Pre-Analysis Plan: Fostering Organizational Citizenship Behavior: The Role of Public Recognition

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1 Introduction

Organizations commonly rely on their members to perform supportive tasks and behaviors that go beyond their formal employment contract and are not readily monitored or enforceable (Katz & Kahn, 1966). While supportive behaviors of employees – both directed towards colleagues but also the organization itself – have been found to come with a range of positive outcomes such as an increase in employee retention, individual well-being and organizational effectiveness (Podsakoff et al., 2009), firms continuously struggle to strategically manage and stimulate such behavior.

While research has shown that monetary incentives are one potential way to align individual goals with collective outcomes, recent studies indicate that they can also undermine their primary objectives (Sliwka et al., 2021; Ashraf et al., 2020). Specifically, extant work studying incentives for prosocial behaviors, such as supporting others at the workplace, has found that monetary rewards can sometimes backfire (Gneezy et al., 2011; Wagner et al., 2020).

In this paper, we aim to test a particular non-monetary lever of employees' supportive behavior at the workplace, that is, the influence of public recognition. Doing so, we draw on literature on organizational citizenship behavior (hereafter OCB) and employee recognition and awards.

Originating from early organizational behavior research, OCB represents discretionary behaviors that employees exhibit, which are commonly not formally contractible, but which contribute significantly to the organization's effective functioning. Examples include employees who help other coworkers, or voluntarily attending work-related events that help the organization (Podsakoff & MacKenzie, 2014). While OCB has been found to come with a range of positive outcomes such as a lower employee turnover intentions, a decrease in workplace absenteeism and an increase organizational effectiveness (Podsakoff et al., 2009), there is still a lack of clarity on how firms can strategically manage and stimulate employees' OCB.

We posit that managerial recognition can serve as a potential tool to foster OCB by signaling its value to both the firm and colleagues. To test this assumption we introduce a symbolic managerial recognition for OCB - a certificate of recognition awarded by management. Certificates can serve as a tool embodying a firm's recognition and acts as a managerial signal (Gallus et al., 2020), emphasizing the importance of OCB within the firm.

2 Experimental Design

We will study the effect of unannounced, public recognition of supportive behavior. Following the terminology of Bénabou & Tirole (2003, p. 504), unannounced, public recognition corresponds to "discretionary" or "ex post" rewards, as opposed to "promised" or "ex ante" contingent incentives (e.g., innovation prizes).

More specifically, we introduce a symbolic managerial recognition for OCB - a certificate of recognition awarded by management. Non-monetary rewards such as certificates and awards differ from monetary rewards mainly in that they impose little material cost on the giver; they do not require an exact definition and measurement of performance; they are less likely to crowd out the recipient's intrinsic motivation; and they are more suitable for establishing special ties of loyalty and respect between the giver and the recipient (Frey, 2007).

In this project, we will introduce a certificate that will recognize employees at the bank's branches for their supportive behaviors - both towards colleagues as well as the firm itself. Awardees will be selected based on both the evaluations of co-workers and supervisors. Details on the dimensions and exact criteria will be given bellow in section 2.3.

The primary objective of this research is to causally identify and quantitatively assess the impact of publicly awarding supportive behaviors at the workplace on employee recognition and OCB. By symbolically rewarding supportive behaviors of employees, our study aims to investigate how making such voluntary contributions visible and appreciated affects various workplace outcomes. The intent is to understand whether and how valuing these traditionally undervalued behaviors influences both the individuals who perform them and the broader workplace environment.

2.1 Setting

We run our study in collaboration with one of the largest national banking institutions in East Africa, which encompasses 78 branches strategically located throughout one of its countries[1]. Each branch consists of two sections: credit, and banking. In our experiment we will focus on the credit section, since it represent the largest number of employees within branches.

[1]Two branches will not be part of the study, one is at the time of the pre-registration being created, the other one is a branch inside an university campus.

It's important to note that within the bank's operational framework, employee salaries are directly tied to individual productivity metrics. This distinct compensation model will be a key consideration in our analysis, as it directly influences employee behavior and performance.

