to activated concerns about being monitored. Emphasizing the mission may make workers realize the manager considers their job to be important for the mission and will thus be monitoring them more to make sure everyone is performing. If this channel is activated, workers in the mission-treatment group should believe they are being monitored more than the control group. During the endline survey, I ask all workers to communicate their perception of being monitored during the last few months. I plot the mean response and confidence intervals of the responses for all treatment groups in Appendix Figure A7. There is no visible difference in the perception of workers about being monitored across treatments. Thus, I can rule out monitoring as the main channel for influencing workers undergoing the mission treatment.

## 9 Conclusion

Motivating workers is a key challenge for organizations looking to maximize productivity under resource constraints. As outlined in the introduction, many organizations strive to provide a higher purpose to their workforce to increase motivation and productivity. In fact, nearly half of the organizations surveyed in Harvard Business Review (2015) acknowledge creating and adopting strategies to deliver workers with something beyond monetary utility. Such efforts often fall under the category of devising organizational mission statements, but despite the ubiquitousness of such mission statements and despite the substantial theoretical interest in this question, no known empirical literature has demonstrated whether organizational missions actually motivate the performance of workers.

This paper provides the first such evidence from the field, to my knowledge, by showing that indeed communication about an organizational mission motivates workers. Such improved motivation yields increased productivity not only within core duties but also across multiple tasks. This finding is especially relevant to settings where performance is not easily

observable—such as within public health settings—and/or is not easily enforced through contracts. The paper also highlights the tension between using a mission to intrinsically motivate versus using financial incentives. Depending on a manager’s goals, she may opt for offering high-powered financial incentives linked to specific measurable tasks, or alternatively, emphasizing the mission to motivate workers in allocating effort to multiple tasks.

A significant number of people living in developing countries rely on the state to provide such basic services as health, education, and sanitation. While this reality makes these service providers one of the most important links in the development chain, countries have been spending significant resources on improving outcomes without similar returns on investment. Especially in the context of health-service delivery in Pakistan—where this project was implemented—improvements have been slow. Based on the results in this paper, policy-makers should consider investing in motivating workers through better organizational designs that keep the mission central to the operational strategy.

The study also opens pathways for future empirical research on intrinsic motivations of public sector workers. One immediate question to explore is how do motivated agents work in teams? While incentives in teamwork have received considerable attention in literature, one area that has eluded researchers is the area of teamwork in the public sector. With the evidence that mission motivated workers improve performance holistically on their job, the next question to examine is whether such motivations also translate to working in teams with colleagues who may or may not be as motivated.

While the experiment benefits from the unique organizational features of community health workers—who experience non-overlapping areas of responsibility—the findings here are generalizable to many settings. Firstly, many countries employ community health workers to provide outreach services. Consequently, the findings are relevant to many countries even if I limit the generalizability to only those organizations performing the exact same tasks. Secondly, these results also speak to the broader question of getting bureaucracies to perform better. Foundations of modern bureaucratic organizations, as outlined by Weber (1922), have no space for emotions, with clearly laid out rules governing the behavior of service providers. But, the nature of public service still appeals more to people who care about serving others. This study provides an example of how bureaucratic organizations can harness the intrinsic motivations of people to improve service. However, this requires the job to have a natural orientation towards a mission. How will employees respond if the organization does not have a natural mission to serve a larger purpose, is a question for future research to explore.



Table 1: **Effects on the Probability of Household Visit**

	<i>Dep Var: Household Visit = 1</i>	
	(1)	(2)
Mission	0.051*** (0.012)	0.057*** (0.011)
Financial Incentive	0.101*** (0.015)	0.097*** (0.014)
Mission and Financial Incentive	0.069*** (0.014)	0.068*** (0.013)
Placebo	0.013 (0.012)	0.013 (0.012)
Control Mean	0.353	0.353
# of Observations	21279	21279
# of Workers	710	710
Block & Wave Fixed Effects	✓	✓
Baseline Controls	-	✓
<i>Linear Combinations of Coefficients</i>		
Mission – Financial Incentive	-0.050*** [0.000]	-0.041*** [0.000]
Mission – Mission and Financial	-0.018 [0.126]	-0.011 [0.254]
Financial Incentive – Mission and Financial	0.033** [0.031]	0.029** [0.023]

*Notes:* \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . This table reports the effects of treatments on the probability of household visits using a linear probability model. It uses household-level data collected from three rounds of surveys. The first part of the table reports the coefficients on each treatment dummy. Standard errors clustered at the worker level are reported in parentheses. Results in Column (1) do not control for the baseline performance whereas Column (2) does include baseline performance as a control. Each regression uses randomization-block and survey-wave fixed effects. The second part of the table reports linear combinations of coefficients and tests them against a null of zero difference.  $p$  – values of the tests are reported in square brackets.

Table 2: **Intrinsic Motivation of Mission-Treated Workers**

	<i>Index of Mission Motivation</i>	<i>Willingness to Work for Rs. 0=1</i>
	(1)	(2)
Mission	0.201*** (0.071)	0.105* (0.059)
Financial Incentive	-0.031 (0.090)	-0.058 (0.076)
Mission and Financial Incentive	0.238*** (0.079)	0.135* (0.070)
Placebo	-0.146* (0.081)	0.012 (0.065)
Control Mean	0.000	0.614
# of Observations	705	707
# of Workers	705	707
<i>Linear Combinations of Coefficients</i>		
Mission – Financial Incentive	0.232*** [0.001]	0.163*** [0.007]
Mission – Mission and Financial	-0.036 [0.515]	-0.029 [0.578]
Financial Incentive – Mission and Financial	-0.269*** [0.001]	-0.193*** [0.007]

*Notes:* This table reports the effect of treatments on two measures of intrinsic motivations. Column 1 reports the effect of treatment on a mission-motivation index that combines workers' responses to three statements: (1) Importance: "I like the LHW program more than other departments because of the importance it places on the mission." (2) Alignment: "I believe the LHW program's mission is very similar to my thinking since the beginning of 2019." (3) Attachment: "If the LHW program's mission was something else, I would not have been as attached to the program." Column 2 depicts workers' willingness to work for Rs. 0, using the BDM method in a lab-in-the-field activity. All regressions control for randomization-block fixed effects, and standard errors are clustered at the worker level. The second panel reports differences between coefficients and tests them against a null hypothesis of zero.  $p$  – values of the tests are reported in square brackets.

