Power to the Personnel? The Impacts of Managerial Discretion vs. Worker Democracy in Employee Recognition*

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Abstract

Worker agency – workers' influence over organizational decisions – is a commonly-cited determinant of employee engagement, productivity, and organizational culture. We conducted a firm-level RCT in India, randomizing whether employee recognition was determined: based on a worker vote (agency treatment), at the discretion of the manager (managerial discretion treatment), or at random and unrelated to performance (control). We find that workplace democracy increases worker attendance, but managerial discretion improves productivity. There are also implications for firm culture and knowledge spillovers, with the manager arm reducing work-related discussions between workers. Winners in the manager arm are positively selected on attendance and productivity, while those in the democracy arm are positively selected on attendance, social interactions, and likelihood of sharing the reward with co-workers in exchange for votes. These results highlight how what is valued in the workplace impacts worker behavior and firm culture, as well as the potential for informal contracts and collusion among workers to interact with workplace incentives.

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1 Introduction

Agency in the workplace – influence over organizational decisions – is increasingly viewed as important for organizational performance. Firms have begun to increase the level of agency given to workers in a variety of ways, ranging from mechanisms for worker input into performance evaluations (e.g., 360-degree feedback, peer reviews, or nominations for employee recognition) to worker representation on firm boards and voting rights over specific firm decisions.[1] Employers also view employee agency as critical for productivity, with over 80% of employers in a recent survey identifying increasing agency as important for organizational success (Deloitte, 2023). Similarly, when incentivized to choose how an upcoming worker bonus would be allocated, 80% of managers in our control group preferred that it be determined by workers' vote rather than at the managers' own discretion.

While initiatives to give workers agency are becoming common, it is conceptually ambiguous what their effects might be. Agency could improve worker engagement, productivity, and firm culture by making workers feel heard, enabling them to build a culture they value, leveraging their information about one another, or alleviating biases – real or perceived – of managers. On the other hand, workers' incentives are unlikely to be aligned with those of the firm; what workers reward may not maximize profit, and could even be unrelated to or counterproductive for profit, for instance, if voting devolves into a popularity contest or if workers reward peers who will share benefits with them rather than generate surplus for the firm. Since giving workers agency could be costly for the firm and is potentially difficult to reverse, understanding the returns to such practices is highly policy-relevant.

In this paper, we conduct a firm-level RCT in India to study the impacts of increased worker agency, relative to increased managerial discretion, on worker attendance, productivity, and firm culture. The key decision for which these decision rights are allocated were which employees to reward recognition to. Employee recognition programs – which recognize workers for behaviors valued by their organizations, often providing rewards with monetary value – are very common (WorldatWork, 2019) yet difficult to evaluate given the endogeneity of adopting such programs. Our results provide evidence on the effects of such programs in addition to answering our main research question around the effects of worker agency versus managerial discretion.

We partnered with Obeetee Ltd., India's largest carpet manufacturer. Obeetee outsources production of hand-knotted carpets to many smaller firms, each located in a village and each employing 10-20 workers. Obeetee provides the supplier firms with the designs and raw

[1]For instance, the Mondragon Corporation in Spain decides key compensation outcomes through worker voting, and in Semco, a Brazilian manufacturing firm, workers vote on several strategic and compensation-related decisions.

materials to make carpets, and pays the firms for the carpets upon completion. Workers are paid based on the number of knots they weave and complexity of the carpet, though the details of the compensation system and other management practices are at the discretion of each firm.

We introduced an employee recognition program in 125 of these firms. The recognition program involved giving individual workers monetary rewards, with winners announced in small ceremonies within their firms. Rewards were given every two weeks for 12 weeks. The reward amount was 10% of the average baseline monthly earnings in the firm. To be eligible, workers needed to be present at least one third of the working days in the two-week cycle – as verified through attendance checks done by surveyors – and one reward was given for every 10 eligible workers in each firm per cycle.

Our randomization varied only how the rewards were allocated. In the first arm, rewards were allocated based on a vote of the workers, with each eligible worker casting a vote in private for one other eligible worker, and the rewards being allocated to those with the most votes. In the second arm, the rewards were allocated at the discretion of the managers. This arm is a natural comparison for the worker arm, both because it is closest to status quo, a policy-relevant counterfactual, and isolates the effect of worker versus manager control. That said, we were also interested in estimating the impacts of managerial discretion itself and hence we had a third, control arm where rewards were allocated through a public lottery. Providing rewards in this arm allows us to control for income effects, and provides a policy-relevant comparison for the other two arms, asking whether firms could achieve the same results by giving the same amount in rewards but at random and without concern for worker performance.

Our main outcomes are from observations surveyors made on daily visits to each firm during the 12-week reward period. During these "spot checks," surveyors recorded which workers were present and what they were working on; this allows us to estimate impacts on attendance and productivity, where productivity is defined as knots woven per day adjusted for carpet complexity. Surveyors also recorded the workplace interactions they observed – both whether workers were conversing and what about – which provides novel and objective measures of firm culture. We also conducted two waves of endline surveys, one just before the recognition program ended and the second about seven weeks later, which provide a number of supplementary outcomes.

We begin by considering effects of the allocation mechanisms on worker attendance and productivity. The worker agency treatment increased attendance, raising the likelihood that a worker attended on a given day by 5.3 percentage points (p.p.), an 11% increase relative to the control group and to the manager discretion arm. Attendance did not differ significantly

between the manager and control arms. On the other hand, the manager arm increased worker productivity (knots woven adjusted for carpet complexity). The productivity effects are 0.05 and 0.12 standard deviations (SDs) relative to the control and worker arms, respectively, and we can reject that productivity in the two treatment arms was equal. There was no significant difference in productivity between the worker and control arms, despite higher attendance in the former. Thus the different allocation mechanisms affect different margins of worker behavior.

We then turn to workplace interactions, as observed by surveyors. The manager arm significantly reduced work-related interactions, compared both to the worker and control arms. It also reduced social interactions, though the effects are not statistically significant. This indicates that while managerial discretion for rewarding workers can increase productivity, it may come at the cost of workplace cohesion or lower knowledge spillovers between workers.

We next ask what behaviors workers and managers reward. We show that winners in the manager and voting arms were both positively selected on attendance, but those in the manager arm were significantly more so. Winners in the manager arm were also positively selected on productivity. On the other hand, winners in the voting arm were positively selected on social interactions. Using data from the endline survey, we also show that workers in the voting arm were more likely to receive a share of the reward from winners, and when asked why, say it was because they voted for the winner. This indicates that while workplace democracy can have favorable effects on certain outcomes like attendance, it may also produce non-productive behaviors like reward-sharing or favor-trading. More generally, these results show that different behaviors are rewarded by workers and managers.

Our treatment effects could arise either because workers changed their behavior to increase their chances of winning (or of receiving a share of the reward), or because winning itself affected behavior in ways that depended on how the reward was allocated. We incorporated a shortlist design to estimate the impacts of winning, which speaks to this question about mechanisms while also providing results that are themselves relevant to the literature on impacts of incentive pay and employee recognition. First pooling across all arms including the control, we find that winning a reward had no impact on attendance, productivity, or workplace interactions in the following two weeks. Furthermore, the impact of winning did not differ statistically by how the reward was allocated, with one exception: winning a reward allocated by a manager reduced work-related interactions, and this effect differs significantly from the corresponding effects in the worker and control arms. This could be because other workers were less inclined to collaborate winners selected by managers out of resentment, or because winning the manager reward made winners feel less need to collaborate with their peers at work. More broadly, these results indicate that the effects on

attendance and productivity are likely driven by workers responding to incentives to win, whereas the effect on workplace interactions may be driven by winning itself. This interpretation is also broadly consistent with the results above on the types of behaviors rewarded by workers and managers.

Which allocation mechanism do individuals prefer? We elicited incentivized preferences; we asked both workers and managers whether they would prefer worker vote or managerial discretion for an additional round of the reward program, implementing the choice of an anonymous, randomly-chosen respondent. The first result is that individuals in the control group tend to prefer worker vote, with 59% of workers and 80% of managers selecting this mechanism. The second result is that experience with a particular allocation mechanism through our treatments generally increases demand for that mechanism.[2] This could be because individuals learned the benefits of their arm but remained uncertain about the effects of the other, or due to a preference for the status quo and aversion to change.

There are several takeaways from these results. First, our findings highlight how what is valued in the workplace impacts worker behavior and firm culture. Second, our results provide a cautionary tale for the policy question around the value of worker agency; worker voting resulted in increased attendance but not greater output, while also enabling workers to collude and reward those who would split the rewards with them. That said, managerial discretion, while improving productivity relative to the worker vote, is not without trade-offs. In particular, the reduction in work-related interactions has concerning implications for knowledge spillovers and cohesion in the workplace. Finally, our findings highlight the power of informal contracting among workers. Despite short-run incentives to defect, workers appear to have sustained collusive agreements to share the rewards, with implications for what behaviors were incentivized under workplace democracy.

This paper relates to three literatures. The first is the literature on worker agency. In related work, Bandiera et al. (2021) find that giving procurement agents autonomy over their work in public procurement agencies in Pakistan leads to lower prices with no impact on quality, and Cai and Wang (2022) show that making workers' evaluations a part of managerial compensation improves retention and team output. Boudreau (2024) estimates how worker occupational safety committees in garment factories in Bangladesh impact worker safety, finding small positive effects of this form of representation on safety. Recent work has also examined how formal worker representation on firm boards or work councils for large firms impacts worker and firm outcomes (Harju et al., 2025; Jäger et al., 2021; Kim et al., 2018; Arnold et al., 2020; Blandhol et al., 2020; Gorton and Schmid, 2004; Addison et al.,

[2]The exception is that managers in the worker vote arm are not more likely to pick that mechanism than managers in the control arm, but they still choose worker vote at high rates given the control mean of 80%.

2010; Fairris and Askenazy, 2010; Freeman and Lazear, 1995; Scholz and Vitols, 2019). We contribute to this literature by providing causal impacts of direct workplace democracy on an important firm decision – who to reward – relative to a counterfactual where managers retain decision rights, and to one where rewards are untied to performance.

Second, we relate to the literature on the impacts of managerial discretion in worker compensation. Using an RCT in Pakistan, Andrabi and Brown (2025) show that using managers' (i.e. principals or vice-principals) subjective reports to determine teachers' raises leads to similar improvements in test scores as using objective criteria based on test scores, but subjective incentives do better for non-test score student outcomes. De Janvry et al. (2023) show that revealing the identity of the person conducting the performance evaluation for junior public employees leads to employees reallocating tasks to those that are important to the evaluator, indicating a shift towards non-productive tasks. Prior work in this literature also estimates the returns to using managers' information in hiring (Hoffman et al., 2018), monitoring (Dal Bó et al., 2021), and promotion decisions (Deserranno et al., 2025). The results of these papers underscore the trade-offs of managerial discretion, namely, that while managers may have informational advantages for some decisions (Dal Bó et al., 2021) and be able to incentivize behaviors that are difficult to observe (Andrabi and Brown, 2025), increased discretion may also lead to decisions influenced by favoritism (De Janvry et al., 2023) or over-confidence (Hoffman et al., 2018). This paper contributes to the literature in two ways. First, it estimates the impact of using managerial discretion in recognition programs, a commonly used, tournament-style mechanism to reward a broad set of behaviors important to firms. Second, it contrasts outcomes from using discretion against a counterfactual of workplace democracy.[3]

Third and most broadly, we relate to the literature on incentive pay, which has estimated the effects of incentive pay on productivity in the public (Leaver et al., 2021; Deserranno et al., 2022; Neal, 2011; Khan et al., 2019; Burgess et al., 2017) and private sectors (the latter literature includes work focused on individual incentive pay (Lazear, 2000; Alexander, 2020; Coviello et al., 2022; Brown and Andrabi, 2020) as well as team incentives (Knez and Simester, 2001; Kuhn and Yu, 2025; Sandvik et al., 2021; Friebel et al., 2017; Bandiera et al., 2013)). Another related literature focuses specifically on the impacts of tournaments on productivity (Bandiera et al., 2013; Delfgaauw et al., 2013; Englmaier et al., 2024; Leuven et al., 2011; Hagenbach and Kranton, 2025). Even in settings with measurable productivity, workers and managers may value dimensions other than individual output (indeed, the most common reasons managers cited for choosing a winner in the intervention were reliability and

[3]Related empirical literature estimates the impacts of managerial autonomy on a broader set of firm decisions, including labor-related decisions (e.g. Aghion et al. (2021) and Kala (2024)).

effort-related, not output-related). This is also the case when externalities such as knowledge spillovers impact firm output. Recognition programs rewarding workers for workplace conduct are common, but may be endogenous to other incentives, and this project contributes to this literature by estimating casual impacts of such programs.[4] Furthermore, it provides evidence on what traits are rewarded and how the structure of such programs, i.e. whether winners are chosen by managers or by a worker vote, impacts the returns to these programs.[5]

2 Background

Our study was conducted in partnership with India's largest carpet manufacturer: Obeetee Ltd. The firm's production, and our study, are based in eastern Uttar Pradesh. Uttar Pradesh is India's most populous state and among its poorest (NITI Aayog, 2018). The carpet industry is largely in the eastern part of the state, with the area where the firm is based often referred to as "the carpet capital of India."

We focus largely on Obeetee's hand-knotted carpet production, which operates as follows. Designers working at Obeetee create a carpet design and retailers (e.g. Pier 1, Pottery Barn) place an order for a certain number of carpets of that design. Obeetee outsources the production of the carpets to hundreds of supplier firms located in villages in the area. Obeetee provides firms with the design and raw materials, and then pays the firms for the completed carpets. Obeetee monitors the firms to ensure carpets are produced correctly and on time, and that labor laws are adhered to within the firms, but otherwise the management and production process is completely up to the firms.