Data collection will be conducted via Qualtrics. The research team in consultation with HR and the bank's Microfinance Strategy team will design a comprehensive survey focused on evaluating various aspects of staff productivity, organizational citizenship behavior and other outcome variables specified in Section 4. Our survey will be disseminated by the General Manager of Human Resources at the bank to all eligible branches, with an emphasis on encouraging active participation. The communication will frame the survey as part of a significant research initiative titled 'Research on Staff Productivity.' Participants will be allotted a 4-5 week period to complete the survey depending on response rates and in consultation with management. Any subsequent surveys will be scheduled and distributed in coordination with the bank's management to ensure timely and efficient data collection, aligning with the ongoing operations of the branches

2.2 Intervention–Recognition of OCB

Organizational Citizenship Behavior (OCB) usually falls outside of the incentive scheme of firms as OCB represents discretionary behaviors that employees exhibit, which are not formally contractible but which can be beneficial for firms. Due to their specific nature, such behaviors commonly go unseen and remain in the realm of *non-promotable tasks*.

In this project, we propose that signaling to employees the value of OCB by publicly recognizing such behavior can foster a more collaborative workplace culture in which OCB becomes more frequent and which comes with a range of accompanying positive consequences for the firm. To do so, we test the influence of providing certificates to employees.

We randomize branches to two treatment groups: Certificate, and No certificate. In the treated branch "Certificate", we roll out an award program that aims to symbolically recognize the most supportive employees in the branch. In the untreated branch "No Certificate", the employees will continue working as usual and do not get informed about the award program.

1. No Certificate: Employees in these untreated branches do not get exposed to the certificate program on OCB. They will answer our surveys, however, they are not informed about the program.

2. Certificate: Employees in these treated branches will experience the awarding of at least one certificate in their branch. The details on the procedure of the program are provided in Section 2.3.

2.3 Provision of Certificate

The primary objective of the provision of the certificate is to recognize and appreciate employees for their supportive behaviors and to send a signal from the management of the organization underscoring the importance of these behaviors.

Certificates will be handed to employees through their respective managers. This approach ensures that the recognition is both formal and has the endorsement of the managerial staff from the branch. The certificate will be signed by the Managing Director of the bank and the General Manager of Human Resources.

The certificate will be printed on A4 and framed. In the text, the certificate will specifically "honor outstanding support to colleagues and exemplary dedication to the bank". Further, it will also bear information on the year and branch.

Number of certified employees: We certify 20 percent of employees in the credit team of each branch in our treatment group. If teams are very small, we certify at least one person. By certifying a relative amount of members per team we can ensure that in every branch in our treatment employees have an equal opportunity for being recognized for their supportive behavior, irrespective of actual team size.

Selection procedure: To select the 20 percent of employees of each branch that are considered most supportive we will combine both peer and supervisor rating information on employees' supportive behaviors at the workplace.

For the supervisor rating we will use survey information derived from the following question: "The bank closely tracks credit officers' productivity metrics. However, beyond these metrics, officers often engage in invaluable activities that are not outlined in their formal job descriptions. For example, they mentor junior staff, assist peers, or voluntarily attend events that help *(name of firm)*'s image. While not directly measured, these contributions can significantly impact the bank's success and team cohesion. For each credit officer under your supervision, please indicate how frequently they voluntarily take on these beneficial activities." Supervisors are then asked to rate each of their supervised employees on a scale from 0 (very rarely) to 100 (very frequently).

For the peer rating we will rely on two types of distinct information derived from our survey. First, we access information on employees' help network. To do so, we ask the following question: "From which credit officers (in your team) do you receive frequent personal or professional help?". Employees can select from a list of colleagues in their credit team to answer this question (multiple selection allowed). Second, we use information on employees' most supportive colleague. Doing so, we rely on participants' answers to the following question: "Of the colleagues selected, who is the most supportive and always ready to help?". Employees can choose a single colleague from the list of names selected in the answer to the help network question mentioned above.

After obtaining both supervisor and peer ratings, we will calculate an overall supportive score for each employee. To do so, we first normalize supervisor ratings by dividing them by 100. The result is a number between 0 and 1. We then normalize both peer rating dimensions for each employee by first counting 1. the absolute number of times an employee has been mentioned helpful (help network question); and 2. the absolute number of times and employee has been mentioned most supportive (most supportive question). We divide both numbers by the number of colleagues in the credit team (i.e. credit team size subtracted by 1) for each branch. Again, the result are two numbers ranging between 0 and 1. Lastly, we combine supervisor and peer rating information by equally weighing all three to come up with a single supportive score for each employee.