Table 3: **Effects on Multitasking**

	<i>Antenatal Check = 1</i>	<i>Children Examined = 1</i>	<i>Discussed Prevention = 1</i>	<i>Tuberculosis Screening</i>	<i># of Vaccination Camps</i>	<i>Multitasking Index</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Mission	0.052** (0.022)	0.032** (0.015)	0.050* (0.029)	0.047** (0.021)	0.468* (0.269)	0.176*** (0.043)
Financial Incentive	-0.004 (0.028)	0.024 (0.017)	0.024 (0.036)	0.005 (0.023)	0.167 (0.326)	-0.009 (0.052)
Mission and Financial Incentive	0.046* (0.025)	0.027 (0.017)	0.058* (0.034)	0.044** (0.022)	0.476 (0.345)	0.143*** (0.051)
Placebo	-0.039 (0.026)	0.009 (0.016)	0.016 (0.031)	0.018 (0.022)	-0.290 (0.292)	-0.022 (0.047)
Control Mean	0.359	0.457	0.477	0.360	5.716	0.000
# of Observations	1915	3347	7100	8588	702	710
# of Workers	646	689	710	710	702	710
Condition	Pregnant	Children	-	Visit	-	-
Data Source	HH Survey	HH Survey	HH Survey	HH Survey	Worker Survey	-
<i>Linear Combinations of Coefficients</i>						
Mission – Financial Incentive	0.057*** [0.000]	0.008 [0.491]	0.026 [0.349]	0.042*** [0.006]	0.301 [0.244]	0.185*** [0.000]
Mission – Mission and Financial	0.007 [0.613]	0.004 [0.708]	-0.008 [0.767]	0.003 [0.838]	-0.008 [0.979]	0.033 [0.347]
Financial Incentive – Mission and Financial	-0.050** [0.014]	-0.003 [0.820]	-0.034 [0.309]	-0.039** [0.021]	-0.309 [0.357]	-0.152*** [0.001]

*Notes:* This table reports the effects of treatments on multitasking. The first four columns report the effects of treatment on the probability workers perform specific tasks using household-level data collected through surveys, and Columns 5 reports the effects of treatments on the number of vaccination camps using worker-level data. Each column reports the effects on the task mentioned in the column heading. Column 6 combines the data used in the first five columns into a summary index of multitasking. Each regression controls for randomization-block fixed effects. Analysis using data from multiple rounds of surveys (Columns 1, 2 and 4) also control for survey-wave fixed effects. Standard errors are clustered at the worker level and reported in parentheses. The second half of the table reports linear combinations of coefficients on the treatments and tests them against a null of zero difference.  $p$  – values of the tests are reported in square brackets.

Table 4: **Effects of Treatments on Health Outcomes**

	<i>Incidence of Diarrhea</i>	<i>Proportion Timely Vaccinated</i>	<i>Mortality Rate: Children</i>	<i>Mother</i>	<i>Health Index</i>
	(1)	(2)	(3)	(4)	(5)
Mission	-0.071** (0.035)	0.031*** (0.011)	-0.003 (0.002)	-0.001 (0.001)	0.205*** (0.051)
Financial Incentive	-0.098** (0.039)	0.012 (0.013)	-0.001 (0.003)	0.000 (0.002)	0.121* (0.068)
Mission and Financial Incentive	-0.076* (0.039)	0.029** (0.012)	-0.001 (0.003)	-0.000 (0.001)	0.164*** (0.059)
Placebo	-0.002 (0.036)	0.007 (0.011)	-0.001 (0.002)	-0.001 (0.001)	0.048 (0.054)
Control Mean	0.287	0.888	0.008	0.002	-0.000
# of Observations	2292	5136	703	703	710
# of Workers	686	710	703	703	710
Data Source	HH Survey	HH Survey	Admin	Admin	—
<i>Linear Combinations of Coefficients</i>					
Mission – Financial Incentive	0.027 [0.364]	0.019*** [0.002]	-0.002 [0.508]	-0.001 [0.343]	0.084 [0.127]
Mission – Mission and Financial	0.005 [0.855]	0.002 [0.841]	-0.002 [0.416]	-0.001 [0.503]	0.041 [0.347]
Financial Incentive – Mission and Financial	-0.021 [0.530]	-0.018 [0.102]	0.000 [0.989]	0.001 [0.699]	-0.043 [0.489]

*Notes:* \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . This table reports the effects of treatments on the health outcomes mentioned in the column headers, using household and administrative data. Columns 1 and 2 use survey data collected during the experiment to study the effects on households reporting diarrhea and the proportion of children vaccinated, respectively. Columns 3 and 4 use administrative data collected one year after the experiment to report the effects of treatments on child and mother mortality. Column 5 is an index of the first four columns. Each regression controls for randomization-block fixed effects and Column 2 also uses survey-round fixed effects as the information was collected in multiple rounds. Standard errors are clustered at the worker level and reported in parentheses. The second half of the table reports linear combinations of coefficients on the treatments and tests them against a null hypothesis of zero difference.  $p$  – values of the tests are reported in square brackets.