Each firm is owned by an individual in the village and generally employs 10-20 carpet weavers. The firms may take orders from other carpet manufacturers in the area in addition to Obeetee. The firms are generally managed by members of the households who own them, though some larger firms hire managers. Workers mostly come from nearby villages, but some firms employ migrant workers from other states who live and work on the firms' premises for several months at a time. A large majority of workers are male as female labor force participation is low in this area, but Obeetee has been working to train and promote employment for women workers as part of its corporate social responsibility initiatives.[6]

[4]Also related is work that directly incentivizes or encourages behaviors like communication and helping in the workplace (Sandvik et al., 2020; Castro et al., 2025), including with non-monetary rewards such as recognition.

[5]Lab evidence also suggests that competing with co-workers (relative to a more co-operative pay scheme) impacts workers' perceptions of what they have in common with co-workers (Hagenbach and Kranton, 2025). Our paper complements this evidence by testing whether changing who decides what is valued in the workplace also impacts productivity and cohesion.

[6]We have conducted previous projects in partnership with Obeetee that study women's decisions to take-

In light of local gender norms, the firms are gender-segregated, employing either female or male workers but not both. There are often wealth and caste gaps between workers and management, with workers generally coming from poorer or lower caste households. Qualitatively, many workers voiced respect and deference for their firm's management, while some voice concerns about pay or about favoritism towards certain workers.

We work specifically in firms that produce hand-knotted carpets. Such carpets are made of hundred of thousands of knots tied by hand and are generally the highest quality, most expensive carpets on the market. Figure 1 visualizes the production process. Each carpet is woven on a single loom, which can seat 1-4 workers working at once. Threads are strung vertically on the loom and workers tie knots of yarn to those threads as specified by the carpet's design. Weaving is done from the bottom to top of the carpet, with workers completing an individual line of knots spanning the width of the carpet, and then moving on to the line above it. The average carpet produced during our intervention period took 11 days to complete and was 10-by-7 feet in size. Workers often work on the same looms and with the same other workers, but the teams are not totally fixed – some workers are absent on particular days, some may be asked to move to another carpet with an urgent deadline, and sometimes the team is dissolved to work on different looms once its carpet is completed. The workers working on a single loom on a particular day generally split up the width of the carpet, so that if three workers were weaving, each would complete only the left third, middle third, or right third of every line before proceeding to the next line. Thus productivity is largely individual, though workers may ask for help from co-workers. Errors can be made in the weaving process that vary widely in their severity; the vast majority can be and are corrected, though some result in the finished carpet being rejected by Obeetee.

The carpet design specifies the color of each knot and number of knots per square inch, thus determining carpet complexity. All else equal, carpets that have more knots per square inch, more colors, more colors of a similar shade, and more adjacent knots of different colors are more complex. Only workers with sufficient experience and skill are assigned complex carpets (meaning teams of workers are matched on ability). Obeetee pays firms more per square inch for completed carpets that are more complex.

Firms set piece rates to pay workers for doing a certain number of knots, generally either 6,000 or 9,000, and rates vary based on the complexity of the carpet. Workers can generally complete at least 6,000-9,000 knots within a day, but this varies based on their experience, hours spent working, and carpet complexity. In practice, it is difficult for firms to know exactly how many knots a worker completes on a given day and so this is usually somewhat

up the weaving training and employment (Kala and McKelway, 2025; Lowe and McKelway, 2025; McKelway, 2022, 2025*b*,*a*).

approximate, and workers on the team tend to keep track of their own and teammates' carpet progression to enable the appropriate compensation. The cycle on which workers are paid also varies across firms, with the most common cycles being weekly or upon the completion of a carpet.

Worker attendance is quite variable, as is common in firms in developing countries; the median worker was present when surveyors visited in about 58.2% of the daily spot checks. Part of the fluctuation in attendance is due to the volume of work the firms have for workers on any given day, but much of it is worker absenteeism – workers missing work to do seasonal agricultural work, for festivals/weddings, or for some other personal conflict. This absenteeism is problematic, making it challenging for firms to meet Obeetee deadlines and for Obeetee to meet deadlines with external retailers.

While the majority of workers' time is spent weaving (tying knots), the firms require some non-weaving work to be done (in the spot-check data, conditional on attending, we observe workers doing weaving work about 94% of the time and non-weaving work 6% of the time). Much of the non-weaving work happens around the completion of a carpet, when work is required to take the completed carpet off the loom and set up the loom for the next carpet. Whether and how workers are compensated for this work is up to their firms.

3 Experimental Design

3.1 Sample Recruitment

We recruited firms for the study in November and December 2024 (see Figure 2 for a study timeline). Obeetee shared a list of the hand-knotted weaving firms they contract with, and we began by calling firms on that list and completing a short eligibility screening survey.

Our partner's list included 294 firms from 195 villages. The multiple firms within the same village are very often on the same premises, and owned and managed by the same family. They are considered separate firms for Obeetee's purposes (e.g. because different family members formally own different parts, or because one firm was instituted later than another), but we did not want to consider them separate for our experiment given the management and worker pool is often shared across them. The challenge was that Obeetee's list did not distinguish between affiliated and unaffiliated firms in the same village. Our solution was to randomize the order of firms within a village on Obeetee's list, starting by calling the first one, and moving on to the subsequent ones if the earlier ones were unreachable or did not consent for the screening survey. When asking the questions about the firm that determined eligibility, we asked firm owners to report about the entire firm's premises, not

the firm as designated in Obeetee's records.[7] We also asked the firm if they were aware of any other firms in their village that took Obeetee orders, were on separate premises, and not owned by them; these could be considered separate firms for our experiment. We identified seven firms in this way which we contacted for eligibility screening.

The screening survey asked whether female or male workers worked in the premises, how many workers of a given gender worked in the premises, and what fraction of the carpets those workers wove were Obeetee carpets. To be eligible, a firm needed to have between 4 and 50 workers of a given gender, and at least 25% of those workers' carpets needed to be Obeetee orders. If both the male and female weaving operations in a firm were eligible, we took the firm with female workers. We did not pool workers of the same gender because they work separately and their productivity tends to be quite different, given male workers work more hours and have more experience. There are far fewer firms with female workers, so picking these when both were eligible maximizes gender variation in our sample. Of the 301 candidate firms (294 plus seven), we successfully conducted screening surveys with 179 and deemed 144 of those eligible.

We then visited the eligible firms in person to provide the firm owner information about our study and seek their consent for their firm to participate. If they consented, we asked them to identify the firm owner or hired manager we should approach for surveys and allocation of the reward (in case the firm was assigned the manager discretion arm), recommending they select the person most directly involved in managing the workers. We refer to this person throughout the text as the manager. Finally, we provided information about the study to workers in consenting firms. In total, we successfully met with 137 of the 144 eligible firms to seek consent, and 125 consented. The randomization was run and treatment status revealed after firms had agreed to participate. Only one firm withdrew from the study just after treatment was revealed, which means we conducted the reward program and further data collection in 124 firms. Two more firms shut down during the 12-week intervention period, and we impute zeros for attendance and productivity for them post-exit.

3.2 Randomization

We randomly assigned each of the 125 firms to one of three treatment arms: worker vote, manager discretion, or control (lottery). To maximize power, we formed strata that each included three firms, matched on gender and average worker attendance.[8] The latter came

[7] If the firm owner owned firms in different premises within the same village, we asked them to respond about the main premises, defined as the premises where the looms that contributed the highest amount to revenue were located.

[8] The number of firms with female workers (21) was divisible by three, but the number with male workers (104) was not. Hence one male stratum, the one with the highest average attendance firms, included five

from a question on the worker baseline survey (detailed further in Section 4.1 below) asking workers how many of the last seven days they had worked in the firm.

The randomization achieved balance on baseline worker characteristics, measured in the worker baseline survey. Table A.1 compares the three treatment arms on 15 baseline characteristics. Of 45 comparisons, three are significant at the 10% level or higher; this is close to, and slightly less than, what we would expect from random chance alone. Note that our analyses include baseline variables selected using post-double-selection (PDS) Lasso (Belloni et al., 2014), which helps address any important chance imbalances.

3.3 Employee Recognition Program

We introduced a 12-week employee recognition program in all firms. Our treatment varied the mechanism for determining which workers won recognition, but the structure of the program was otherwise identical across the firms. We begin this section by detailing the structure of this program common to all treatment arms, and then describe the randomized allocation mechanisms.

The program involved providing monetary rewards through small recognition ceremonies to individual workers in the firms every two weeks for 12 weeks. The 12-week period occurred between January and April 2025, with surveyors visiting each firm prior to the start of the reward period to explain the program and how rewards would be allocated in that firm.

The winners of every two-week reward cycle were announced in public ceremonies held in each firm the following Monday. Only workers who met a minimum attendance criteria over each two-week period were eligible to receive a reward in that reward cycle. Attendance was verified by our spot checks, wherein surveyors visited every firm on each work day (work days in this setting are Monday through Saturday, excluding holidays)[9] and recorded which workers were present. Only workers observed present on one third of the working days in the two-week period were eligible. Figure 3 illustrates the timeline of a typical reward cycle, including the reward ceremonies and attendance checks.

In each cycle and each firm, one reward was given for every 10 eligible workers, rounded to the nearest integer.[10] This means that any treatment effects on attendance would not affect the fraction of workers in a firm who could win. On average, 14 workers were eligible per firm in a cycle.

rather than three firms.

[9]Occasionally certain firms were closed on other days (e.g. for a funeral in the village), and we did not count these as work days when determining reward eligibility.

[10]E.g. if 15 workers were eligible, two rewards were given. The exception was if fewer than five workers were eligible – in this case we always gave one reward. No reward was given in the few cases where zero workers were eligible.

The reward amount to be given in each cycle was fixed over time, but varied across firms based on typical worker earnings in that firm. Earnings vary by firm due to differences in worker compensation rates, attendance, and productivity. Each firm's reward amount was 10% of the average monthly worker earnings in the firm, calculated using responses from the worker baseline survey and rounded to the nearest ₹50. The amount varied between ₹300 ($3.32) and ₹1200 ($13.30) across the firms, with an average of ₹673 ($7.46). This implies that all winners within a firm would win the same amount, but workers across firms faced the same incentives as a proportion of their average weaving earnings. Keeping a fixed amount determined by baseline data meant treatment effects on earnings could not affect the return to winning, which is useful in interpreting the treatment effects as the impacts of the assigned allocation mechanism. During the recruitment process, we told firms and weavers that the reward amount would be about 10% of the average salary of a weaver, but we did not detail that the 10% would be calculated based on worker baseline survey responses in that firm to avoid workers inflating their reported earnings to increase the amount. The money for these rewards came from the research project, and the reward amount was given to winners in cash immediately after the reward ceremonies.

Each reward ceremony started with an announcement from surveyors, in which they listed the names of the workers in the firm who had met the eligibility requirements that cycle. How the rewards were then allocated among the eligible workers was determined by treatment status.

In the *manager discretion arm*, the winners were selected by the designated manager. On the day of the reward ceremony and prior to making the announcement, surveyors would ask the manager to select the given number of winners from the list of eligible workers based on who, according to them, had done good work over the past two weeks. The surveyor also asked the manager to select runners-up (for the winning quasi-experiment, detailed below) as well as their reasons for selecting each winner and runner-up. The surveyor recorded all responses in a tablet. If the manager was not present on the day of the reward ceremony, the surveyor would ask them to make their selections over a phone call, and if that failed, the choice was made by someone the manager designated in advance of the ceremony.[11] Then, after making the announcement to the firm listing the eligible workers, the surveyor said the winners had been selected by the manager based on who, according to them, had done good work over the last two weeks, and then proceeded to announce the names of the winners. The names of the runners-up were not revealed, nor were the reasons the managers provided for selecting the winners or runners-up.

In the *worker vote arm*, a vote by the workers determined who won the reward. After

[11] This was a rare occurrence, happening only 1.26% of the time.

listing the eligible workers, the surveyors said the rewards were to be given to the workers who had done good work over the two preceding weeks, and would be allocated based on a vote of the workers. Surveyors then called eligible workers one-by-one to a private voting booth they had set up outside the firm to cast their votes. Votes were cast on ballot papers, and surveyors assisted any illiterate workers in filling out their ballots. Only eligible workers were included on the ballots and only eligible workers could cast votes. Each person could vote for one person and were not allowed to vote for themselves. Surveyors also asked each worker why they voted for the person they did, recording both the reason and the person the worker voted for on a tablet.

Once the voting was complete, the surveyor went inside the firm to count the paper ballots. The surveyor gathered the workers around for the counting in a way that they could see the counting occur but not see what was selected on individual ballots or the tallies of votes cast for different workers. We had surveyors count the votes and this count determine the winner rather than having the tablets count because we wanted to make it clear to the workers that the votes and the votes alone determined the winners. The surveyors recorded in the tablets who their counts revealed to be the winners, allowing us to check that the surveyor counting was correct the vast majority (97%) of the time. Once the votes were counted, the surveyors announced the winners. If x rewards were to be given, the x workers with the highest number of votes won the reward. More than x winners were selected in the case of ties, with the total amount initially assigned to be distributed across all winners being divided equally among the actual number of winners.[12] Note that only the names of the winners were announced to workers and not the full distribution of votes – it was not revealed who came in second place or what the ordering of the winners was in the cases of multiple winners. We did not reveal the full distribution to mimic the procedure for the manager arm while also making possible the winning quasi-experiment detailed below.

Finally, in the *control (lottery) arm*, rewards were allocated based on a public lottery. We gave rewards in our control group to hold fixed income effects and interactions with the research team, but allocated the rewards to (eligible) workers selected at random. To make the randomness transparent to workers, the rewards were allocated through a public lottery. After surveyors announced the eligible workers, they put a chit into a transparent box for every eligible worker, with the worker's name on it. The surveyors then shuffled the box, drew one chit out while looking in another direction, and then read the name on the selected chit. This was repeated as many times as there were rewards to be given in the firm, with the workers whose chits were drawn being the winners. The surveyor recorded whose chits were

[12] 16.2% of voting reward ceremonies had cases where at least one recipient had to split the reward with another.

drawn out in a tablet. We show in Table 4 that a large majority of workers in the control arm (74%) said on the first endline survey that the type of worker who won rewards in their firm was determined by luck/karma, indicating that workers in this arm indeed thought that this was a lottery.