A final restriction will be applied: only employees present at the branch during the scheduled award ceremony will be eligible for selection. Those who have been transferred or have resigned will be excluded, and the award will go to the next highest-scoring individual. Furthermore, in the subsequent analysis of the intervention's impact, employees who have resigned or been transferred will be excluded from the comparison group and they will be replaced by the next-highest scoring individual.

Distribution of certificates: Once the selection of certified employees is finished the certificate will be awarded to the respective employee(s) by the manager in a formal meeting where all branch members or members of the credit section (depending on the branch size) of the branch are supposed to be present.

2.4 Sampling

In the credit section of the bank, employees can occupy one of three different roles, each corresponding to their level in the hierarchy. At the base level, employees serve as credit officers. Within this designation, they may specialize as either personal bankers or business bankers. Whereas personal bankers are responsible for handling credits by ordinary customers, business bankers are designated to focus particularly on those customers with high volume loans. Given the high overlap of tasks executed by both role designations, we pool personal bankers and business bankers into the role of "officers". Second, each credit officer reports to one supervisor. Supervisors usually supervise 5-6 employees. Third, depending on branch size, supervisors report either to a Manager Business Banking (MBB) or the branch manager (BM). In our study, we aim to target credit officers and their workplace behavior in particular.

For our primary analysis, we will apply specific criteria to refine our sample as follows:

- Transfers: We measure baseline levels while individuals were at their original branch, but the treatment may occur after they've moved to a new branch. Therefore, we consider their status based on the branch they are located in at the time of the outcome survey assessment.

- Resigners: In our main analysis, we exclude individuals who have resigned from the company. However, for supplementary analyses, we reintegrate them to examine broader trends and impacts.

- Treatment of Individuals with Spillover Effects: Handling control group members who are aware of the program is crucial, as their knowledge may alter their behavior or perceptions. This awareness could particularly influence responses to non-incentivized survey questions, where individuals might attempt to improve their chances of receiving an award by overstating their collaborative efforts or help provided within their branch. To mitigate this, we have incorporated a question in the survey to gauge program awareness. Depending on their awareness, we may opt to exclude such individuals from the study to maintain the integrity of our data. This approach will also apply to those who transitioned from the treatment to the control group after the award program commenced, with the latter group being explicitly identified within our sample.

- Awardees: Awardees are determined by the highest scores and are eligible only if they have not been transferred after the award determination process.

- Non-Awardees and Control Group Definition: When defining our non-awardees and control group, we exclude individuals who have been transferred. However, this exclusion specifically applies to those who were transferred from the control group to the treatment group, to maintain the integrity of the control conditions.

These criteria help ensure that our analysis is conducted on a consistent and relevant sample, allowing for more accurate conclusions about the effects of our interventions.

2.5 Randomization

We implement matched-pair cluster randomization (MPCR), with the defining clusters being the bank branches where our units of interest (i.e. the employees) work. When researchers are unable to randomize treatment assignment to individuals and instead randomize treatments to clusters of individuals, estimation efficiency can decrease.

Focusing on the case of small samples in particular, Abadie & Imbens (2011) show that matched-pair randomization can increase power. Both Bruhn & McKenzie (2009)as well as Imai et al. (2009) support these findings. Taking into account the fact that we have only a limited number of branches (n=78), we apply MPCR to improve covariate balance for many variables at the same time and substantially increase the efficiency and power of our causal effect estimation.

Whereas Greevy et al. (2004) describe the application of optimal multivariate matching, we implement a less computationally intensive "optimal greedy algorithm" first described in King et al. (2007) and implemented by Bruhn & McKenzie (2009). The algorithm first forms pairs in such a way as to minimize the Mahalanobis distance between the values of all preselected covariates within pairs. Subsequently, one unit in each pair is randomly assigned to treatment and the other to control.

To match pairs, we will use information obtained from both the firms administrative data, as well as baseline survey data on the workplace behavior of employees in branches before our treatment takes place.