Table 5: **Peer Influence**

	<i>Mission Importance:</i>		<i>Household</i>
	<i>Self</i>	<i>Others</i>	<i>Visit = 1</i>
	(1)	(2)	(3)
Individual Treatment	0.324** (0.130)	0.144 (0.131)	0.054*** (0.013)
Group Treatment	0.258** (0.120)	0.215* (0.125)	0.058*** (0.011)
Control Mean	0.000	-0.000	0.353
# of Households	701	700	21279
# of Clusters	701	700	710
Data Source	Worker Survey	Worker Survey	HH Survey
Baseline Control	-	-	✓
<i>Linear Combination of Coefficients</i>			
Group - Individual Treatment	-0.065 [0.469]	0.071 [0.497]	0.004 [0.702]

*Notes:* \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . This table reports the effects of mission treatment's sub-treatments. Columns 1 and 2 use data from the endline survey of workers to test whether workers' stated beliefs about the importance of the mission to themselves and their beliefs about their co-workers are affected by the treatment's mode of delivery. *Mission Importance, Self* is captured by whether the workers agree with the statement "Mission-driven motivation is important to me." *Mission Importance, Others* is captured by whether workers agree with the statement "Mission-driven motivation is important to my co-workers." Column 3 uses household-survey data to test whether public delivery of the mission training had any positive effect on worker performance beyond the effect of the workers' intrinsic preferences, captured by the privately delivered treatment. The first half of the table reports selected coefficients from a full regression, as per Equation 3. The regressions control for randomization-block fixed effects. Column 3 also controls for the survey-wave fixed effects and baseline performance. Standard errors clustered at the worker level are reported in parentheses. The second half of the table reports the linear combination of the coefficients and tests them against a null hypothesis of zero difference. The  $p$ -value of the tests are reported in square brackets.

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Figure A1: Design of the Experiment

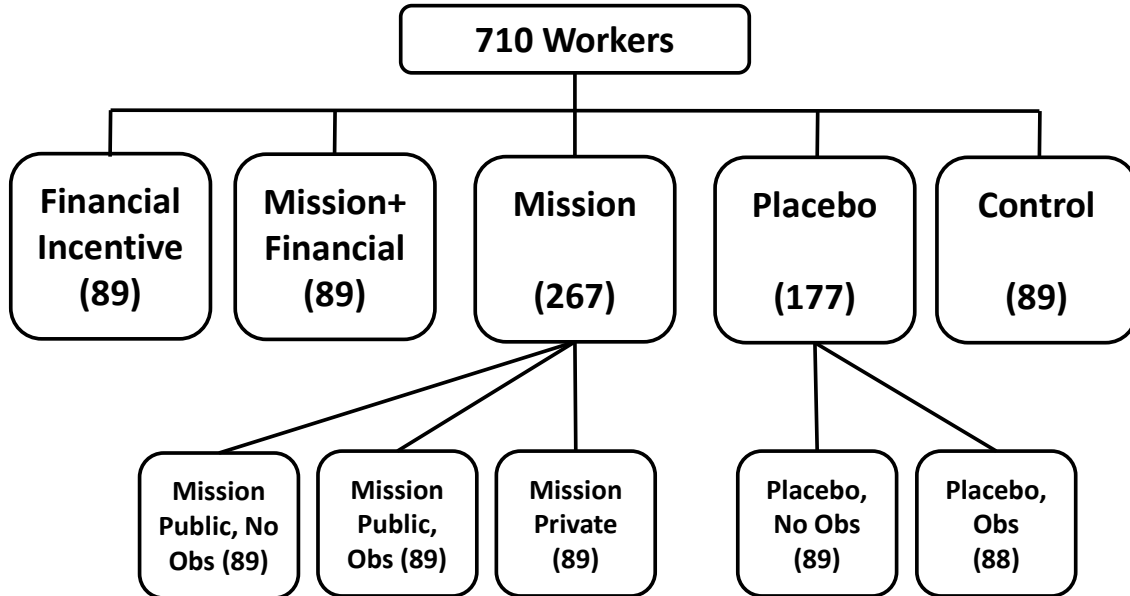


Figure A2: **Timeline**

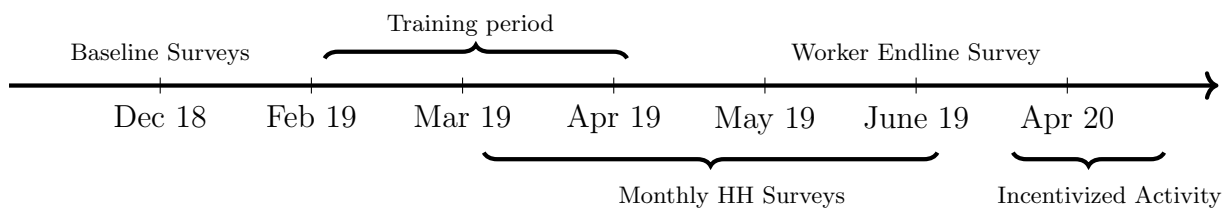


Table A1: **Balance Table: Pooled Treatments**

	<i>Total HH Assigned</i>	<i>No. of Preg. Women per HH</i>	<i>No. of Child. Under two per HH</i>	<i>LHW Visit</i>	<i>Distance in mins</i>
A. Control	155.625 (3.833)	0.276 (0.020)	0.516 (0.031)	0.385 (0.023)	15.963 (0.611)
B. Mission	156.936 (2.097)	0.275 (0.011)	0.484 (0.019)	0.353 (0.013)	16.306 (0.400)
C. Financial Incentive	156.213 (3.716)	0.284 (0.020)	0.565 (0.039)	0.391 (0.022)	16.691 (0.599)
D. Mission+Financial Incentive	155.438 (3.832)	0.299 (0.019)	0.508 (0.035)	0.382 (0.024)	16.002 (0.543)
E. Placebo	154.819 (2.605)	0.288 (0.015)	0.513 (0.024)	0.374 (0.015)	16.268 (0.411)
⋮ Hypothesis tests Joint orthogonality p-value	0.98	0.84	0.44	0.48	0.91
A-B =0	0.76	0.96	0.38	0.22	0.64
A-C=0	0.91	0.77	0.32	0.86	0.39
A-D=0	0.97	0.41	0.87	0.93	0.96
A-E=0	0.86	0.63	0.94	0.69	0.68
# of Households	7099	7099	7099	7099	7099
# of Workers	710	710	710	710	710

*Notes:* Standard Errors clustered at the worker level.