3.4 Winning Quasi-Experiment

We were also interested in how winning affected the winners, and in whether these effects varied based on how the reward had been allocated. Our design generates quasi-experimental variation in winning. This variation is straightforward in the lottery arm: the winners were chosen at random from the eligible workers, hence we can compare the winners to the rest of the eligible workers to understand the effect of winning.

However, we cannot simply compare winners to other eligible workers in the manager discretion or worker vote arms because the winners are likely to differ systematically from the others. For these arms, we use quasi-experimental variation, comparing the winners to the runners-up, with the idea that the runners-up are likely to be very similar to the winners. As mentioned above, we asked managers in the manager arm to identify runners-up. Specifically, they were asked to share the names of weavers they believed were best after those they had identified as winners. They were asked to identify as many runners up as winners, and asked for the reason for selecting each winner and runner up.

In the voting arm, both winners and runners-up are identified based on the records of who voted for whom. The winners as identified in this way vary slightly from the actual winners in the 3% of cases where surveyors mis-counted votes, but this approach allows us to identify winners and runners up in the same way (surveyors were not asked for the runners-up according to their count) and can be seen as an "intent-to-treat" approach. As detailed above, it was not revealed in either the manager or worker arm who the runners up were.

We conduct balance tests for the winner/runner-up comparisons, both pooling across the three allocation mechanisms (Table A.2) and separately by mechanism (Table A.3). We run the worker x round-level regressions detailed in Section 4.2.2 below, except the outcomes are from the previous fortnight, i.e. the reward cycle which chose the winner. We test for balance on our five main outcomes related to attendance, productivity, and workplace interactions.[13] Looking at the pooled estimates in Table A.2, we see that winners have slightly greater attendance than runners-up, but the difference is small (0.149 days, 2% of the runner-up mean) and there are no significant differences on other outcomes. Splitting by allocation mechanism in Table A.3, we see winners had higher baseline attendance than runners-up in

[13]We do not have baseline measures of these for the main experiment, which is why they are not in the balance tests for that experiment in Table A.1.

the manager arm, but again the difference is small, there are no other significant differences in outcomes in any treatment arm, and none of these differences vary significantly by treatment arm. In sum, winners and runners-up were similar in outcomes prior to winning, supporting the validity of our short-list design. Nevertheless, we control for the baseline outcomes in our regressions to adjust for the small baseline differences and improve power.

4 Data and Empirical Specifications

4.1 Data

We collected data from several sources, visualized in the study timeline (Figure 2). Our main source of data comes from our "spot checks," or surveyor visits to firms. Surveyors visited each of the 124 firms[14] on every work day throughout the 12-week intervention period, recording several different worker and manager behaviors. First, they measured worker attendance, using a dynamic roster which updated as new workers were observed (this is also the data used to determine eligibility for the rewards). Second, they recorded what each worker was working on: whether they were doing weaving or non-weaving work, what loom they were sitting at or if they were doing non-weaving work off loom, and the characteristics of the carpet they were weaving (if they were weaving). Third, they recorded whether the workers on each loom were interacting with each other during the visit, and if so, categorized the topic of their discussion (e.g. social, work-related). Fourth, they recorded if the manager was present, and if so, what they were doing (e.g. supervising workers, helping workers, engaged in production). We use this data to construct our main outcomes: attendance, productivity, and workplace interactions. We detail the construction of these outcomes when presenting effects on them in Section 5.

We also collected a baseline survey and two endlines in the 124 firms. Both workers and managers were surveyed at each wave of surveys. The baseline survey gathered information about individuals' demographics, work at the firm, and perceptions of workplace culture. The endline surveys asked about work at the firm, workplace culture, as well as several questions about beliefs and experiences with the reward program. The first endline survey (EL1) was conducted over the final three weeks of the 12-week reward program, and the second (EL2) 5-11 weeks following the end of the 12-week period. For outcomes measured at both endlines, we use data from EL1 when available – since that endline was done during the reward period – but use responses from EL2 for respondents not surveyed at EL1. Survey outcomes are detailed further as we present effects on them below.

[14]Recall 125 firms consented and were randomized, but one firm subsequently withdrew from the study.

Table A.4 presents analyses of endline attrition. We were able to complete either endline survey for 82% of workers in the control group, and this rate is balanced across treatment arms.[15] We also see balance in completion of EL1, though there is some imbalance at EL2, with workers in the manager and worker vote arms being less likely than the control to complete that survey. Note, however, that there is no difference in attrition if we compare the manager and worker arms to each other. 98% of managers in the control group were surveyed at either endline, and this is balanced by treatment. We also see balance in manager attrition at each endline individually.

4.2 Empirical Specifications

4.2.1 Main Specifications: Impacts of Recognition Program

For our main analyses of spot-check outcomes, we run regressions of the form:

$$Y_{ijt} = \beta_1 T_{1j} + \beta_2 T_{2j} + \alpha_s + \alpha_r + \gamma X_j + \varepsilon_{ijt} \tag{1}$$

where Y_{ijt} is an outcome for worker i in firm j on date t. T_{1j} and T_{2j} are indicators for firm j being assigned to the manager discretion and worker vote arms, respectively. α_s are fixed effects for strata, and α_r are fixed effects for each of the six rounds of reward cycles. X_j are variables selected via post-double-selection (PDS) Lasso (Belloni et al., 2014) from the screening and baseline surveys. Given significant levels of worker churn, many workers present in the spot checks were not surveyed at baseline, and so the Lasso variables are either firm-level variables or firm-level averages of worker-level variables. Standard errors are clustered by firm (the level of treatment). We also run analogous regressions at the firm $\times$ date level.

For endline-survey outcomes, we run regressions of the form:

$$Y_{ij} = \beta_1 T_{1j} + \beta_2 T_{2j} + \alpha_s + \gamma X_j + \varepsilon_{ij} \tag{2}$$

where all variables are defined as above. As before, standard errors are clustered by firm.

In both specifications, the coefficients of interest are β_1 and β_2 – the impact of the manager discretion and worker vote arms, respectively, relative to the control group. We also test $\beta_1 = \beta_2$ in all regressions to assess the effect of the worker vote arm relative to the manager arm.

[15]The sample for the worker attrition regressions includes any workers ever observed present in a spot check during the 12-week intervention period.

4.2.2 Impacts of Winning Recognition

We use two specifications to estimate impacts of winning the recognition program on winners' behavior in the two weeks *after* winning, i.e. in the next program cycle. The first pools all arms including the control group, and compares winners to runners-up in the cycle, using the following specification:

$$Y_{ijr} = \beta \text{Won}_{ij,r-1} + \alpha_s + \psi Y_{ij,r-1} + \gamma X_j + \varepsilon_{ijr} \tag{3}$$

where Y_{ijt} is an outcome for worker i in firm j in reward-cycle round r - for instance, number of days the worker attended, or total knots woven (adjusted for complexity). $\text{Won}_{ij,r-1}$ is a dummy variable that takes the value of 1 if worker i won the reward in $r-1$, and zero if the worker was a runner up in $r-1$. The regression is restricted to winners and runners up in $r-1$, and r ranges from 2 to 6. See Section 3.4 for details on how runners up are identified. α_s denote strata fixed effects for the winning quasi-experiment: i.e. firm $\times$ round fixed effects, meaning we compare winners and runners up in the same firm and cycle. We control for the value of the outcome in the previous round as well as Lasso controls, selected from the same set of baseline variables as in the prior two specifications.[16] We cluster standard errors at the firm level for consistency with the regression below, where regressors of interest are defined at the firm level.

The second specification for this analysis tests whether the impacts of winning vary by how the reward was allocated, i.e. at random, by the manager, or by worker vote. To answer these questions, we estimate the following specification:

$$Y_{ijr} = \beta_1 \text{Won}_{ij,r-1} + \beta_2 \text{Won}_{ij,r-1} \times T_{1j} + \beta_3 \text{Won}_{ij,r-1} \times T_{2j} + \alpha_s + \psi Y_{ij,r-1} + \gamma X_j + \varepsilon_{ijr} \tag{4}$$

where all variables are as defined in Equation 3, and T_{1j} and T_{2j} are indicators for the manager and worker vote treatments, respectively.[17] Standard errors are clustered at the firm level.

To understand if winning in the manager arm has a statistically significant impact, we present p-values testing $\beta_1 + \beta_2 = 0$. For the corresponding test for the voting arm, we present p-values testing $\beta_1 + \beta_3 = 0$. We also test whether the treatment effects of winning

[16] We do not control for the baseline value of the outcome in the specifications in Section 4.2.1 because we do not have spot check data pre-treatment in our main experiment and many workers were not surveyed on the worker baseline.

[17] Note T_{1j} and T_{2j} on their own, not interacted with $\text{Won}_{ij,r-1}$ are subsumed by the strata (firm $\times$ round) fixed effects.

are the same in the manager and worker arms, i.e. we present p-values testing $\beta_2 = \beta_3$.

5 Effects on Main Outcomes

5.1 Attendance and Productivity

Our primary performance-related outcomes are daily attendance and productivity, both measured using the daily surveyor visits (spot checks) and defined in a balanced worker x date panel covering the 12-week intervention period. We note that firm levels of worker entry and exit over this period do not differ by treatment arm (Table A.5), which assuages concerns about selective entry of workers into firms as a function of treatment.[18] Attendance is simply an indicator for a weaver being present on a given day's spot check. We measure productivity as the number of knots woven, adjusted for carpet complexity. Using the dates a carpet was started and finished, the total number of knots in the carpet, and the number of people working on it each day, we impute the number of knots a worker wove if they were weaving on a particular day. For instance, if the carpet had 9000 knots, took three weaving days to complete, and was worked on by two workers each day, each worker would be interpolated to have woven 1500 knots on each of these three days. If a worker is engaged in non-weaving work or absent, they are assigned zero knots for the day. We residualize these knots (winsorised at the 99th percentile) on carpet characteristics such as number of colors and density of knots. Whenever carpet controls are missing, we set them to zero (e.g. if a worker was not weaving and therefore has no carpet characteristics), and we add a dummy for any carpet controls being missing.[19] We then use residualized knots as our measure of productivity.

Results are presented in Table 1. Column 1 shows that the worker voting arm increased worker attendance by 5.3 p.p. (p-value < 0.01) relative to the control arm, an 11% increase relative to the control mean. There is no difference in attendance between the manager and control arms, and we can reject that the two treatment arms have the same effect (p-value < 0.05).[20] Consistent with increased attendance in the voting arm, we also find this treatment increases weavers' likelihood of eligibility for rewards, both relative to the control

[18] We also note that effects on attendance and productivity look similar when we include only workers who took the baseline survey.

[19] The full set of carpet controls are number of colors, area, number of knots, density of knots per square yard, dummy variables for three types of carpet requiring different weaving techniques, a dummy variable for whether the carpet is for the partner firm, and a dummy variable for whether carpet controls are missing.

[20] These results are not driven by attendance on days in which the reward ceremonies were conducted. Dropping the six days on which these ceremonies were scheduled leads to nearly identical results: an attendance increase of 5.6 p.p. rather than 5.3 p.p. Reward ceremonies were largely conducted when scheduled, with the largest deviation in the first round, when four firms' ceremonies were delayed by one day.

and to the manager arms (Table A.5).

On the other hand, in column 2 of Table 1, we find that the manager arm increased productivity relative to the worker arm ($p < 0.10$). The effect of the manager arm relative to the control group is positive but not statistically significant, while that of the worker arm relative to the control is negative but not significant. Based on a standard deviation of residualized knots in the control group of 4172, the manager-versus-control effect is 0.05 SDs, and the manager-versus-worker effect is 0.12 SDs, a substantial increase. The comparison between the attendance and productivity effects is notable; despite attending more than workers in the manager arm, workers in the worker arm produced less daily output.[21] Consistent with this, when we run the productivity regression but only include workers who were present on a given day in column 3, the difference in productivity becomes larger in magnitude (though less precise). Relative to the standard deviation of the control group in the conditional sample, the manager-versus-worker effect is 0.15 SD.

One concern is that greater output may have been accompanied by more carpet defects. We measured defects at EL2, asking workers if there had been a defect on a carpet they worked on in each of the intervention months, and asking managers if there had been a defect on a carpet produced by the firm in each month. We create two binary outcomes for workers and managers reporting any defect during this time. Rates of defects do not differ by treatment arm for either outcome (Table A.6).[22] [23]

We also present effects on attendance and productivity aggregated to the firm-level in Table A.7. The measure of attendance is the number of workers present on a given day, while productivity is the sum of residualized knots in the firm on that day. For the average firm, the number of workers present does not change with either treatment, but the manager arm increases productivity by 0.30 SDs relative to the control group (p-value<0.05), and 0.41 SDs relative to the worker vote arm (p-value<0.01). The fact that the attendance effects are not present at the firm level and the productivity effects are larger in magnitude compared to the worker level suggests that the attendance effects are driven by larger firms and the productivity effects by smaller firms. More broadly, these results show that firms assigned to the manager arm substantially increased productivity at the firm level.

[21] One possibility is that firms did not have enough work for workers to do when attendance increased. However, the median manager surveyed at EL1 said they had never had trouble getting enough carpet orders to keep weavers busy since the start of the employee recognition program, and there are no treatment effects on this.

[22] The control mean for the manager's report is greater than that for the worker because managers were asked about any defects at the firm, while workers were asked about any defects on carpets they worked on.

[23] Since there is imbalance in worker attrition at EL2, we also compute Lee Bounds for workers' reported defects. The 95% confidence interval for the manager arm is [-0.0001. 0.0623] and for the worker arm is [-0.0027, 0.0580].