More specifically, we match branch-pairs based on the following covariates:

- Recent productivity metrics (Variance in NPR, Dispersion Volume);
- Branch size, gauged by credit officers and supervisors count in the credit section of a given branch;
- The share of business bankers in each branch;
- The gender composition of the branch's workforce;
- Employee perception on how much their workplace behavior is already recognized by management;
- Employee perception on how much branch members help and trust each other already.

Overall, we will have 39 pairs of branches that will be balanced across the above specified variables.

2.6 Procedures

To implement our experiment and collect the respective data, we adhered to the following procedure.

Pre-Treatment Baseline Survey: To capture employees' workplace experiences and sentiments before the start of our intervention, we will run a baseline survey. The survey will be administered to all credit employees in the month of November of 2023 until the first week of December of 2023. Depending on employees' respective role, we will administer different versions of the survey. On average the survey will take employees 10 minutes to finish. Participation will be voluntary.

The baseline survey will measure employees' perception of their current workplace climate, of the leadership at the firm, and their personal and professional networks. It will finish with questions on employees' demographics.

Treatment 1: Our treatment consists of an unannounced public recognition for employees' extraordinary supportive behavior at the workplace. To do so, we introduce a certificate to the 20 percent most supportive employees in the credit section of each branch. The roll out of our treatment will take place in calendar week 3-5 2024. Overall, 39 branches will be treated. Certificates will be awarded to employees in a public, branch-internal ceremony, whereby the management of the branch will hand out the certificate to the respective winners.

Post-Treatment 1 Midline Survey: To be able to measure the effect of our treatment on employees' subsequent OCB and workplace behavior in more general, we will run a first post-treatment midline survey in April 2024. Similar to the baseline survey, it will be administered to all credit employees and, again, include questions on employees' perception of their current workplace climate, leadership and their personal and professional networks. Further, we will include a section with an additional outcome (willingness to share) that only will be measured at midline (see section 4.2).

Further Treatment Interventions: We will conduct additional iterations of the intervention at least once in the second quarter of 2024, subject to approval from our partner firm. These iteration will involve repeating the previous interventions over time, alternating between a post-treatment survey and the provision of awards for treatment.

2.7 Power Calculations

To ensure that our study is adequately powered to detect a meaningful difference between our treatment and control groups, we conducted power calculations.

2.7.1 Assumptions

- **Effect Size:** The detectable effect size will be denoted as d.
- **Alpha Level:** We set our significance level (α) to 0.05.
- **Power:** We aim for a power $(1-\beta)$ of 0.80, indicating an 80% chance of detecting a true effect.
- **Intra-cluster Correlation (ICC):** We assume an ICC of ρ, which represents the proportion of the total variance that is attributable to the clustering.
- **Design Effect:** Given by $1+(m-1)\times\rho$, where m is the average cluster size. For our study, $m=15$, leading to a design effect of $1+(15-1)\times\rho$.
- **Adjusted Sample Size:** Due to the cluster design, the effective sample size is adjusted by the design effect. The required adjusted sample size per group is n_{adj}.

2.7.2 Calculation Method

We used Stata for our power calculations. The formula for the adjusted sample size, considering the cluster design, is:

$$n_{adj} = n \times \text{Design Effect} = n \times (1 + (m - 1) \times \rho)$$

Where:

- n is the sample size calculated as if individual randomization was used.
- m is the average cluster size (15 in our study).
- ρ is the intra-cluster correlation.

Steps for Power Calculation:

1. **Determine the Design Effect (DE):**
   The design effect accounts for the clustering in the design. It is calculated as:
   $$DE = 1 + (m - 1) \times \rho$$

2. **Determine the Effective Sample Size (ESS):**
   The effective sample size adjusts the total sample size for the design effect:
   $$ESS = \frac{n}{DE}$$
   Where n is the total number of individuals in the study.

3. **Determine the Variance for Matched Pairs:**
   The variance for the difference in means between matched pairs, taking into account the ICC and the cluster sizes, is:
   $$\sigma^2 = 2 \times \rho \times (\text{standard deviation})^2$$

4. **Calculate Power:**
   Using the effective sample size, the variance for matched pairs, and the expected effect size (difference in means), the power can be calculated using:
   $$\text{Power} = \Phi\left(\frac{\text{Effect Size} \times \sqrt{ESS}}{\sigma} - \Phi^{-1}(1 - \alpha)\right)$$
   Where Φ is the cumulative distribution function of the standard normal distribution, α is the significance level (0.05), and Effect Size is the expected difference in means between the treatment and control groups.