Table A2: **Balance Table: Disaggregated Treatments**

	<i>Total HH Assigned</i>	<i>No. of Preg. Women per HH</i>	<i>No. of Child. Under two per HH</i>	<i>LHW Visit</i>	<i>Distance in mins</i>
A. Control	155.625 (3.833)	0.276 (0.020)	0.516 (0.031)	0.385 (0.023)	15.963 (0.611)
B. Group Mission	154.326 (3.559)	0.281 (0.018)	0.493 (0.032)	0.361 (0.022)	16.275 (0.459)
C. Group Mission + Observability	157.966 (3.697)	0.280 (0.022)	0.484 (0.032)	0.354 (0.021)	16.269 (0.828)
D. Private Mission	158.517 (3.624)	0.264 (0.019)	0.474 (0.036)	0.344 (0.023)	16.373 (0.740)
E. Group Mission + Financial Incentive	155.438 (3.833)	0.299 (0.019)	0.508 (0.035)	0.382 (0.024)	16.002 (0.543)
F. Financial Incentive	156.213 (3.716)	0.284 (0.020)	0.565 (0.039)	0.391 (0.022)	16.691 (0.599)
G. Socialization	153.303 (3.707)	0.298 (0.021)	0.492 (0.032)	0.394 (0.023)	16.416 (0.616)
H. Socialization + Observability	156.352 (3.656)	0.278 (0.020)	0.534 (0.036)	0.353 (0.018)	16.119 (0.544)
Hypothesis tests Joint orthogonality p-value	0.98	0.94	0.71	0.59	0.99
A-B =0	0.80	0.86	0.61	0.45	0.68
A-C=0	0.66	0.90	0.48	0.32	0.77
A-D=0	0.58	0.66	0.37	0.21	0.67
A-E=0	0.97	0.41	0.87	0.93	0.96
A-F=0	0.91	0.77	0.32	0.86	0.39
A-G=0	0.66	0.46	0.59	0.78	0.60
A-H=0	0.89	0.94	0.70	0.29	0.85
# of Households	7099	7099	7099	7099	7099
# of Workers	710	710	710	710	710

Notes: Standard Errors clustered at the worker level.

Table A3: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
# of Households in Community	155.97	34.913	68	232	710
Years of Schooling	10.034	2.405	5	18	707
Healthcare Certificate	0.38	0.486	0	1	707
Tenure in Years	15.299	5.458	1	27	575
Proportion of HHs visited	0.371	0.21	0	1	710
Proportion of HHs with Pregnant Women	0.26	0.17	0	0.9	710
Proportion of HHs with Children	0.397	0.221	0	0.9	710

Table A4: **Balance Table: Individual Characteristics**

	<i>Years of Schooling</i>	<i>Health Diploma</i>	<i>Tenure in Years</i>	<i>PSM Score</i>	<i>IQ Score</i>
A. Control	10.253 (0.246)	0.352 (0.051)	16.000 (0.664)	3.664 (0.068)	0.602 (0.021)
B. Mission	10.007 (0.146)	0.376 (0.030)	15.624 (0.359)	3.659 (0.036)	0.575 (0.014)
C. Financial Incentive	10.273 (0.267)	0.466 (0.053)	13.746 (0.689)	3.595 (0.068)	0.579 (0.021)
D. Mission+Financial Incentive	9.795 (0.222)	0.398 (0.052)	15.870 (0.639)	3.631 (0.067)	0.546 (0.024)
E. Placebo	9.966 (0.194)	0.350 (0.036)	14.966 (0.449)	3.563 (0.049)	0.548 (0.016)
Hypothesis tests					
Joint orthogonality p-value	0.58	0.45	0.08	0.56	0.25
A-B =0	0.39	0.69	0.62	0.94	0.29
A-C=0	0.96	0.12	0.02	0.47	0.46
A-D=0	0.17	0.53	0.89	0.73	0.08
A-E=0	0.36	0.97	0.20	0.23	0.04
# of Households	707	707	575	709	710
# of Workers	707	707	575	709	710

*Notes:* Standard Errors clustered at the worker level.



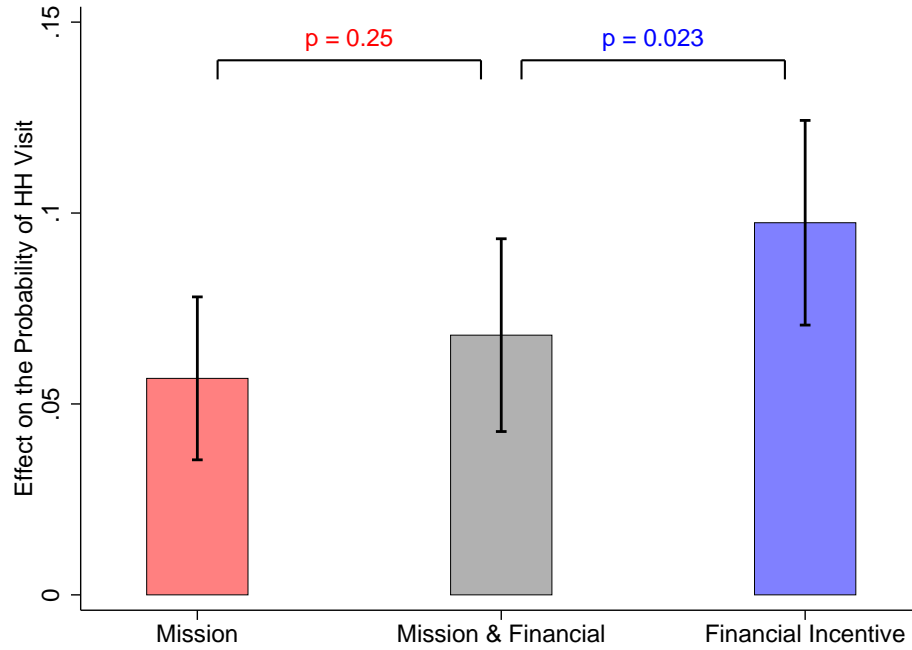
Figure A3: Training Activities



Figure A4: Survey Activities



Figure A5: Effects of Treatments on Household Visits



## A Additional Results and Tables

### A.1 Alternative Explanations for the Effect of Mission Treatment

I have established that introducing a pro-social mission to workers of a public sector organization motivates them to improve their performance. However, it is possible that the reason for improved performance is not the mission itself but something else that also changed for the treatment workers.