These results illustrate that the two treatment mechanisms incentivized workers to exert effort along different dimensions valued by firms. However, the effects of the worker arm indicate firms may not be able to translate greater attendance into greater output.

5.2 Workplace Interactions

In addition to attendance and productivity, workers' interactions with each other or the manager may also change as a result of the program. This could be due to changes in co-operative or competitive behavior, for instance, or changes to social cohesion in the workplace. We measure workplace interactions using the observations from the daily spot checks described in Section 4.1. We sort the categories of interactions surveyors observed into three groups: any work-related interactions, social interactions, and conversations with the manager. Interactions were recorded at the loom x date level and for analysis we aggregate to the firm x date level, presenting effects on indicators for any interaction of a given type being observed in the firm on that day.[24]

Results for these outcomes are presented in Table 2. Column 1 reports impacts on work-related interactions, where we we find large and significant reductions from the manager arm. The likelihood of work-related interactions falls by 9.3 p.p. (p-value < 0.01), about 39% of the control mean. The effect for the worker arm is negative, but smaller (1.8 p.p.) and not significant, and we can reject that the two treatment arms have the same impact (p-value < 0.01). Furthermore, in column 2, we also see a negative effect of the manager arm on social interactions, but the effect is not significant relative to the control (p-value $= 0.172$) or worker (p-value $= 0.268$) arms. These results suggest that recognition programs which give managers discretion could reduce workplace cohesion or reduce knowledge spillovers, even if these did not translate into negative productivity impacts overall. If, however, production relied significantly on worker co-operation, this particular type of incentive structure may not be optimal for the firm.

How do worker interactions change with managers? First, Column 3 shows that workers are not more or less likely to be talking to the manager in either arm during surveyor visits. Interactions with managers are also quite uncommon, observed on a loom in just 3.3% of firm x days. Furthermore, Table A.8 presents effects on whether managers were present and what they were doing when surveyors visited for the spot check. Managers are not more or less likely to be present, nor are they more or less likely to be monitoring workers, helping them, or engaging in production. These results indicate that managers do not respond to the type of recognition program in their frequency and type of worker interactions, allowing

[24]We additionally control for the number of workers at the firm on that date, but the results are similar to omitting this control variable.

us to rule out this as a potential mechanism for treatment effects.

6 How Were Rewards Allocated?

Next, we examine differences in how rewards were allocated across the treatment arms, considering: what behaviors were rewarded, beliefs about rewarded behaviors, the extent to which winners were repeated versus rotated, as well as sharing of reward money.

6.1 What Behaviors Were Rewarded?

We begin by testing whether the behavior of workers who received the recognition rewards differed across the treatment arms. We restrict to winners in the manager and worker arms, and all eligible workers in the control arm.[25] We then compare these workers on their within-firm percentiles of attendance, productivity, and participation in work-related and social interactions in the fortnight before they won. Attendance is the number of days attended, productivity the sum of residualized knots, and the interactions the number of days observed in an interaction of a given type (all in the fortnight before winning). We then compute each winner's percentile for each variable, where percentiles are computed relative to all eligible workers in their firm in that round. This allows us to ask: where were winners drawn from in their firm's attendance, productivity, and interaction distributions, and how did this differ by allocation mechanism?

We present these results in Table 3. Column 1 shows that winners in both the manager and worker arm are more positively selected on attendance relative to the control group, though winners in the manager arm are significantly more so. In particular, winners in the manager arm are 10.3 percentiles higher on average than the control group, while those in the worker arm are 6.5 percentiles higher. In column 2, we see that workers in the manager arm are also more positively selected on productivity, though the effect (3.5 percentiles) is smaller in magnitude compared to attendance. The larger effects on attendance are also consistent with the reward ceremony data, where good attendance was picked by managers and workers as the first and second most common reason for picking a worker as a winner, respectively.

Turning to interactions (columns 3-4), we see small, statistically insignificant differences in interaction percentiles between the manager and control arms. However, winners in the voting arm are more positively selected on social interactions, with voting winners coming

[25]The control winners were selected at random so winners should not differ from the average eligible worker, and including all eligible workers improves power.

from 4.2 higher percentiles on average compared to the control arm (p-value < 0.01). The coefficient on workplace interactions for this arm is also positive, but smaller (2 percentiles) and not statistically different from zero ($p = 0.114$). These findings are also consistent with the reward ceremony data, where the most common reason workers gave for selecting a co-worker as a winner was "behaves well with other weavers."

In sum, managers tend to reward workers on dimensions that benefit the firm: attendance and productivity. Workers, on the other hand, reward co-workers on dimensions that could benefit the firm (greater attendance) but also on dimensions that do not (social interactions). The workers' allocations could also reflect willingness to share rewards, which we discuss below. More broadly, which types of behaviors are rewarded differs based on who is allocating.

6.2 Beliefs About What Behaviors are Rewarded

The previous section examined *actual* differences in winners' behavior across treatment arms. However, *beliefs* about the types of workers who won could also impact the returns to these programs for firms. At EL1, we asked workers what types of workers had generally won the rewards in their firms, allowing them to choose one or more of several traits. We group these into five categories of behaviors: (1) productivity-related (the winner wove many knots, worked on complex carpets, made few mistakes, or did non-weaving work well), (2) effort/reliability related (working quickly, meeting deadlines, high attendance, trying hard, or taking initiative), (3) helping in the workplace, either for co-workers or the manager, (4) non-productive traits, either co-worker-related (niceness, popularity, sharing rewards with workers, or campaigning for votes) or manager-related (being nice to, promising rewards to, or being favored by the manager), and (5) other unrelated reasons including financial hardship and luck.

We present treatment effects on these beliefs in Table 4. Workers in both treatment arms reported a much higher likelihood of winners performing better on productivity-related measures (column 1). The point estimate is higher in the manager arm than the voting arm, though we cannot reject that they are the same statistically ($p = 0.164$). Likewise, workers in both the manager and worker arms report greater effort/reliability of winners compared to the control group, and the effect is significantly larger for the manager arm than worker arm (column 2). Helping workers is more likely to be chosen as a winning behavior in the voting arm, but helping managers is not differentially more likely in the manager arm than in the voting arm (columns 3-4). The latter could be because possibilities to help co-workers were more likely to come up, or that managers relatively valued other traits like productivity

and effort.

Turning to non-productive behaviors, workers in the voting arm are more likely to report winners undertaking non-productive behaviors related to co-workers (column 5), while workers in the manager arm are more likely to report winners undertaking non-productive behaviors related to managers (column 6), which is intuitive. The overall likelihood of reporting any non-productive behavior is higher in the voting arm than the manager arm, and higher in both arms than the control (column 7). This is consistent with results from Table 3, where we saw winners in the voting arm were more likely to be positively selected on social interactions, and with results presented below, which show an increased likelihood of winners sharing rewards in the voting arm. There are no differences in beliefs that winners were chosen due to financial hardship between the manager and worker arms, though this was slightly more likely in the worker arm relative to the control. Finally, there are large negative effects from both the manager and worker arms relative to the control on whether workers thought the winner was chosen by luck, which reflects beliefs that randomization was followed in the control group.

In sum, workers in the manager and worker arms reported both positive workplace behaviors (like productivity, effort, and helping) and unproductive behaviors being rewarded. The effects on perceptions of rewarding positive workplace behaviors were generally larger in the manager arm than the worker arm, though not always significantly so, while rewarding unproductive behaviors was seen as significantly more common in the worker arm.

6.3 Repeating Versus Rotating Winners

We have seen that the various allocation mechanisms led different behaviors to be rewarded, but were rewards allocated to single individuals with those behaviors or rotated among several different individuals? We investigate this in Table 5, presenting effects on the number of individuals in a firm who won a reward more than once. Of course the number of repeat winners is partly a function of the total number of winners, and this may differ across treatment arms due to ties in the voting arm or to effects on attendance around the eligibility threshold; we therefore also present effects on the total number of winners in a firm across all rounds.

There were around 10 winners in total in each firm (column (1)). The number of winners was slightly larger in the worker arm, but the difference is significant only relative to the manager arm. The point estimate for the manager-control comparison is negative but not significant.

Turning to the number of repeat winners (column (2)), two results are notable. First, the

number of repeated winners is no different in the worker arm than in the control arm, where rewards were allocated at random. Second, the number of repeated winners is significantly lower in the manager arm compared to both the worker arm and the control arm (p-value < 0.01 for both). Of course we saw in column (1) that the manager arm had slightly fewer total winners, but the point estimates from columns 1 and 2 together imply that only 7% of manager-arm winners were repeat winners, versus 17% and 23% in the control and worker arms, respectively.

Thus while workers and managers rewarded certain types of behaviors, there was substantially more rotation in the individual workers managers rewarded. One explanation is that managers were constrained in who they rewarded by perceptions of fairness, intentionally rotating the reward to avoid perceptions of favoritism. We found above that the manager arm increased reports that unproductive, manager-related behaviors were rewarded, and we will see in Section 8 below an increase in perceptions that personal relationships with managers are important for how workers are rewarded in the firms; these results suggest that concerns about fairness and favoritism are real, and that the managers were not totally successful in alleviating them.

6.4 Reward Sharing

Assigning workers voting rights can lead them to reward workers who exhibit workplace behaviors they value, but they may also use this power to reward unproductive behaviors, as we have seen. In this section, we examine one particular unproductive behavior, requiring worker collusion: inducing winners to share their rewards in exchange for voting for them.

At EL2, we asked whether workers had received a share of a reward from a winner and, if so, why the winner shared with them. Column 1 of Table 6 presents impacts on an indicator for workers reporting a winner had shared with them. It is worth noting that across all arms, the likelihood of reward sharing is high, with 72% of workers in the control group reporting that winners had shared the reward with them. However, the likelihood of receiving a share is 14.2 p.p. higher in the voting arm relative to the control group ($p < 0.01$), a 20% increase relative to the control mean. Sharing in the manager arm is not statistically different from in the control group but significantly lower than in the voting arm ($p < 0.01$).

We turn to reasons for sharing in columns (2)-(6), considering the following reasons: they were friends or family, they voted for the winner, they helped the winner with work, they made the winner look good to the manager, and luck should be shared. Workers were only asked about reasons if they reported receiving a share; to make effects interpretable, we code the reasons outcomes as 0 when sharing was not reported. Thus the outcome in, say, column

(2) is an indicator for receiving a share and this resulting from being friends/family.

Workers in the voting arm were 37.7 p.p. more likely to report they received a share because they voted for the winner, relative to a control mean of zero ($p < 0.01$). There is also a positive effect on receiving a share due to helping the winner with work, though it is much smaller in magnitude (6.8 p.p.). Both treatment arms are much less likely to report that the winner shared with them because luck should be shared, consistent with luck being seen as more important for determining winners in the control group. Neither treatment group impacted receiving a share due to making their co-worker look good to the manager.

In sum, rewards were more likely to be shared in the worker arm, and also more likely to be shared in exchange for voting for the winner. More generally, these results speak to the strength of informal contracting among workers, and its potential to interact with workplace incentives; workers appear to have been able to sustain collusive agreements to vote for winners in exchange for money, despite short-run incentives for winners to defect.

7 Mechanisms: Incentives to Win Versus Impacts of Winning

What explains the treatment effects on our main outcomes, attendance, productivity, and workplace interactions? Broadly speaking, there are two possible mechanisms. First, workers may have changed their behavior in order to win rewards (or win a share of a reward). Second, winning itself may have affected winners' behavior in the workplace (e.g. due to reciprocity), and this effect may have differed based on how the rewards were allocated.

To investigate, we use the runner-up design and empirical specifications described in Sections 3.4 and 4.2.2 to estimate the impacts of winning on our main outcomes. As detailed in Section 4.2.2, our analysis is at the worker x round level, and hence we consider impacts on: days attended, residualized knots woven, and days observed in each of the three interaction types, all totaled across the fortnight following the win.[26]

Tables 7 and 8 present the impacts of winning, estimating the two specifications listed in Section 4.2.2. First looking at the effects of winning pooled across all treatment arms (Table 7), we see no impacts on any of the main outcomes, indicating that winning a reward does not cause workers to increase effort or interact differently with their co-workers. Furthermore, these effects do not differ based on how rewards were allocated (Table 8), with one exception: work-related interactions in the manager arm. Winning in the manager arm reduces such interactions, and this effect differs significantly from the corresponding effects in the worker

[26]We exclude the day of the reward ceremony itself because winners were more likely to be present than runners up, which likely reflects anticipation of winning rather than an effect of winning.

and control arms. This could be because other workers resented winners selected by managers and were less likely to collaborate with them as a result. Another possibility is that workers who won rewards allocated by managers felt less need to collaborate with their peers at work.

These results suggest that our main effects on attendance and productivity from Table 1 are unlikely to be driven by winning and more likely to come from incentives workers faced to win (or to receive a share of a reward). This is also consistent with results from the previous section that managers were more likely to reward workers who exhibited behaviors that would have helped the firm like productivity, while the greater tendency of workers to reward non-productive behaviors may have inadvertently encouraged attendance, e.g. to coordinate on voting and sharing. On the other hand, the results presented in this section imply our main effect on work-related interactions from Table 2 is driven, at least in part, by the effect of winning. Also consistent with this is that we saw no evidence in Table 3 that managers would have incentivized low interactions based on how they allocated the rewards.

Beyond speaking to mechanisms, the impacts of winning are relevant to the literature on effects of incentive pay and of employee recognition. Our results indicate that winning recognition has few impacts on workplace performance in the short term.

8 Other Outcomes

In this section, we present effects on several additional outcomes of interest. First, we consider specific aspects of firm culture as reported by workers in the two endlines (Table 9). We begin by considering measures of meritocracy, asking how our treatments change workers' perceptions that effort/skill versus personal relationships determine how workers are rewarded in their firms. In column 1, we find that both arms increased perceptions that effort/skill are rewarded, but the effect of the manager arm is larger (0.25 versus 0.15 SD). However, increasing managerial discretion also appears to increase perceptions of favoritism. Perceptions that personal relationships with the manager are rewarded increase by 0.27 SD in the manager arm relative to the control group, and by 0.21 SD relative to the worker arm (column 2). The manager and worker arms both increase perceptions of co-worker relationships being important, though the effects are smaller (0.11 and 0.15 SD, respectively). The effect of the manager arm on this outcome is consistent with the result from Table 4 that workers perceived managers rewarded helping other workers.