2.7.3 Adjusting for Varying Cluster Sizes

When cluster sizes vary, the design effect (DE) needs to be adjusted. The adjusted design effect, DE_{adj}, can be calculated using the coefficient of variation of cluster sizes (CV):

$$CV = \frac{\text{Standard Deviation of Cluster Sizes}}{\text{Mean Cluster Size}}$$

The adjusted design effect is then:

$$DE_{adj} = 1 + (m - 1) \times \rho \times (1 + CV^2)$$

Where:

- m is the average cluster size.
- ρ is the intra-cluster correlation.
- CV is the coefficient of variation of cluster sizes.

Steps to Adjust for Varying Cluster Sizes:

(a) **Calculate the Coefficient of Variation (CV) of Cluster Sizes:**
First, determine the standard deviation of the cluster sizes and divide it by the average cluster size.

$$CV = \frac{\text{Standard Deviation of Cluster Sizes}}{m}$$

(b) **Determine the Adjusted Design Effect DE_{adj}:**
Using the coefficient of variation, calculate the adjusted design effect.

$$DE_{adj} = 1 + (m - 1) \times \rho \times (1 + CV^2)$$

(c) **Determine the Adjusted Effective Sample Size ESS_{adj}:**
The adjusted effective sample size takes into account the adjusted design effect:

$$ESS_{adj} = \frac{n}{DE_{adj}}$$

Where n is the total number of individuals in the study.

(d) **Recalculate Power Using ESS_{adj}:**
Using the adjusted effective sample size, recalculate the power. The formula re-

mains the same, but replace ESS with ESS_{adj}.

$$\text{Power} = \Phi\left(\frac{\text{Effect Size} \times \sqrt{ESS_{adj}}}{\sigma} - \Phi^{-1}(1-\alpha)\right)$$

3 Testable Hypothesis

In this section, we derive our main hypothesis on how the awarded certificates affect employees, namely, organizational citizenship behavior. Our empirical predictions on the intervention – recognizing employees' supportive behavior at the workplace – are as follows:

0. The certificates increases recognition of those awarded
1. The certificates increases organizational citizenship behavior ...
   - 1.a ...through augmented levels of horizontal recognition
   - 1.b ...through augmented levels of vertical recognition

4 Outcomes

Our analysis will focus on three main points:

1. Assessing the effectiveness of this specific award in enhancing the awardees' sense of recognition for the non-promotable behavior of supporting others
2. Evaluating whether recognizing supportive employees influences this desired behavior,
3. Determining the significance of different sources of recognition—by peers, or by top management.

4.1 Recognition

First, we aim to understand whether receiving the award makes awardees feel valued and recognized in their roles. We will also examine changes in recognition at different levels. For this purpose, we will rely on the following self-reported survey metrics:

- *"I feel that many tasks I perform are noticed and recognized by the management at Head Office."* - This is to measure changes in perceptions of recognition from top management.
- *"I feel that many tasks I perform are noticed and recognized by the management in my branch."* - This is to measure changes in perceptions of recognition from direct managers.

- *"I feel that many tasks I perform are noticed and recognized by other PBs and BBs in my branch."* - This is to measure changes in perceptions of recognition by colleagues at the same level.

The award in our study is multilevel as it involves different managerial levels and even peers. This may affect perceptions at various levels. We intend to study these effects by comparing the selected awardees in the treatment group with the selected-awardees in the control group (that did not receive the award).

Additionally, we will examine the differences between the treatment and control groups, focusing specifically on those not selected to receive the award. Any employee transferred from the treatment to the control group will be excluded from our analysis.