The main alternative explanation for why mission may work, may relate to the way the main treatment was delivered. The treatment brings workers together in groups, and the workers also interact consistently over three months with a facilitator. The group setting may result in more social interaction between workers (Feigenberg et al. 2013) and interaction with a facilitator may create goodwill towards the organization. Thus workers can become more inclined towards their duties by virtue of having more goodwill towards the organization and its people.

I test for this alternative explanations by including in the design of the experiment a placebo treatment. As discussed in section 3.1, the study includes a treatment group that receives

Table A5: **Alternative Explanations for Mission**

	<i>Dep Var: Household Visit = 1</i>	
	(1)	(2)
Mission	0.051*** (0.012)	0.057*** (0.011)
Placebo	0.013 (0.012)	0.013 (0.012)
Control Mean	0.353	0.353
# of Observations	21279	21279
# of Workers	710	710
Block & Wave Fixed Effects	✓	✓
Baseline Controls	-	✓
<i>Linear Combinations of Coefficients</i>		
Mission – Placebo	0.038 [0.000]	0.044 [0.000]

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

the refresher training just like the public mission treatment but does not discuss the mission or shows the video of DHO. This treatment group is similar to the public mission group in terms of receiving refresher training and socializing with other workers. If these alternate reasons were behind the change in performance of workers I should see no difference between the placebo treatment and the mission treatment.

The second row in Table A5 reports coefficients of placebo treatments in the regressions. It is clear that the observed effects of the mission are not driven by these alternate explanations, otherwise I would have seen similar magnitudes between the mission and the placebo treatments. I formally test for the difference between the mission and placebo treatments in second part of the table. I can comfortably reject the null hypothesis that the effect of the mission is driven entirely but these alternative explanations.

## A.2 Decay of the Mission Motivation

In this section, I show that the effect of the mission treatment does not disappear immediately after the experiment has ended – it decays at a much slower rate compared to the effect of the financial incentives. To study the decay, the health department announces to workers

at the end of the three months that the project is ending; the workers will not be meeting again to discuss the organizational mission, and that they will also not receive any financial incentive based on their performance. However, I still tracked their performance through a survey of households to see if they continued their improved effort. This can be considered a strong test of sustainability because the treatment was not stopped quietly, instead it was done with clear announcements.

Table A6 shows the effect of the treatments on the probability of a household visit after the experiment ended. Workers who received the mission continued to serve their communities with a higher effort post experiment. Column 1 reports the probability of a household visit in the mission treatment group was 3.7 percentage points higher than the pure control group. The effect of financial incentive, not surprisingly, went down significantly from 9.8 percentage points (as reported in Table 1) to 1.2 percentage points, which can not be statistically distinguished from zero. The effect of combined treatment is also not statistically distinguishable from control but the point estimate is bigger than the financial incentives.

In order to better understand the difference in persistence of the treatment effects, I report difference-in-difference estimates in Column 2, using the experimental period as the baseline. This helps in directly comparing the rates of decay across treatments. The effect of mission treatment decays at a slow rate of 1.3 percentage points but the effect of financial incentives decays at a rate of 9.2 percentage points. When combined the rate is 3.9, which is smaller than the financial incentives rate but larger than the effect of just the mission treatment. The results confirm that the mission treatment led to a change in the worker performance that is more lasting than the effect of just the financial incentives.

Table A6: Persistence and Decay in the Effects

Dep. Variable	<i>Post-Experiment: Household Visit =1</i>	
	(1)	(2)
Mission	0.034* (0.020)	-0.013 (0.022)
Financial Incentive	0.011 (0.026)	-0.092*** (0.028)
Mission and Financial Incentive	0.027 (0.025)	-0.039 (0.028)
Control Mean	0.299	0.299
# of Observations	710	1420
# of Workers	710	710
Baseline Controls	✓	-
Model	AR(1)	DiD w. Exp Period
<i>Linear Combinations of Coefficients [p-Value]</i>		
Mission – Financial Incentive	0.024 [0.258]	0.079*** [0.001]
Financial Incentive – Mission and Financial	-0.016 [0.545]	-0.053* [0.062]

*Notes:* \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . This table uses household data to study the persistence of effects and the rate of decay. Column 1 reports the effects of treatments on the probability of household visits post-experiment. Column 2 reports the rate of decay in the effect of household visits post-experiment using experimental period as the baseline in a difference-in-difference estimation. Standard errors clustered at the worker level are reported in parentheses. Second part of the table reports linear combinations of coefficients and test them against a null of zero difference.  $p$  – values of the tests are reported in square brackets.

Table A7: **Beliefs About the Role of Mission in the Organization**

	Index of Beliefs (1)	Importance (2)	Mission Alignment (3)	Attachment (4)
Mission	0.201*** (0.071)	0.216* (0.115)	0.174* (0.104)	0.215* (0.110)
Financial Incentive	-0.031 (0.090)	0.045 (0.139)	-0.160 (0.143)	0.024 (0.141)
Mission and Financial Incentive	0.238*** (0.079)	0.252** (0.127)	0.218* (0.119)	0.244** (0.118)
Placebo	-0.146* (0.081)	-0.092 (0.129)	-0.302** (0.126)	-0.043 (0.123)
Control Mean	0.000	0.000	0.000	0.000
# of Observations	705	705	705	705
# of Workers	705	705	705	705
<i>Linear Combinations of Coefficients</i>				
Mission – Financial Incentive	0.232*** [0.001]	0.170* [0.099]	0.334*** [0.004]	0.191* [0.083]
Mission – Mission and Financial	-0.036 [0.515]	-0.036 [0.674]	-0.044 [0.584]	-0.028 [0.714]
Financial Incentive – Mission and Financial	-0.269*** [0.001]	-0.207* [0.078]	-0.378*** [0.003]	-0.220* [0.063]

*Notes:* \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . This table reports the effects of treatments on standardized stated beliefs regarding organizational mission. Index of beliefs is a composite index of workers' agreement with three statements on a scale of 1 to 7. (1) Importance: I like the LHW program more than other departments because of the importance it places on the mission. (2) Alignment: I believe the LHW program mission is very similar to my thinking since the beginning of 2019. (3) Attachment: If the LHW program mission was something else, I would not have been as attached to the program. Regressions controls for randomization blocks. First half the table reports the coefficients on each treatment. The regressions control for randomization block fixed effects. Standard errors clustered at the worker level are reported in parentheses. Second part of the table reports linear combinations of coefficients and test them against a null of zero difference.  $p$  – values of the tests are reported in square brackets.