Table 9 also presents effects on two other broad aspects of firm culture. The first is a recognition index, including two questions on the extent to which workers felt managers and other workers appreciated their work. The manager arm significantly increased perceived

recognition, but the worker arm did not (column 4). The second is a collegiality index, comprised of five variables: perceived workplace competitiveness (reverse-coded), reports of giving and receiving help from co-workers, number of co-workers the respondent said they were close to, and number of co-workers the respondent said they would ask for work-related help. We see positive but statistically non-significant effects on this index from both treatment arms (column 5).[27]

Next, we present effects on daily earnings, as reported by the workers at the two endlines and winsorised at the 99th percentile (Table A.5). Daily earnings in the manager arm increase by ₹28.46 relative to the control group (p-value < 0.05), an increase of 12% relative to the control mean. This is consistent with increased productivity in the manager arm. Earnings also increase in the worker vote arm, though the point estimate is lower (₹19.36, p-value < 0.10). This could indicate that attendance is a portion of workers' compensation in this setting, especially given the challenges with tracking knots described in Section 2.

Table A.10 presents effects on workers' psychology, measured by work locus of control (where questions pertain to jobs in general, not just the current workplace), generalized self-efficacy, self-reported weaving ability, and feelings of nervousness and depression. These outcomes are generally unaffected by our treatments. While these outcomes could in principle shift in response to changes in one's workplace, the changes we observe may not be large enough to produce effects on downstream psychological outcomes.

Finally, we present heterogeneous effects on attendance and productivity by three pre-specified dimensions: gender, preference for worker vote versus manager discretion allocation mechanism, and perceived importance of manager relationship in rewarding workers.[28] We present effects at the firm-date level and construct firm-level, baseline measures of these variables, since fewer workers took the baseline survey than are present in the sample. In particular, we consider heterogeneity by indicators for female firm, above median share of workers preferring worker vote, and above median average importance of manager relationship.

We find limited evidence of heterogeneity by these dimensions (Table A.11), though several findings are notable. First, in firms where the managerial relationship was seen as more important, the manager treatment was significantly worse for attendance than the control arm. The corresponding interaction term for the productivity outcome is negative but not statistically significant. Second, the treatment effects do not differ significantly by gender, though notably, the effect of the manager arm on productivity is driven by male

[27] Table A.9 presents effects on the components of these indices.

[28] We note that we pre-specified a different variable for this final dimension. We specified heterogeneity by whether managers reported they were close to the worker, but this is true for few workers (less than 5%) so we use perceived importance of managerial relationships instead.

centers. Lastly, and somewhat surprisingly, firms with more workers preferring the worker vote experienced a significantly greater effect on attendance from the manager arm relative to the control.

9 Choice of Allocation Mechanism

How do the results we have seen translate into preferences for how the rewards should be allocated? And does first-hand experience with an allocation mechanism affect preferences, i.e. is there a treatment effect on preferences?

To get at this, we asked workers and managers at EL2 which allocation mechanism they would prefer if we ran the recognition program for two more weeks at their firm: worker voting or managerial discretion. We explained both options clearly so that all respondents understood what each entailed.[29] To incentivize responses, we implemented the chosen allocation of one randomly selected respondent in one randomly selected firm (and told respondents we would do so). The respondent whose choice was implemented remained anonymous.

The results are presented in Table 10, with column 1 presenting effects on workers' choices and column 2 effects for managers. Two findings are particularly notable. First, the majority of workers and managers in the control group – 59% of workers and a striking 80% of managers – chose the worker vote over managerial discretion, indicating a preference to give workers autonomy, at least in the short-run.

Second, experience with a particular allocation mechanism tends to increase demand for it. The manager treatment made both workers and managers less likely to choose the worker vote. The effect is larger for managers than workers (21.6 p.p. versus 40.5 p.p.), but given the control means, a similar majority of workers and managers in the manager arm chose that allocation mechanism. Likewise, the worker treatment increases workers' preference for it by 13.4 p.p. There is no effect of the worker treatment on managers' demand for it, though the control mean is quite high, meaning a similar majority of both workers and managers in this arm prefer this mechanism. These results could be explained by firsthand experience leading individuals to learn about the benefits of their arm but to remain uncertain about

[29]The manager option was explained as: "this option is for the reward to be allocated by your manager, [manager name], based on who, according to them, did good work in the two-week period." (This was revised very slightly in the manager survey to say "you" rather than "your manager, [manager name]" and "them".) The worker option was explained as: "this option is for a weaver vote to determine who gets the reward. A member of my team would call weavers in private one-by-one to vote for a winner. Weavers would be asked to vote for who, according to them, did good work in the two-week period. They would not be allowed to vote for themselves. My team member would then tally the votes and give the reward to the weaver with the most votes."

the effects of the other; managers learn about the productivity gains of the manager arm and workers learn about the increased earnings, while workers in the voting arm learn about the benefits of agency (e.g. the ability to extract a share of the rewards). A plausible alternative explanation is that individuals are averse to change, leading them to prefer the incentive structure they have had.[30]

10 Conclusion

In this paper, we show that managerial discretion and workplace democracy have nuanced effects on workers and firms, with both inducing some positive outcomes, at the cost of others. In particular, managerial discretion in rewarding workers can increase productivity, but also reduce workplace interactions. On the other hand, workplace democracy can increase attendance without improving output. Furthermore, workers and managers reward different types of behaviors; winners chosen by managers are positively selected on attendance and productivity, while those selected by workers are positively selected on attendance and social interactions. We also document that democracy induces bargaining amongst workers, with winners being more likely to share their bonuses in exchange for support.

There are several important takeaways from our results. First, our findings underscore that what is valued in the workplace matters. We show differing effects on objectively measured outcomes that are important to firms – attendance, productivity, and worker interactions – based on whether workers or managers allocate rewards.

Second, we provide novel evidence on the effects of increasing worker agency. Firms have begun to increase agency given to workers, with many employers viewing worker agency as important for organizational success (Deloitte, 2023). Indeed, we saw 80% of managers in our control group picked worker agency over managerial discretion in an incentivized choice. Yet there is limited evidence on the returns to worker agency. Our results provide a cautionary tale for firms considering such policies. While our worker democracy treatment increased worker attendance, firms were not able to convert this into greater output. Further, our data indicate that workers colluded to reward those who would split the rewards with them. These results also raise additional questions, such as how democratic processes in other firm decisions may impact outcomes, or whether different forms of voting rules lead to different actions being implemented (e.g. different workers being rewarded); these, and

[30]Since there is imbalance in the worker response rate for EL2, when this outcome was measured, we also compute Lee Bounds for workers' preferences. The 95% confidence interval for the manager arm is [-0.3067, -0.1368] and for the worker arm is [0.0707 , 0.2647], thus the bounds do not overlap for the two treatments. Note that these are computed without adjusting for strata or including LASSO adjustments, which would, if anything, make them narrower.

related questions, are interesting topics for future research.

While managerial discretion resulted in greater productivity than worker agency, discretion does not come without tradeoffs. In particular, the reductions in work-related interactions have concerning implications for knowledge spillovers between workers and workplace cohesion more generally. Moreover, our results indicate that managerial discretion increased workers' perceptions of favoritism. This is despite the fact that winners in the manager arm were positively selected on attendance and productivity, and the fact that managers generally chose to rotate rewards across workers, with just 7% of winners in this arm winning more than once. This suggests worker perceptions of favoritism may be difficult to change when rewards are allocated by managers. An open question, which future research could investigate, is whether the gains in productivity from the manager arm would have been larger had they not been accompanied by perceptions of favoritism.

Finally, the sharing of rewards in exchange for votes in the worker arm highlights the strength of informal contracting between workers and its potential to interact with workplace incentives. Workers appear able to sustain such arrangements despite short-run incentives for winners to renege and keep the full reward, consistent with the presence of repeated interactions or social enforcement in the workplace. Such arrangements can interact with workplace democracy initiatives, weakening the link between rewards and behaviors firms might like to incentivize. More generally, these results underscore that the effectiveness of workplace policies depends not only on their formal structures, but also on how workers collectively respond to and potentially circumvent them. Understanding interactions between formal incentives and informal contracting in the workplace remains an important direction for future research.

References

Addison, John T, Paulino Teixeira, and Thomas Zwick. 2010. "German works councils and the anatomy of wages." *ILR Review*, 63(2): 247–270.

Aghion, Philippe, Nicholas Bloom, Brian Lucking, Raffaella Sadun, and John Van Reenen. 2021. "Turbulence, firm decentralization, and growth in bad times." *American Economic Journal: Applied Economics*, 13(1): 133–169.

Alexander, Diane. 2020. "How do doctors respond to incentives? unintended consequences of paying doctors to reduce costs." *Journal of Political Economy*, 128(11): 4046–4096.

Andrabi, Tahir, and Christina Brown. 2025. "Subjective versus Objective Incentives and Employee Productivity." Working Paper.

Arnold, David, Will Dobbie, and Peter Hull. 2020. "Do Employees Benefit from Worker Representation on Corporate Boards?"

Bandiera, Oriana, Iwan Barankay, and Imran Rasul. 2013. "Team incentives: Evidence from a firm level experiment." *Journal of the European Economic Association*, 11(5): 1079–1114.

Bandiera, Oriana, Michael Carlos Best, Adnan Qadir Khan, and Andrea Prat. 2021. "The allocation of authority in organizations: A field experiment with bureaucrats." *The Quarterly Journal of Economics*, 136(4): 2195–2242.

Belloni, Alexandre, Victor Chernozhukov, and Christian Hansen. 2014. "Inference on Treatment Effects after Selection among High-Dimensional Controls." *Review of Economic Studies*, 81(2): 608–50.

Blandhol, Christine, Magne Mogstad, Peter Nilsson, and Ola L Vestad. 2020. "Who Benefits from Worker Representation on Corporate Boards?" National Bureau of Economic Research.

Boudreau, Laura. 2024. "Multinational enforcement of labor law: Experimental evidence on strengthening occupational safety and health committees." *Econometrica*, 92(4): 1269–1308.

Brown, Christina, and Tahir Andrabi. 2020. "Inducing positive sorting through performance pay: Experimental evidence from Pakistani schools." *University of California at Berkeley Working Paper*, 3.

Burgess, Simon, Carol Propper, Marisa Ratto, and Emma Tominey. 2017. "Incentives in the public sector: Evidence from a government agency."

Cai, Jing, and Shing-Yi Wang. 2022. "Improving management through worker evaluations: Evidence from auto manufacturing." *The Quarterly Journal of Economics*, 137(4): 2459–2497.

Castro, Silvia, Hoa Ho, and Maren Mickeler. 2025. "Making Help Visible: Experimental Evidence from a Recognition Program in the Workplace." ESSEC Business School Research Paper Working Paper SSRN 5223745.

Coviello, Decio, Erika Deserranno, and Nicola Persico. 2022. "Minimum wage and individual worker productivity: Evidence from a large US retailer." *Journal of Political Economy*, 130(9): 2315–2360.

Dal Bó, Ernesto, Frederico Finan, Nicholas Y Li, and Laura Schechter. 2021. "Information technology and government decentralization: Experimental evidence from paraguay." *Econometrica*, 89(2): 677–701.

De Janvry, Alain, Guojun He, Elisabeth Sadoulet, Shaoda Wang, and Qiong Zhang. 2023. "Subjective performance evaluation, influence activities, and bureaucratic work behavior: Evidence from China." *American Economic Review*, 113(3): 766–799.

Delfgaauw, Josse, Robert Dur, Joeri Sol, and Willem Verbeke. 2013. "Tournament incentives in the field: Gender differences in the workplace." *Journal of Labor Economics*, 31(2): 305–326.

Deloitte. 2023. "2023 Global Human Capital Trends: New Fundamentals for a Boundaryless World." *https://www.deloitte.com/us/en/insights/topics/talent/human-capital-trends/2023.html*, Deloittes 2023 Global Human Capital Trends survey polled 10,000 business and HR leaders across every industry, with 105 countries participating :contentReference[oaicite:1]index=1.

Deserranno, Erika, Philipp Kastrau, and Gianmarco León-Ciliotta. 2025. "Promotions and productivity: the role of meritocracy and pay progression in the public sector." *American Economic Review: Insights*, 7(1): 71–89.

Deserranno, Erika, Stefano Caria, Philipp Kastrau, and Gianmarco León-Ciliotta. 2022. "The allocation of incentives in multi-layered organizations."

Englmaier, Florian, Stefan Grimm, Dominik Grothe, David Schindler, and Simeon Schudy. 2024. "The Efficacy of Tournaments for Nonroutine Team Tasks." *Journal of Labor Economics*, 42(4): 921–948.

Fairris, David, and Philippe Askenazy. 2010. "Works councils and firm productivity in France." *Journal of Labor Research*, 31(3): 209–229.

Freeman, Richard B, and Edward P Lazear. 1995. "An economic analysis of works councils." In *Works councils: Consultation, representation, and cooperation in industrial relations*. 27–52. University of Chicago Press.

Friebel, Guido, Matthias Heinz, Miriam Krueger, and Nikolay Zubanov. 2017. "Team Incentives and Performance: Evidence from a Retail Chain." *American Economic Review*, 107(8): 2168–2203.

Gorton, Gary, and Frank A Schmid. 2004. "Capital, labor, and the firm: A study of German codetermination." *Journal of the European Economic Association*, 2(5): 863–905.

Hagenbach, Jeanne, and Rachel Kranton. 2025. "Competition, Cooperation, and Social Perceptions." *The Economic Journal*, ueaf032.