Given the anticipated noise in our dependent variable originating from the inherent characteristics of self-reported, unincentivized survey questions, we will control for demographic factors such as tenure and gender, alongside baseline survey controls. These controls will include the baseline of the dependent variable (when available), baseline trust in the management team (*I trust the management team at my branch*), clarity level (*it is clear what I need to do to advance my career*), and the learning environment (*Officers here feel safe to discuss and learn from their own mistakes as well as the mistakes of others*). Our aim is to soak up as much noise as possible from the dependent variable. We will also dummy out observations missing baseline metrics to not drop them. In addition, we will provide a secondary specification dropping those whose recognition level was 100/100 both at baseline and mid/endline, as they are already at the maximum and cannot be moved.

Our primary specification will be a simple regression of the post treatment values on the treatment dummy as follows:

$$y_{it=1} = \alpha + \beta_1 treat_b + \gamma y_{t=0} + \Phi X_i + \epsilon_{itb} \tag{1}$$

where y_{itb} is the recognition question for individual i, time t (midline or endline), $treat_b$ is an indicator that takes on the value 1 if the individual belongs to a branch that has been treated and 0 otherwise, $\gamma y_{t=0}$ represents the baseline values of the dependent variable (will be added when available), and X_i represents the vector of employee controls collected at baseline as mentioned above. β_1 depicts our treatment effect. Standard errors will be clustered at the level of randomization Abadie et al. (2022).

The sample will be split in the regression above by selected to be awarded (selected and awarded vs. selected and not awardees) and not selected (in treat and control). It is important to note that the awarded employees are those that received the highest score and remain in their branch at the moment of the award, the selected for award but not awarded are those that would have won but they do not receive an award because they are in the control. Those non-awarded will be the ones that remain in the control group at the time of the survey. Additionally, in cases where the results are counter intuitive —for instance, if the award diminishes recognition—we will also report a difference-in-differences regression to examine unintended effects on the control group. Given that the survey questions are not incentivized, it is plausible that some responses might be strategically influenced. The specification will be as follows:

$$y_{itb} = \alpha + \beta_1 treat_b + \beta_2 treat_b \times after_t + \beta_3 after_t + \Phi X_i + \epsilon_{itb} \tag{2}$$

where y_{itb} is the recognition question for individual i, time t, and branch b, $treat_b$ is an indicator that takes on the value 1 if the individual belongs to a branch that has been treated and 0 otherwise, $after_t$ is a time indicator which takes on the value 1 for observations after the intervention, where X_i represents the vector of employee controls collected at baseline as mentioned above. β_2 depicts our treatment effect. Standard errors will be clustered at the level of randomization. .

4.2 Willingness to Share

Our primary outcome seeks to assess whether the award changes the extent to which employees are willing to contribute to the public good. We proxy this by their willingness to invest time sharing knowledge and information that can potentially benefit their colleagues (horizontal knowledge sharing).

To capture willingness to share, in the midline survey, we will probe participants' willingness to invest their time in sharing knowledge with their colleagues. Specifically, we will present employees with a choice: after answering all questions in the main part of our survey they can opt either to extend the survey by contributing additional information that could benefit others or to conclude their participation. Opting to continue and provide further insights can be interpreted as a positive inclination towards contributing to the collective knowledge pool. The prosociality of their time investment will be made evident in the survey, employees will be invited to participate in a collaborative booklet and told that their *suggestions will be included in a collaborative booklet titled Personal Strategies for Shared Success, made up of valuable contributions of officers across the bank and shared at the end of the year with every* officer. Employees know that their participation will be anonymous and that this will help others.

We designate the decision to contribute, either "yes" or "no", as our initial primary outcome. Our analysis will employ a logistic regression where the dependent variable, the willingness to share, is coded as 0 for "no" and 1 for "yes". We will again include controls for survey-related factors–the same ones as those utilized in the recognition analysis such as trust and clarity–and demographic variables, including gender and tenure. Moreover, we will integrate fixed effects for pair matching (Fryer Jr, 2014) and adjust for cluster standard errors at the level of randomization Abadie et al. (2022).

The specification will be a logit regression (or OLS if there is no difference for better interpretability) as follows:

$$WTS = \beta_0 + \beta_1 \text{treat} + \gamma PairFE + \Phi X_i + \varepsilon \tag{3}$$

where ε denotes the error term and X_i represents the vector of employee controls collected at baseline and used throughout the project (tenure, gender, clarity, trust). Note that here we will pool all individuals that are at the time of the survey in the treated branches and compare them to the control. We will report full sample results and also look at heterogeneous differences by productivity levels and whether the person was awarded.