### A.3 Time Spent by Workers

One aspect of multitasking that I see in the data is that the improvement in performance on the household visits does not come at the expense of other tasks that are measured. It is possible that there is a cost in terms of some other tasks that I are not measuring. To investigate this I collect data on the time spent in each visit from the households, and ask

the workers in the endline survey what time they start and end their day in the community to measure the total effort proxied by the time spent on the job. Appendix Table A8 shows the results from analysis of time spent on the job.

In column 1, I find there is no negative effect on the time spent in each household, which is reassuring that the improvement in performance as measured by more visits does not come at the expense of quality of the visit proxied by time spent in each visit.

Table A8: **Effects on Effort Proxied by Time**

	Minutes Spent:	
	<i>Total Work-Day</i>	<i>On a Visit</i>
	(1)	(2)
Mission	16.857*** (5.870)	0.185 (0.549)
Financial Incentive	15.241* (8.000)	0.661 (0.656)
Mission and Financial Incentive	15.097** (7.526)	0.296 (0.693)
Placebo	4.145 (6.276)	0.423 (0.573)
Control Mean	318.409	18.398
# of Observations	705	5612
# of Workers	705	703
Data Source	Worker Survey	HH Survey
<i>Linear Combinations of Coefficients</i>		
Mission – Financial Incentive	1.616 [0.824]	-0.476 [0.364]
Mission – Mission and Financial	1.760 [0.793]	-0.111 [0.847]
Financial Incentive – Mission and Financial	0.144 [0.987]	0.366 [0.588]

*Notes:* \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . This table reports the effects of treatments on time spent in a household during a visit (column 1) and overall time spent on the job during a given day (column 2). Each regression uses block fixed effects and standard errors are reported in parentheses. Second part of the table reports linear combinations of co-efficients and test them against a null of zero difference.  $p$  – values of the tests are reported in brackets.

## A.4 Effects on the Acceptance of Offers for Additional Work

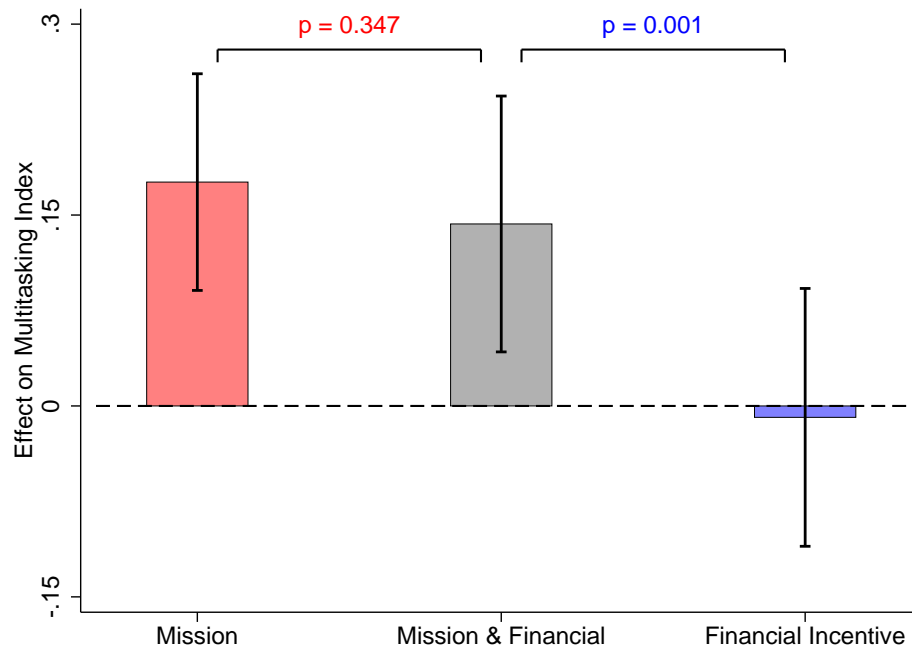
Table A9: **Effects of Treatment on Acceptance of Offers**

	<i>Accept to Work = 1</i>			
	<i>Rs. 0</i>	<i>Rs. 50</i>	<i>Rs. 100</i>	<i>Rs. 200</i>
	(1)	(2)	(3)	(4)
Mission	0.105* (0.059)	0.008 (0.061)	0.007 (0.062)	-0.001 (0.063)
Financial Incentive	-0.058 (0.076)	-0.018 (0.075)	0.020 (0.076)	0.010 (0.076)
Mission and Financial Incentive	0.135* (0.070)	0.001 (0.074)	0.010 (0.076)	0.019 (0.077)
Placebo	0.012 (0.065)	-0.015 (0.066)	0.010 (0.067)	0.028 (0.067)
Control Mean	0.614	0.466	0.545	0.557
# of Observations	707	707	707	707
# of Workers	707	707	707	707
Block Fixed Effects	✓	✓	✓	✓
<i>Linear Combinations of Coefficients</i>				
Mission – Financial Incentive	0.163 [0.007]	0.026 [0.678]	-0.013 [0.834]	-0.011 [0.856]
Mission – Mission and Financial	-0.029 [0.578]	0.007 [0.911]	-0.003 [0.959]	-0.020 [0.741]
Financial Incentive – Mission and Financial	-0.193 [0.007]	-0.019 [0.799]	0.010 [0.898]	-0.009 [0.901]

*Notes:* \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . This table reports the effects of treatments on accepting to work for various offers on an activity one year after the experiment. The dependent variable in each regression takes the value 1 if the worker accepts the offer mentioned in the column heading. Each regression uses block fixed effects and standard errors are reported in parentheses. Second part of the table reports linear combinations of coefficients and test them against a null of zero difference.  $p$  – values of the tests are reported in brackets.