Harju, Jarkko, Simon Jäger, and Benjamin Schoefer. 2025. "Voice at work." *American Economic Journal: Applied Economics*, 17(3): 271–309.

Hoffman, Mitchell, Lisa B Kahn, and Danielle Li. 2018. "Discretion in hiring." *The*

Quarterly Journal of Economics, 133(2): 765–800.

Jäger, Simon, Benjamin Schoefer, and Jörg Heining. 2021. "Labor in the Boardroom." *The Quarterly Journal of Economics*, 136(2): 669–725.

Kala, Namrata. 2024. "The impacts of managerial autonomy on firm outcomes." *Econometrica*, 92(6): 1777–1800.

Kala, Namrata, and Madeline McKelway. 2025. "The Power of Persuasion: Causal Effects of Household Communication on Women's Employment." NBER Working Paper 33747.

Kessler, Ronald C., Peggy R. Barker, Lisa J. Colpe, Joan F. Epstein, Joseph C. Gfroerer, Eva Hiripi, Mary J. Howes, Sharon-Lise T. Normand, Ronald W. Manderscheid, Ellen E. Walters, and Alan M. Zaslavsky. 2003. "Screening for serious mental illness in the general population." *Archives of General Psychiatry*, 60(2): 184–189.

Khan, Adnan Q, Asim Ijaz Khwaja, and Benjamin A Olken. 2019. "Making moves matter: Experimental evidence on incentivizing bureaucrats through performance-based postings." *American Economic Review*, 109(1): 237–270.

Kim, E Han, Ernst Maug, and Christoph Schneider. 2018. "Labor representation in governance as an insurance mechanism." *Review of Finance*, 22(4): 1251–1289.

Knez, Marc, and Duncan Simester. 2001. "Firm-wide incentives and mutual monitoring at Continental Airlines." *Journal of Labor Economics*, 19(4): 743–772.

Kuhn, Peter, and Lizi Yu. 2025. "Kinks as goals: Accelerating commissions and the performance of sales teams." *Management Science*, 71(6): 4622–4642.

Lazear, Edward P. 2000. "Performance pay and productivity." *American Economic Review*, 90(5): 1346–1361.

Leaver, Clare, Owen Ozier, Pieter Serneels, and Andrew Zeitlin. 2021. "Recruitment, effort, and retention effects of performance contracts for civil servants: Experimental evidence from Rwandan primary schools." *American economic review*, 111(7): 2213–2246.

Leuven, Edwin, Hessel Oosterbeek, Joep Sonnemans, and Bas Van Der Klaauw. 2011. "Incentives versus sorting in tournaments: Evidence from a field experiment." *Journal of Labor Economics*, 29(3): 637–658.

Lowe, Matt, and Madeline McKelway. 2025. "Coupling Labor Supply Decisions: An Experiment in India." Working Paper.

McKelway, Madeline. 2022. "Women's Employment and Empowerment: Descriptive Evidence." *AEA Papers and Proceedings*, 112: 54145.

McKelway, Madeline. 2025*a*. "How Does Women's Employment Affect Their Time Use? Evidence from a Randomized Encouragement Design in India." Working Paper.

McKelway, Madeline. 2025*b*. "Women's Self-Efficacy and Economic Outcomes: Evidence from a Two-Stage Experiment in India." Working Paper.

Neal, Derek. 2011. "The design of performance pay in education." In *Handbook of the Economics of Education*. Vol. 4, 495–550. Elsevier.

NITI Aayog. 2018. *SDG India Index.* NITI Aayog.

Sandvik, Jason J, Richard E Saouma, Nathan T Seegert, and Christopher T Stanton. 2020. "Workplace knowledge flows." *The Quarterly Journal of Economics*, 135(3): 1635–1680.

Sandvik, Jason, Richard Saouma, Nathan Seegert, and Christopher Stanton. 2021. "Employee Responses to Compensation Changes: Evidence from a Sales Firm." *Management Science*, 67(12): 7687–7707.

Scholz, Robert, and Sigurt Vitols. 2019. "Board-level codetermination: A driving force for corporate social responsibility in German companies?" *European Journal of Industrial Relations*, 25(3): 233–246.

Schwarzer, Ralf, and Matthias Jerusalem. 1995. "Generalized Self-Efficacy Scale." In *Measures in Health Psychology: A User's Portfolio. Causal and Control Beliefs.* , ed. John Weinman, Stephen C. Wright and Marie Johnston, 35–7. Windsor, England:NFER-NELSON.

Spector, Paul. 1988. "Development of Work Locus of Control Scale." *Journal of Occupational Psychology*, 61: 335–340.

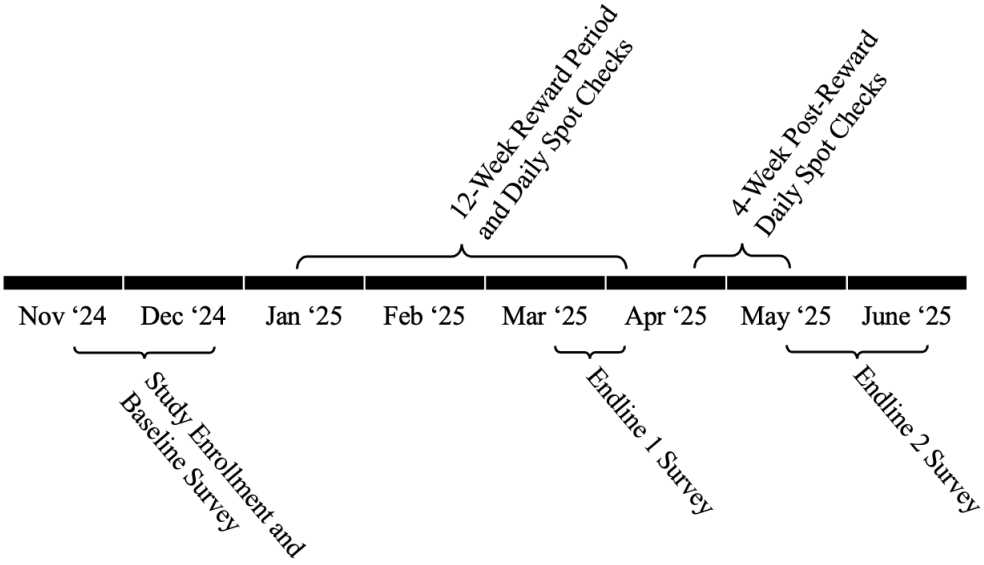
WorldatWork. 2019. "Trends in Employee Recognition." *Technical report, WorldatWork (survey conducted February 2019, published 2019)*, Underwritten by Maritz Motivation; based on a February 2019 survey of WorldatWork members :contentReference[oaicite:1]index=1.

Figures and Tables

Figure 1: Production of a Hand-Knotted Carpet

Notes: This image visualizes the production process for a hand-knotted carpet. In it, three women are seated at a loom and weaving a carpet.

Figure 2: Study Timeline



Notes: This image visualizes the timeline of the study.

Figure 3: Reward Cycle Timeline

M	Attendance check (and reward ceremony for previous cycle)
Tu	Attendance check
W	Attendance check
Th	Attendance check
F	Attendance check
Sa	Attendance check
Su	Off
M	Attendance check
Tu	Attendance check
W	Attendance check
Th	Attendance check
F	Attendance check
Sa	Attendance check
Su	Off
M	Reward ceremony (and attendance check for next cycle)

Notes: This image visualizes the timeline of a typical reward cycle.

Table 1: Impacts on Attendance and Productivity

	Attendance (=1)	Knots (Res.), Unconditional	Knots (Res.), Conditional
	(1)	(2)	(3)
Manager	0.008	202.163	422.370
	(0.019)	(213.603)	(450.898)
Worker Vote	0.053***	-284.223	-503.720
	(0.019)	(214.078)	(416.666)
P-Val: M=W	0.024**	0.066*	0.072*
Data Structure	Worker-Date	Worker-Date	Worker-Date
Strata FE	Yes	Yes	Yes
Round FE	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes
Control Mean	0.483	-344.956	-725.890
N	190749	188149	90211

Notes: The outcomes are from the spot check data and are at the worker x date level. The outcome in column (1) is a dummy for attendance on a given day. The outcome in column (2) is the residualized knots woven, unconditional on attendance. The outcome in column (3) is the residualized knots woven, conditional on attendance. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: Interactions in the Workplace

	Work-related Interactions (=1) (1)	Social Interactions (=1) (2)	Talking to Manager (=1) (3)
Manager	-0.093***	-0.070	-0.009
	(0.025)	(0.051)	(0.007)
Worker Vote	-0.018	-0.018	-0.006
	(0.025)	(0.044)	(0.007)
P-Val: M=W	0.001***	0.268	0.698
Data Structure	Firm-Date	Firm-Date	Firm-Date
Strata FE	Yes	Yes	Yes
Round FE	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes
Number of Worker Control	Yes	Yes	Yes
Control Mean	0.237	0.405	0.033
N	8308	8308	8308

Notes: The outcomes are from the spot check data and are at the firm x date level. Each outcome equals one if at least one interaction of the listed type was observed anywhere in the firm on that date. The outcome in column (1) captures all work-related interactions. The outcome in column (2) captures social interactions. The outcome in column (3) captures conversations with the manager. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Descriptive Analysis of Winners

	Attendance Percentile	Knots (Res.) Percentile	Spot Check Work Interaction Percentile	Spot Check Social Interaction Percentile
	(1)	(2)	(3)	(4)
Manager	0.103***	0.035*	0.012	0.010
	(0.013)	(0.018)	(0.011)	(0.013)
Worker Vote	0.064***	0.004	0.020	0.042***
	(0.012)	(0.015)	(0.012)	(0.013)
P-Val: M=W	0.034**	0.188	0.657	0.071*
Data Structure	Winners-Round	Winners-Round	Winners-Round	Winners-Round
Strata FE	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes
Lasso BL Var	No	No	No	No
Control Mean	0.533	0.533	0.533	0.533
N	4525	4525	4525	4525

Notes: The outcomes are drawn from the spot check data, and are at the winner-round level. Each is expressed as a within firm-round percentile rank among all eligible workers, calculated by ranking individuals on the relevant measure (ties allowed) and dividing by the total number of eligible workers in that firm-round. Column (1) reports attendance percentiles based on the number of days attended. Column (2) reports percentiles of knots per day, winsorized at the 99th percentile and residualized for carpet characteristics. Column (3) reports the percentile of work-interaction frequency. Column (4) reports the percentile of social interactions. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Beliefs about Types of Weavers Who Won

	Productivity Traits (=1)	Effort/Attendance Traits (=1)	Helps Other Workers (=1)	Helps Manager (=1)	Non-productive (Worker-related) (=1)	Non-productive (Manager-related) (=1)	Any non-productive (=1)	Financial/Other hardship (=1)	Luck/ Karma (=1)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Manager	0.305***	0.365***	0.123***	0.014*	0.163***	0.148***	0.256***	0.005	-0.624***
	(0.047)	(0.043)	(0.046)	(0.008)	(0.050)	(0.041)	(0.051)	(0.006)	(0.040)
Worker Vote	0.235***	0.282***	0.216***	0.003	0.446***	0.015	0.471***	0.009*	-0.703***
	(0.038)	(0.038)	(0.041)	(0.006)	(0.043)	(0.037)	(0.041)	(0.005)	(0.036)
P-Val: M=W	0.164	0.050**	0.081*	0.282	0.000***	0.004***	0.000***	0.574	0.042**
Data Structure	Worker	Worker	Worker	Worker	Worker	Worker	Worker	Worker	Worker
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.237	0.243	0.126	0.003	0.196	0.049	0.197	0.008	0.738
N	1798	1798	1798	1798	1798	1798	1798	1798	1798

Notes: The outcomes are at the worker level. They are from a question on the first endline asking workers what types of workers generally won the rewards in their firm. Workers could choose multiple responses, and the outcomes are dummies (=1) for providing particular responses. The outcome in column (1) includes beliefs about technical productivity (namely, weaves many knots, weaves complex carpets, makes few mistakes, or doing non-weaving work well). The outcome in column (2) includes effort and reliability traits (working quickly, meeting deadlines, high attendance, trying hard, and taking initiative). The outcomes in columns (3)-(4) capture prosocial workplace behavior: helping other workers or helping the manager through work-related assistance. The outcome in columns (5)-(6) capture non-productive reasons, divided into co-worker-related factors (niceness, popularity, sharing rewards with workers, or campaigning for votes) and manager-related factors (being nice to, promising rewards to, or being favored by the manager). The outcome in column (7) pools all non-productive reasons. The outcome in column (8) captures financial or other hardship reasons. The outcome in column (9) captures luck, karma, or random chance. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Number of Winners

	Number of Rewards	Number of Repeated Winners
	(1)	(2)
Manager	-0.899	-1.118***
	(0.745)	(0.290)
Worker Vote	0.536	0.004
	(0.636)	(0.286)
P-Val: M=W	0.069*	0.000***
Data Structure	Firm	Firm
Strata FE	Yes	Yes
Lasso BL Var	Yes	Yes
Control Mean	10.049	1.732
N	124	124

Notes: The outcomes are from the Reward Ceremony data, and are at the firm-level. The outcome in column (1) is the number of winners across all rounds. The outcome in column (2) is the number of repeated winners per firm, aggregating across all rounds. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Robust standard errors reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Sharing Behavior and Motivations

	Winner Shared with Me (=1)	Reasons for Sharing				
	(1)	Friends/ Family (=1) (2)	Voted For Winner (=1) (3)	Helped With Work (=1) (4)	Made Them Look Good to Manager (=1) (5)	Luck Should be Shared (=1) (6)
Manager	-0.020	-0.001	0.048	0.027*	0.004	-0.116***
	(0.072)	(0.068)	(0.031)	(0.015)	(0.002)	(0.023)
Worker Vote	0.142***	-0.136***	0.377***	0.068***	0.001	-0.130***
	(0.053)	(0.047)	(0.034)	(0.019)	(0.001)	(0.026)
P-Val: M=W	0.007***	0.017**	0.000***	0.042**	0.241	0.484
Data Structure	Worker	Worker	Worker	Worker	Worker	Worker
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.717	0.465	0.004	0.000	0.000	0.130
N	2044	2043	2043	2043	2043	2043