4.2.1 Mechanisms

Our intervention encompasses multiple layers of recognition:

- Horizontal: Colleagues play a key role in the selection process for award recipients. They not only vote for the awardees but also participate in the award ceremonies and choose among themselves those who are most helpful to others.
- Vertical - At the branch level: Supervisors are involved in the voting process, and branch management executes the award ceremonies.
- Vertical - Top Management: The firm's top management officially endorses the awards, signs them, and is responsible for their organization.

It is worthwhile, therefore, to discern which of these dimensions, if not all, contribute to an increased willingness to share among employees. To investigate this, we plan to introduce a variation in the intended audience of employees' shared contributions in the outcome survey. Due to power concerns, we will focus on two layers of recognition in particular: horizontal recognition by peers and vertical recognition by top management. We will compare the two to a no-recognition condition where any form of external, public recognition is absent. We randomly select participants into one of the three subgroups(**individual-level randomization**)[2]:

- *No-recognition*: In this subgroup employees learn that their contributions remain fully anonymous. Hence, contributions cannot be traced back to individuals and neither management nor peers are able to recognize individual contributors.

[2] We use the Qualtrics built in randomization with respondents evenly added across the three arms

- *Peer- recognition*: In the peer subgroup we inform employees that: "a list of contributors (names only, not the tips) will be shared among **the other officers in your branch**."

- *Head office - recognition*: In the head office subgroup we inform employees that "a list of contributors (names only, not the tips) will be shared with **head office management**."

This distinction aims to discern any potential differences in employees' willingness to share based on the respective audience and the observability of such behavior and will help us understand different mechanisms at play.

The specification for the mechanisms will be a logit regression (or OLS for better interpretability if there is no difference) with the form:

$$WTS = \beta_0 + \beta_1 \text{treat} + \beta_2 mechanism + \beta_3 treat \times mechanism + \gamma PairFE + \Phi X_i + \varepsilon \quad (4)$$

where ε denotes the error term clustered at the level of randomization, and X_i represents the vector of employee controls collected at baseline and used throught the project (tenure, gender, clarity, trust).

From an ethical perspective, while we aim to examine the effects of the perceived audience, we do not wish to introduce any unfairness with the study. This could potentially occur if an individual in the Head Office arm were to share information, and the researchers then informed Head Office management of her name, while another employee in the control group who also shared information remained anonymous. Even though this is unlikely to lead to career benefits, we want to minimize any risk. Therefore, we follow the approach introduced by Bursztyn et al. (2023). To ensure we do not explicitly deceive our participants, we inform those in the *head office-recognition* and *peer-recognition* arms that a list of contributors will be disclosed only if at least one officer from each branch participates. In practice, we focus on fewer branches than the total number, excluding a newly established branch and a special branch located within a university.

4.2.2 Contributions

To measure contributions we first present employees with a small case study of a prototypical young colleague struggling to hit her professional targets. Employees are then asked to share some advice and provide personal tips and strategies on how to overcome the challenges described in the case study. Further, going beyond the specifics of the case, in a second question we ask employees to share more general actionable tips and personal strategies that might help other employees throughout the bank irrespective of their career level.

To analyze employees' contributions, and thus the sharing outcomes, we differentiate between the quantity and quality of contributions.

- **Quantity**: We capture objective metrics of the employees contribution. In particular, the number of tips given, the length of the tips (number of characters) and the time spent working on them (as per the Qualtrics time stamp option). If an employee did not submit any suggestions, we code the quantity as zero.

- **Quality:** The quality of suggestions will be evaluated using both continuous and categorical measures. In a first step, each contribution will be assessed on a scale of zero to one hundred along four dimensions: 1. The degree to which the suggestion provides actionable guidance, 2. the degree to which the suggestions can be generalized to other contexts and situations, 3. the degree to which the suggestions represents out-of-the box solutions, and 4. the degree to which the suggestions overall can be perceived as helpful. In a second step, contributions will be categorized based on their content. We differentiate five categories:

  i. **Incoherent:** This category is for contributions that are confusing or lack a clear thread of thought. Contributions in this category don't form a coherent message, making it challenging to understand how they relate to improving productivity or other dimensions of officers' life.