Figure A6: Effects of Treatments on Multitasking Index



## A.5 Additional Tables Multitasking

## A.6 Additional Analysis on Health Outcomes

Table A10: Health and Multitasking Indices Using Equal Weights

	<i>Multitasking Index (1)</i>	<i>Health Index (2)</i>
Mission	0.183*** (0.043)	0.201*** (0.052)
Financial Incentive	-0.036 (0.053)	0.112 (0.072)
Mission and Financial Incentive	0.141*** (0.050)	0.155** (0.060)
Placebo	-0.039 (0.047)	0.055 (0.054)
Control Mean	-0.000	-0.000
# of Observations	710	710
# of Workers	710	710
<i>Linear Combinations of Coefficients</i>		
Mission – Financial Incentive	0.219 [0.000]	0.089 [0.133]
Mission – Mission and Financial	0.042 [0.224]	0.046 [0.316]
Financial Incentive – Mission and Financial	-0.177 [0.000]	-0.043 [0.515]

*Notes:* The table reports indices of multitasking and health outcomes that are created using equally weighted data following Kling et al. (2007). All regressions control for randomization block fixed effects and standard errors are clustered at the worker level. Second half of the table reports differences between coefficients and tests them against a null hypothesis of no difference.  $p$  – values of the tests are reported in square brackets.

Table A11: Balance of Children Weight Data

	Weight Data Not Available = 1 (1)	Gender Boy = 1 (2)	Age in Months (3)
Mission	0.228 (0.026)	0.451 (0.015)	16.093 (0.396)
Financial Incentive	0.236 (0.045)	0.475 (0.025)	15.000 (0.644)
Mission and Financial Incentive	0.270 (0.047)	0.438 (0.026)	15.414 (0.574)
Placebo	0.209 (0.031)	0.400 (0.018)	15.329 (0.422)
Pure Control	0.239 (0.046)	0.439 (0.023)	15.776 (0.513)
<i>p-value of hypotheses</i>			
Joint orthogonality p-value	0.873	0.120	0.551
Mission – Control = 0	0.846	0.673	0.625
Financial – Control = 0	0.967	0.302	0.347
Mission and Financial – Control = 0	0.637	0.974	0.638
Placebo – Control = 0	0.590	0.175	0.502
# of Observations	710	2708	2708
# of Workers	710	542	542

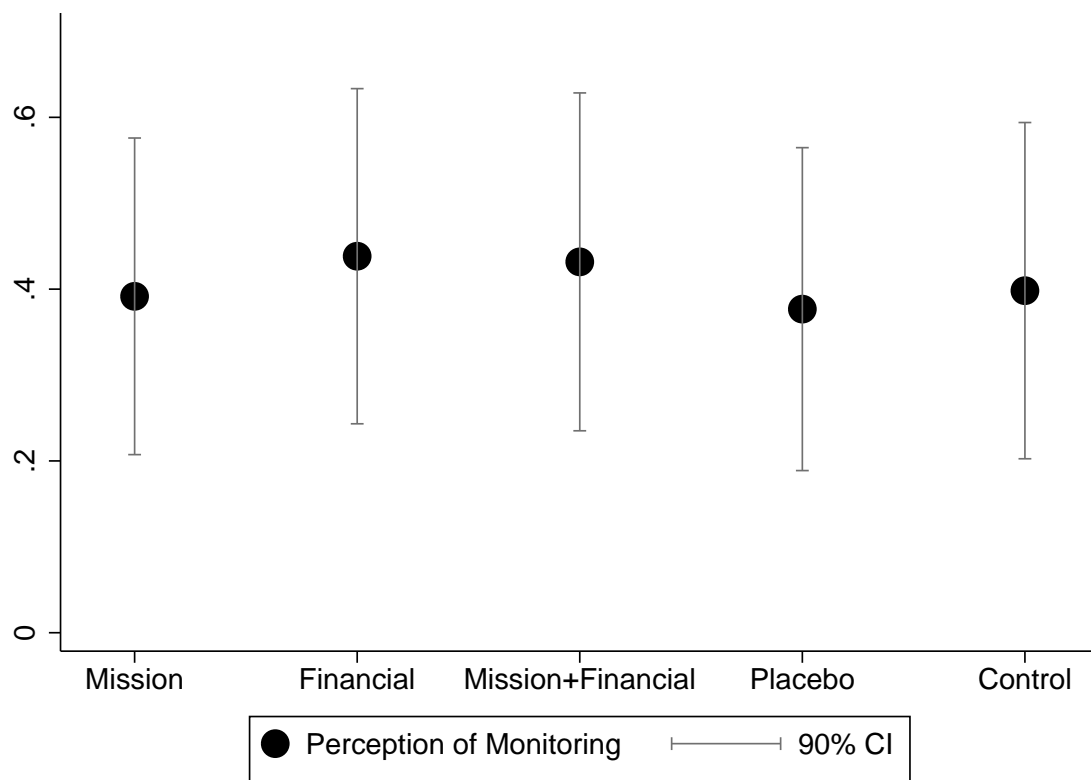
*Notes:* This table reports the balance on availability, age and gender of the child weight data.

Table A12: Effects of Treatments on Health Outcomes

	<i>Incidence of Diarrhea</i>	<i>Proportion Timely Vaccinated</i>	<i>Mortality Rate: Children Mother</i>		<i>Weight of Children (Kg)</i>	<i>Health Index</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Mission	-0.071** (0.035)	0.031*** (0.011)	-0.003 (0.002)	-0.001 (0.001)	0.116 (0.136)	0.187*** (0.048)
Financial Incentive	-0.098** (0.039)	0.012 (0.013)	-0.001 (0.003)	0.000 (0.002)	0.188 (0.151)	0.089 (0.069)
Mission and Financial Incentive	-0.076* (0.039)	0.029** (0.012)	-0.001 (0.003)	-0.000 (0.001)	0.306* (0.164)	0.157*** (0.058)
Placebo	-0.002 (0.036)	0.007 (0.011)	-0.001 (0.002)	-0.001 (0.001)	-0.026 (0.144)	0.053 (0.052)
Control Mean	0.287	0.888	0.008	0.002	10.648	-0.000
# of Observations	2292	5136	703	703	2711	542
# of Workers	686	710	703	703	543	542
Data Source	HH Survey	HH Survey	Admin	Admin	Admin	—
<i>Linear Combinations of Coefficients</i>						
Mission – Financial Incentive	0.027 [0.364]	0.019*** [0.002]	-0.002 [0.508]	-0.001 [0.343]	-0.073 [0.529]	0.098* [0.075]
Mission – Mission and Financial	0.005 [0.855]	0.002 [0.841]	-0.002 [0.416]	-0.001 [0.503]	-0.190 [0.152]	0.030 [0.489]
Financial Incentive – Mission and Financial	-0.021 [0.530]	-0.018 [0.102]	0.000 [0.989]	0.001 [0.699]	-0.117 [0.431]	-0.068 [0.294]