Notes: The outcomes are from the second endline and are at the worker level. The outcome in column (1) is a dummy (=1) indicating whether the respondent received a share of another winner's reward. The outcomes in columns (2)-(6) are dummies for stated reasons for sharing: family or friendship ties (2), voting support (3), help with work (4), making the winner look good to the manager (5), and the belief that luck should be shared (6). "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Effect of Winning on Outcomes in the Next Fortnight

	Attendance (1)	Knots (Res.) (2)	Work-related Interactions (=1) (3)	Social Interactions (=1) (4)	Talking to Manager (=1) (5)
Winner	0.052	-356.281	0.009	0.047	-0.001
	(0.110)	(1080.154)	(0.024)	(0.052)	(0.009)
Data Structure	Worker x Round	Worker x Round	Worker x Round	Worker x Round	Worker x Round
Firm x Round FE	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes
Previous Fortnight Outcome Control	Yes	Yes	Yes	Yes	Yes
Runner-up Mean	7.080	-9291.748	0.379	1.232	0.047
N	4306	4306	4306	4306	4306

Notes: The outcomes are from the Spot Check data and are at the worker x round level. Each outcome is measured for a given worker and reflects their total activity over the next fortnight, excluding the day of the reward ceremony. All regressions control for the corresponding outcome measured over the previous two weeks, excluding the day of the reward ceremony. The sample includes only shortlisted workers (winners and runners-up) in each round. The outcome in column (1) reports the total number of days attended. The outcome in column (2) reports the total residualized knots woven. The outcomes in columns (3)-(5) report indicator variables for interaction types observed during spot checks: (3) all work-related interactions, (4) social interactions, and (5) conversations with the manager. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Effect of Winning on Outcomes in the Next Fortnight (Treatment Heterogeneity)

	Attendance (1)	Knots (Res.) (2)	Work-related Interactions (=1) (3)	Social Interactions (=1) (4)	Talking to Manager (=1) (5)
Winner	0.135	464.066	0.035	0.049	0.007
	(0.165)	(1303.562)	(0.031)	(0.082)	(0.014)
Winner x Manager	-0.310	-877.464	-0.109**	-0.072	-0.013
	(0.256)	(2555.486)	(0.046)	(0.109)	(0.019)
Winner x Worker Vote	0.004	-3039.755	0.017	0.094	-0.021
	(0.237)	(3279.145)	(0.074)	(0.133)	(0.021)
P-Val: W+WxM=0	0.370	0.850	0.028**	0.741	0.608
P-Val: W+WxW=0	0.416	0.394	0.445	0.174	0.349
P-Val: WxM=WxW	0.227	0.562	0.096*	0.191	0.685
P-Val: W+WxM=W+WxW	0.227	0.562	0.096*	0.191	0.685
Data Structure	Worker x Round	Worker x Round	Worker x Round	Worker x Round	Worker x Round
Firm x Round FE	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes
Previous Fortnight Outcome Control	Yes	Yes	Yes	Yes	Yes
Runner-up Mean	7.080	-9291.748	0.379	1.232	0.047
N	4306	4306	4306	4306	4306

Notes: The outcomes are from the spot check data and are at the worker x round level. Each outcome is measured for a given worker aggregated over the next fortnight, excluding the day of the reward ceremony. All regressions control for the corresponding outcome measured over the previous two weeks, excluding the day of the reward ceremony. The sample includes only shortlisted workers (winners and runners-up) in each round. The outcome in column (1) reports the total number of days attended. The outcome in column (2) reports the total residualized knots woven. The outcomes in columns (3)-(5) report indicator variables for interaction types observed during spot checks: (3) all work-related interactions, (4) social interactions, and (5) conversations with the manager. "P-Val: W+WxM=0" reports the p-value from a test that the sum of the coefficients on "Winner and Winner x Manager" is equal to zero. "P-Val: W+WxW=0" reports the p-value from a test that the sum of the coefficients on "Winner and Winner x Worker Vote" is equal to zero. "P-Val: WxM=WxW" reports the p-value from a test of equality between the coefficients on "Winner x Manager" and "Winner x Worker Vote". "P-Val: W+WxM=W+WxW" reports the p-value from a test of equality between the sums of coefficients on "Winner + Winner x Manager" and "Winner + Winner x Worker Vote". "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Survey Measures of Firm Culture

	Merit Index			Recognition Index	Collegiality Index
	Skill Important for Being Rewarded	Managerial Relationship Important	Worker Relationship Important		
	(1)	(2)	(3)	(4)	(5)
Manager	0.253***	0.268***	0.113*	0.116**	0.073
	(0.054)	(0.081)	(0.067)	(0.052)	(0.126)
Worker Vote	0.148**	0.056	0.149*	0.021	0.130
	(0.063)	(0.083)	(0.079)	(0.056)	(0.116)
P-Val: M=W	0.037**	0.011**	0.606	0.066*	0.641
Data Structure	Worker	Worker	Worker	Worker	Worker
Strata FE	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes
Control Mean	0.000	0.000	0.000	0.000	0.000
N	2272	2271	2268	2274	2274

Notes: Outcomes are from the combined endline surveys and are measured at the worker level. The sample uses first endline survey responses when available; otherwise, it uses the second endline responses for workers not surveyed in the first endline but surveyed in the second. The outcome in columns (1)-(3) report standardized measures constructed from 4-point Likert-scale items (1 = strongly disagree, 4 = strongly agree) based on agreement with the following questions: (1) whether hard work and skill are important for determining how workers are rewarded, (2) whether workers personal relationship with the owner/manager is important for determining how they are rewarded, and (3) whether workers personal relationships with each other are important for determining how they are rewarded. The outcome in column (4) reports the Recognition Index, a standardized index combining two 4-point Likert-scale survey questions on whether the respondent feels that the manager and other workers appreciate the work they do in the firm. The outcome in column (5) reports the Collegiality Index, a standardized index combining workplace competitiveness (4-point Likert scale, reverse coded), asking and giving work-related help in the past week (both 0/1), the number of coworkers listed as close, and the number of coworkers listed as someone they would ask for work-related help if they needed it. Effects on the components of the indices in columns (4) and (5) are reported in Table A.9. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 10: Preference for Worker versus Manager Allocation

	Picked Workers Vote (=1)	Picked Workers Vote (=1)
	(1)	(2)
Manager	-0.216***	-0.405***
	(0.044)	(0.103)
Worker Vote	0.134***	-0.014
	(0.037)	(0.093)
P-Val: M=W	0.000***	0.000***
Data Structure	Worker	Manager
Strata FE	Yes	Yes
Lasso BL Var	Yes	Yes
Control Mean	0.591	0.800
N	2045	122

Notes: The outcomes are from the second endline survey data. Column (1) is at the worker level and column (2) is at the manager level. The outcomes in columns (1) and (2) are dummy variables indicating whether the respondent preferred the worker-vote mechanism for allocating rewards (zero by construction for the control group). "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level in column (1), and robust standard errors are reported in column (2). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix A: Additional Tables and Figures

Table A.1: Baseline Characteristics

	Any Education (=1) (1)	Attendance Last Week (0-7) (2)	Common Subcaste (=1) (3)	Years of Experience (4)	Financial Status (1-10) (5)	Migrant (=1) (6)	Prefers Worker Allocate (=1) (7)	Log(Monthly Earnings) (8)
Manager	-0.020	-0.029	-0.016	0.105	-0.160	0.105*	0.052	0.073
	(0.038)	(0.023)	(0.058)	(1.122)	(0.132)	(0.061)	(0.038)	(0.052)
Worker Vote	0.027	-0.040*	0.031	-0.488	-0.123	0.163***	0.048	0.067
	(0.036)	(0.022)	(0.052)	(0.879)	(0.118)	(0.044)	(0.034)	(0.043)
P-Val: M=W	0.209	0.666	0.432	0.578	0.751	0.343	0.905	0.914
Data Structure	Worker	Worker	Worker	Worker	Worker	Worker	Worker	Worker
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	No	No	No	No	No	No	No	No
Control Mean	0.523	5.269	0.417	25.069	2.684	0.061	0.419	8.673
N	1554	1546	1554	1554	1552	1554	1529	1538

	Self-Reported Ability (1-10) (9)	Manager Relationship Important (1-4) (10)	Weaving Skill Important (1-4) (11)	Tokens Sent Dictator Game (0-5) (12)	Number Could Ask for Help (13)	Number Close to (14)	Workplace Competitive (1-4) (15)
Manager	0.148	-0.140	-0.059	0.008	-0.182	0.372	0.013
	(0.211)	(0.113)	(0.063)	(0.055)	(0.366)	(0.403)	(0.101)
Worker Vote	0.119	0.116	-0.006	-0.027	-0.137	0.036	0.141
	(0.180)	(0.093)	(0.051)	(0.047)	(0.366)	(0.415)	(0.095)
P-Val: M=W	0.892	0.038**	0.393	0.457	0.891	0.373	0.238
Data Structure	Worker	Worker	Worker	Worker	Worker	Worker	Worker
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	No	No	No	No	No	No	No
Control Mean	7.076	2.576	3.649	0.275	2.473	2.343	2.569
N	1546	1538	1543	1554	1554	1554	1546

Notes: The outcomes are from the baseline data, and are at the worker level. The outcome in column (1) reports a dummy (=1) for having ever attended school. The outcome in column (2) records self-reported attendance in the past week (0-7 days). The outcome in column (3) is a dummy (=1) for belonging to one of the most common subcastes, including Chamar (Jatav), Harijan, Goutam, Bharti, Rahdas, Kori, Bind, Mallah, Kebat, or Nishad. The outcome in column (4) records years of weaving experience. The outcome in column (5) is self-assessed financial status on a 1-10 scale, where higher values indicate being better-off financially. The outcome in column (6) is a dummy (=1) for reporting residence in the firm premises (which migrant workers sometimes do). The outcome in column (7) is a dummy (=1) if the respondent prefers reward to be allocated by the worker rather than the manager. The outcome in column (8) is the log of monthly weaving earnings. The outcome in column (9) records self-rated weaving ability on a 1-10 scale, where 1 indicates the least skill and 10 indicates being extremely skilled. The outcome in column (10) measures the perceived importance of the manager-worker relationship for rewards on a 4-point Likert scale (1 = Strongly disagree, 2 = Somewhat disagree, 3 = Somewhat agree, 4 = Strongly agree). The outcome in column (11) measures the perceived importance of weaving skill for rewards (1-4 scale, with the same anchors). The outcome in column (12) records the number of tokens sent in a dictator game (0-5). The outcome in column (13) is the number of coworkers the respondent reports being able to ask for help. The outcome in column (14) is the number of coworkers listed as being close to. The outcome in column (15) measures the perceived competitiveness of the workplace on a 1-4 Likert scale, with higher values indicating greater competitiveness. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2: Differences in Outcomes Between Winners and Runner-Up: Previous Fortnight

	Attendance (1)	Knots (Res.) (2)	Work-related Interactions (=1) (3)	Social Interactions (=1) (4)	Talking to Manager (=1) (5)
Winner	0.149*	904.949	-0.009	0.001	0.008
	(0.075)	(1776.969)	(0.028)	(0.058)	(0.009)
Data Structure	Worker x Round	Worker x Round	Worker x Round	Worker x Round	Worker x Round
Firm x Round FE	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes
Runner-up Mean	7.558	-3502.682	0.505	1.342	0.058
N	4306	4306	4306	4306	4306

Notes: The outcomes are from the spot check data and are at the worker x round level. Each outcome is measured for a given worker and reflects their total activity over the previous fortnight, excluding the day of the reward ceremony. The sample includes only shortlisted workers (winners and runners-up) in each round. The outcome in column (1) reports the total number of days attended. The outcome in column (2) reports the total residualized knots woven. The outcomes in columns (3)-(5) report indicator variables for interaction types observed during spot checks: (3) all work-related interactions, (4) social interactions, and (5) conversations with the manager. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.3: Differences in Outcomes Between Winners and Runner-Up: Previous Fortnight (Treatment Heterogeneity)

	Attendance (1)	Knots (Res.) (2)	Work-related Interactions (=1) (3)	Social Interactions (=1) (4)	Talking to Manager (=1) (5)
Winner	0.154	872.842	-0.015	-0.002	0.012
	(0.108)	(1956.484)	(0.034)	(0.088)	(0.009)
Winner x Manager	0.120	2014.463	-0.023	-0.065	-0.002
	(0.160)	(4131.185)	(0.058)	(0.107)	(0.018)
Winner x Worker Vote	-0.197	-2649.954	0.061	0.110	-0.021
	(0.202)	(5823.040)	(0.096)	(0.170)	(0.036)
P-Val: W+WxM=0	0.022**	0.429	0.434	0.263	0.516
P-Val: W+WxW=0	0.803	0.746	0.607	0.460	0.804
P-Val: WxM=WxW	0.129	0.480	0.412	0.268	0.623
P-Val: W+WxM=W+WxW	0.129	0.480	0.412	0.268	0.623
Data Structure	Worker x Round	Worker x Round	Worker x Round	Worker x Round	Worker x Round
Firm x Round FE	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes
Runner-up Mean	7.558	-3502.682	0.505	1.342	0.058
N	4306	4306	4306	4306	4306