*Notes:* \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . This table reports the effects of treatments on health outcomes mention in the column headers with addition of the analysis on child weight, using household and administrative data. Columns 1 and 2 use survey data collected during the experiment. Columns 3, 4 and 5 use administrative data collected one year after the experiment. Column 6 is an index of the first 5 columns. Each regression controls for randomization block fixed effects and column 2 also uses survey round fixed effects as the information was collected in multiple rounds. The analysis data also controls for age and gender of the children for whom the weight data is reported. Standard errors are clustered at the worker level and reported in parentheses. The second half of the table reports linear combinations of coefficients on the treatments and tests them against a null of zero difference.  $p$  – values of the tests are reported in square brackets.

Figure A7: **Perception of Workers About Being Monitored**



*Notes:* This figure plots the mean perception of being monitored reported by workers in different treatment groups using data from worker survey.

## B Who Responds to the Treatments?

In this section, I explore heterogeneous responses to treatments based on time-invariant characteristics of workers recorded before the launch of this experiment. The main question explored in this section is how high ability workers and those with higher public service motivation respond differently to the mission and financial treatments. I use baseline performance and Raven’s IQ to proxy for ability of workers, and use Perry (1996) to measure their motivation for public service. The discussion in this section is suggestive due limited statistical power.

**Ability:** Workers can have different levels of abilities related to their jobs. I do not have a single good measure to help discern high ability workers from the low ability ones. But I do know their baseline performance in terms of household visits that can help us identify which workers perform better than others in a status-quo environment. Further, I have a proxy of their inherent “intelligence” measured through Raven’s IQ test.<sup>15</sup> Using these two measures, I study how workers respond differentially to the mission and financial treatments given their baseline abilities.

I create a dummy variable that takes value of one if the baseline performance of a worker is higher than the median value of performance in the control group before the experiment. Column 1 in table A13 reports the heterogeneous response of such high performing workers to the three main treatments. High performers do not appear to be differentially responding to the mission treatments, whether delivered alone or in combination with the financial incentive. It is important to note that, the coefficients on these two treatments are almost zero. However, they do respond to standalone financial incentive very strongly. If the baseline performance measures ability, then higher ability workers appear to care more for financial incentives compared to low ability ones. Column 2 uses score on Raven’s IQ test to explore the response of high IQ workers to the treatments. Again, I decide on high IQ individuals as those with score higher than the median worker in the control group. The effects are statistically insignificant but the signs on coefficients support the result in column 1. The coefficient on financial incentive is positive and the magnitude is different from zero, through insignificant due to lower power.

On the selection margin several studies have explicitly identified that high ability workers are more likely to be attracted to public sector jobs if there are stronger financial incentives

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<sup>15</sup>I acknowledge the limitations of this test given that it was not developed for a Pakistani context.

directly (or indirectly through career progression) linked to the job (Dal Bó et al. 2013; Ashraf et al. 2018). The result on ability in this section show that it may also be true for the performance of workers who have already selected to work for the government.

**Public Service Motivation:** I measure public service motivation of workers using an abridged version of Perry (1996) based on Callen et al. (2018) in the baseline survey. Using median of the control group, I construct a categorical variable taking value 1 if the PSM score of a worker is above the median. Column 3 in table A13 reports the heterogeneous effects of treatments based on high PSM on the probability of a household visit. I cannot definitely discern if there are differential effects of treatments based on high PSM because none of the effects are statistically significant. The coefficients are not small in magnitude and with a bigger sample, I would be powered to statistically distinguish them from zero. But to the extent the signs on the coefficients are indicative of the behavior, it appears that workers with high public service motivation react negatively to the introduction of financial incentive. This directional effect appears to be driven purely by the signaling value of financial incentives as it does not appear for the workers receiving both mission and financial incentive treatment. Again the suggestive direction of result here is in line with the effects observed in selection studies that show that financial incentive may serve as a negative signal for motivated workers to join a public service organization (Deserranno 2019).

Table A13: **Who Responds to the Treatments**

	<i>Dependent Var: Household Visit = 1</i>		
	(1)	(2)	(3)
Mission	0.058*** (0.013)	0.061*** (0.014)	0.042*** (0.015)
Financial Incentive	0.083*** (0.016)	0.090*** (0.020)	0.114*** (0.020)
Mission and Financial Incentive	0.068*** (0.016)	0.067*** (0.019)	0.055*** (0.020)
High Baseline Performance	0.086*** (0.020)		
Mission X High Baseline Performance	0.004 (0.024)		
Financial Incentive X High Baseline Performance	0.055** (0.028)		
Mission and Financial Incentive X High Baseline Performance	0.006 (0.028)		
IQ		-0.004 (0.022)	
Mission X IQ		-0.027 (0.025)	
Financial Incentive X IQ		0.027 (0.032)	
Mission and Financial Incentive X IQ		0.004 (0.029)	
Public Service Motivation (PSM)			0.003 (0.021)
Mission X PSM			0.019 (0.024)
Financial Incentive X PSM			-0.033 (0.031)
Mission and Financial Incentive X PSM			0.027 (0.029)
Control Mean			
# of Observations	21279	21279	21279
# of Workers	710	710	710
Block & Wave Fixed Effects	✓	✓	✓

*Notes:* This table reports the heterogeneous effect to treatments based on their characteristics. Regressions control for randomization block and survey wave fixed effects and standard errors are clustered at the worker level.