Notes: The outcomes are from the spot check data and are at the worker x round level. Each outcome is measured for a given worker and reflects their total activity over the previous fortnight, excluding the day of the reward ceremony. The sample includes only shortlisted workers (winners and runners-up) in each round. The outcome in column (1) reports the total number of days attended. The outcome in column (2) reports the total residualized knots woven. The outcomes in columns (3)-(5) report indicator variables for interaction types observed during spot checks: (3) all work-related interactions, (4) social interactions, and (5) conversations with the manager. "P-Val: W+WxM=0" reports the p-value from a test that the sum of the coefficients on "Winner and Winner x Manager" is equal to zero. "P-Val: W+WxW=0" reports the p-value from a test that the sum of the coefficients on "Winner and Winner x Worker Vote" is equal to zero. "P-Val: WxM=WxW" reports the p-value from a test of equality between the coefficients on "Winner x Manager" and "Winner x Worker Vote". "P-Val: W+WxM=W+WxW" reports the p-value from a test of equality between the sums of coefficients on "Winner + Winner x Manager" and "Winner + Winner x Worker Vote". "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4: Endline Survey Response Rates

	EL1 Survey Completed (=1)	EL2 Survey Completed (=1)	EL 1 or EL2 Survey Completed (=1)	EL1 Survey Completed (=1)	EL2 Survey Completed (=1)	EL 1 or EL2 Survey Completed (=1)
	(1)	(2)	(3)	(4)	(5)	(6)
Manager	-0.003	-0.080**	-0.036	-0.000	0.005	0.025
	(0.034)	(0.040)	(0.027)	(0.032)	(0.031)	(0.022)
Worker Vote	-0.021	-0.057*	-0.019	0.024	0.029	0.024
	(0.033)	(0.034)	(0.026)	(0.026)	(0.025)	(0.022)
P-Val: M=W	0.580	0.586	0.557	0.362	0.419	0.983
Data Structure	Worker	Worker	Worker	Manager	Manager	Manager
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	No	No	No	No	No	No
Control Mean	0.657	0.771	0.822	0.976	0.976	0.976
N	2847	2847	2847	124	124	124

Notes: The outcomes are from the first and second endline surveys (EL1 and EL2, respectively). Columns (1)-(3) report worker-level outcomes, and columns (4)-(6) report the same outcomes measured at the manager (firm) level. The sample in columns (1)-(3) includes all workers ever observed during a spot check in the 12-week intervention period. The outcome in column (1) is a dummy equal to 1 if the worker completed the first endline survey. The outcome in column (2) is a dummy equal to 1 if the worker completed the second endline survey. The outcome in column (3) is a dummy equal to 1 if the worker completed either of the two surveys. The sample in columns (4)-(6) includes all managers (or, equivalently, all firms). The outcomes in columns (4)-(6) mirror the outcomes in columns (1)-(3), but define completion at the manager (firm) level. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.5: Eligibility, Earnings, Entry and Retention

	Eligible (=1) (1)	Daily Earning (2)	Late Entrants (post week 2) (3)	Early Exits (post week 2) (4)
Manager	-0.003	28.456**	0.178	0.062
	(0.021)	(12.799)	(0.888)	(0.254)
Worker Vote	0.045**	19.363*	-0.527	0.006
	(0.022)	(10.082)	(0.857)	(0.240)
P-Val: M=W	0.024**	0.436	0.469	0.806
Data Structure	Worker x Round	Worker	Firm	Firm
Strata FE	Yes	Yes	Yes	Yes
Round FE	Yes	No	No	No
Lasso BL Var	Yes	Yes	Yes	Yes
Control Mean	0.639	239.071	5.390	0.732
N	17082	2238	124	124

Notes: The outcomes are from the Spot Check data and the endline data. Column (1) is at the worker x round level, column (2) is at the worker level, and columns (3)-(4) are at the firm-level. The outcome in column (1) is a dummy (=1) indicating whether a worker was eligible in a given round of the reward ceremony. The outcome in column (2) is the winsorized, imputed daily earnings measure constructed from endline surveys. Daily earnings are imputed using respondents reported weekly earnings and pooled across the first and second endline surveys, using the second endline when the first endline is missing. The outcome in column (3) captures the number of workers who entered after the first two weeks of spot check, meaning they were absent in weeks 1-2 but appeared at least once in weeks 3-12. The outcome in column (4) captures the number of workers who exited after the first two weeks, meaning they were observed in weeks 1-2 but never appeared in weeks 3-12. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level in columns (1)-(2), and robust standard errors are reported for columns (3)-(4). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.6: Effects on Defects

	Any Defect (=1): Jan-March (1)	Any Defect (=1): Jan-March (2)
Manager	0.013	0.038
	(0.013)	(0.279)
Worker Vote	0.005	-0.127
	(0.012)	(0.277)
P-Val: M=W	0.563	0.528
Data Structure	Worker	Manager
Strata FE	Yes	Yes
Lasso BL Var	Yes	Yes
Control Mean	0.031	0.650
N	2051	122

Notes: The outcomes are from the second endline data. Column (1) is at the worker level and column (2) is at the manager level. The outcomes in columns (1) and (2) are dummies (=1) indicating whether any defect was reported in any month from January to March. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level in column (1) and robust standard errors are reported in column (2). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.7: Firm-Level Attendance and Productivity

	Number of Workers Present	Knots (Res.)
	(1)	(2)
Manager	-0.524	13230.513**
	(0.740)	(6064.951)
Worker Vote	-0.037	-4838.014
	(0.673)	(5401.805)
P-Val: M=W	0.541	0.005***
Data Structure	Firm-Date	Firm-Date
Strata FE	Yes	Yes
Round FE	Yes	Yes
Lasso BL Var	Yes	Yes
Control Mean	11.335	-7982.710
N	8308	8308

Notes: The outcomes are from the spot check data and are at the firm x date level. The outcome in column (1) is the number of workers present. The outcome in column (2) is the total residualized knots woven. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.8: Impacts on Managerial Presence and Behavior

	Manager Present on Weaving Floor (=1) (1)	Monitoring/ Supervising (=1) (2)	Helping Worker(s) (=1) (3)	Office Work (=1) (4)	Weaving Carpet (=1) (5)	Non-Weaving Work (=1) (6)	On Break (=1) (7)	Other (=1) (8)
Manager	0.006	-0.002	-0.001	-0.001	0.002	0.011	-0.025	0.000
	(0.032)	(0.028)	(0.011)	(0.014)	(0.026)	(0.019)	(0.025)	(0.003)
Worker Vote	0.014	0.012	-0.012	0.028	0.026	-0.005	-0.009	-0.004
	(0.034)	(0.029)	(0.010)	(0.018)	(0.029)	(0.017)	(0.027)	(0.003)
P-Val: M=W	0.826	0.651	0.301	0.077*	0.395	0.343	0.493	0.138
Data Structure	Firm-Date	Firm-Date	Firm-Date	Firm-Date	Firm-Date	Firm-Date	Firm-Date	Firm-Date
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.466	0.135	0.051	0.063	0.045	0.075	0.132	0.008
N	8308	8308	8308	8308	8308	8308	8308	8308

Notes: The outcomes are from the Spot Check data and are at the firm x date level. Each outcome is a dummy (=1) indicating that the manager engaged in the listed activity. The outcome in column (1) indicates that the manager was present on the weaving floor during the spot check. The outcomes in columns (2)-(8) indicate that at least one instance of the activity was observed that day: monitoring/supervising (2), helping workers (3), office work (4), weaving a carpet (5), non-weaving work (e.g., taana, chunai, jeri) (6), on break (7), or other (8). "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.9: Components of Recognition and Collegiality Indices

	Manager Appreciates (1)	Worker Appreciates (2)	Disagree with Competitive Workplace (3)	Asked for Help (4)	Gave Help (5)	Number Close to (6)	Number Ask for Help From (7)
Manager	0.089**	0.087	0.087	0.049	0.083	0.043	0.042
	(0.044)	(0.058)	(0.084)	(0.072)	(0.077)	(0.126)	(0.128)
Worker Vote	0.056	-0.007	0.025	-0.008	0.108	0.250**	0.090
	(0.050)	(0.054)	(0.078)	(0.065)	(0.086)	(0.111)	(0.117)
P-Val: M=W	0.442	0.076*	0.391	0.394	0.740	0.109	0.716
Data Structure	Worker	Worker	Worker	Worker	Worker	Worker	Worker
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2274	2273	2272	2274	2274	2228	2240

Notes: The outcomes in columns (1)-(3) report standardized measures constructed from 4-point Likert-scale items (1 = strongly disagree, 4 = strongly agree): (1) whether the respondent feels that the manager appreciates the work they do, (2) whether the respondent feels that other workers in the firm appreciate them, and (3) disagreement with a statement that the workplace is competitive (reverse coded from an item asking whether workers in the firm are competitive with each other). Columns (4) and (5) report standardized indicators (0/1) for whether, in the past week, the respondent (4) asked another worker for work-related help and (5) provided another worker work-related help. Columns (6) and (7) report standardized counts from roster questions: (6) the number of coworkers the respondent listed as being close to, and (7) the number of coworkers the respondent said they would ask for work-related help if they needed it. "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.10: Effects on Worker Psychology

	Locus of Control (1)	GSE (1-4) (2)	Self-Reported Weaving Ability (1-10) (3)	Nervous (1-5) (4)	Depressed (1-5) (5)
Manager	-0.004	0.025	0.103	-0.104	-0.009
	(0.053)	(0.037)	(0.185)	(0.067)	(0.088)
Worker Vote	0.037	-0.013	0.012	-0.107*	-0.035
	(0.054)	(0.037)	(0.143)	(0.063)	(0.074)
P-Val: M=W	0.460	0.311	0.597	0.962	0.754
Data Structure	Worker	Worker	Worker	Worker	Worker
Strata FE	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes
Control Mean	0.007	3.614	7.302	1.797	2.116
N	2274	2272	2273	2274	2273

Notes: Outcomes are from the combined endline surveys and are measured at the worker level. The sample uses first endline survey responses when available; otherwise, it uses the second endline responses for workers not surveyed in the first endline but surveyed in the second. The outcome in column (1) is a Work Locus of Control index, including three items from the Spector (1988) scale measuring beliefs about jobs in general, not just the current workplace. The three items, each measured on a 4-point Likert scale from strongly disagree to strongly agree are: (i) to make a lot of money you have to know the right people (reverse coded), (ii) people who perform their jobs well generally get rewarded, and (iii) the main difference between people who make a lot of money and people who make a little is luck (reverse coded). The outcome in column (2) is an item from the Schwarzer and Jerusalem (1995) General Self-Efficacy (GSE) scale that reflects agreement, on a 4-point Likert scale, with: I can solve most problems if I invest the necessary effort. The outcome in column (3) captures self-reported weaving ability on a 10-point scale (1 = lowest, 10 = highest). The outcomes in columns (4) and (5) measure nervousness and depression, respectively, using two questions based on items from the K6 (Kessler et al., 2003) that asked how often the respondent felt nervous and depressed during the past 30 days. Responses were recorded on a 5-point scale ranging from none of the time (1) to all of the time (5). "P-Val: M=W" reports the p-value from a test of equality between the coefficients on the manager arm and the worker-vote arm. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.11: Heterogeneity in Attendance and Productivity Effects (Firm-Level)

	Number of Workers Present	Knots (Res.)	Number of Workers Present	Knots (Res.)	Number of Workers Present	Knots (Res.)
	(1)	(2)	(3)	(4)	(5)	(6)
Manager	-0.459	14952.570**	-3.009***	-885.827	2.485**	21093.969*
	(0.873)	(6895.927)	(0.933)	(7645.662)	(1.162)	(11339.567)
Worker Vote	0.110	-6904.347	0.390	-4683.550	0.480	-6521.320
	(0.756)	(5887.558)	(0.935)	(8743.646)	(1.102)	(10043.200)
Female Center	-1.868	-45041.755***				
	(1.594)	(10459.895)				
Female Center X Manager	-0.376	-9958.416				
	(1.330)	(13263.406)				
Female Center X Worker Vote	-0.875	12378.326				
	(1.510)	(14185.102)				
Above Median Preferring Worker Vote			-1.581	-2918.492		
			(1.241)	(9799.429)		
Above Median Preferring Worker Vote X Manager			4.719***	24099.113		
			(1.719)	(15410.142)		
Above Median Preferring Worker Vote X Worker Vote			-0.931	-795.616		
			(1.708)	(12422.146)		
Above Median Manager Relationship Important					2.708**	8785.295
					(1.088)	(9763.037)
Above Median Manager Relationship Important X Manager					-6.617***	-17090.820
					(1.916)	(16245.600)
Above Median Manager Relationship Important X Worker Vote					-1.273	1675.746
					(1.544)	(13835.177)
P-Val: M+MxHetVar=0	0.410	0.660	0.176	0.043**	0.001***	0.623
P-Val: W+WxHetVar=0	0.567	0.672	0.656	0.472	0.375	0.525
Data Structure	Firm-Date	Firm-Date	Firm-Date	Firm-Date	Firm-Date	Firm-Date
Strata FE	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes
Lasso BL Var	Yes	Yes	Yes	Yes	Yes	Yes
Control Mean	11.335	-7982.710	11.335	-7982.710	11.335	-7982.710
N	8308	8308	8308	8308	8308	8308

Notes: The outcomes are from the spot check data and are at the firm x date level. The outcome in columns (1), (3), and (5) is the number of workers present. The outcome in columns (2), (4), and (6) is the total residualized knots woven. Heterogeneity is captured using three baseline indicators. "Female Center" equals one for loom centers classified as female at baseline. "Above Median Preferring Worker Vote" equals one if a firm is above the median (across firms) in the share of workers who prefer having weavers vote rather than the manager choosing. "Above Median Manager Relationship Important" equals one if a firm is above the median (across firms) in its average baseline agreement with the statement the manager relationship is important (1-4 Likert scale). "P-Val: M+MxHetVar = 0" reports the p-value from a test that the sum of the coefficients on "Manager" and "Manager times the respective heterogeneity variable" equals zero. "P-Val: W+WxHetVar = 0" reports the p-value from a test that the sum of the coefficients on "Worker Vote" and "Worker Vote times the respective heterogeneity variable" equals zero. "Lasso BL Var" indicates whether baseline control variables selected via Lasso are included in the specification. Standard errors are clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.