  ii. **Purely Observational:** Contributions under this category provide a broad statement or observation without delving into specifics. They don't offer direct advice or steps for improvement, serving more as a commentary rather than a guide to enhancing it.

  iii. **Detailed without actionable guidance:** These contributions identify specific areas or methods for improving productivity or other dimensions of officers' lives but they do not provide detailed instructions or guidance on how to implement these ideas.

  iv. **Detailed with actionable guidance:** Unlike the previous category, these contributions not only identify areas for improvement but also include detailed guidance and clear, actionable steps that can be taken to implement the advice. This category is for contributions that provide a clear path forward.

  v. **Creative and unheard with actionable guidance:** This category is for contributions that present a novel or innovative solution to productivity improvement, accompanied by a clear and practical strategy for implementation. These contributions are both creative and actionable, with a clear plan for how they can be applied.

To conduct the evaluation of the contributions we will rely on two type of evaluators:

1. Human experts

2. AI based evaluations (Chat-GPT 4 or equivalent)

The evaluators will asses the quality[3] following the descriptions above. They will be blind to the treatment assignment and identity of the contributor.

We will consider two methods to handle missing observations. Method 1: If employee did not submit any suggestions, we code the quality as missing. In this first method, we compare the quantity and quality of submitted suggestions for the employees who agreed to share knowledge. Method 2: If employees did not submit any suggestions, we code the quality as zero. In the second method, we compare the quantity and quality of submitted suggestions for all employees, where an incoherent suggestion is evaluated as a better outcome than no suggestions at all. Method 2 will be our primary method.

The specification for the contributions will be of the same form as equation (2) but with the new dependent variable. We will use OLS for the continuous variables and ologit for the categorical variables.

4.3 Supportive Evidence

We will supplement the above results with additional data, including survey metrics, productivity figures, and personnel records provided by the firm. Below, we outline the information available to the researchers at the time of drafting this Pre-Analysis Plan.

4.3.1 Organizational Citizenship Behavior

Our intervention aims to influence prosocial behavior in the workplace, which encompasses employee actions that extend beyond the formally contracted tasks outlined in their job descriptions. While these behaviors are not formally contractible or incentivized, they can significantly benefit both peers and the organization.

Measuring prosocial behavior at the workplace is a complex undertaking since employees' daily interactions are hard to capture. The primary metric described above, willingness to share, will serve as our main outcome measure. In addition, we will collect a range of self-reported survey metrics to additionally document our findings. It's important to note, however, that these non-incentivized metrics are susceptible to strategic responses or unforeseen effects, which is why they are not going to be part of the core of the paper. The survey metrics are as follows:

First, respondents are asked how many times they received help in the last month with four activities (not included their formal job requirements). These metrics were identified with the help of the firm's leadership. The tasks include *preparing for presentations at committees*, *recovering*, *analysis*, and *personal support*. Employees first report how often

[3] and also the quantity for the "number of tips"

they received help on these four activities, followed by how often they provided help on the same jobs. These metrics will be compared between treatment and control branches, focusing particularly on junior or low productive employees.

Second, participants will be asked OCB metrics similar to the validated metrics first introduced by Podsakoff et al. (1990). We will measure two main dimensions of OCB: the interpersonal and the organizational. The interpersonal dimension of OCB refers to the supportive and collaborative behaviors that employee endeavor in the interpersonal relationships with their peers, supervisors, and managers, e.g., mentoring juniors, supporting managers. The organizational dimension of OCB captures the extra miles that employee is willing to take to signal the organizational commitment and loyalty, e.g., attending events that promote company's image.

We therefore adjust the validated metrics to capture these two dimensions. For interpersonal support we will use *In this branch, other officers often assist me with challenges, even if it is not part of their job description*, for organizational commitment we ask *Other officers in this branch attend events or meetings that are not mandatory but enhance the firms image*

4.3.2 The Award

Additionally, our questionnaire will encompass questions aimed at gauging the sentiments within awarded branches, particularly focusing on the perceptions of those who were not awarded. Our objective is to ascertain whether non-awardees feel unjustly treated or if the awards foster feelings of jealousy. These inquiries will target not only general respondents but also management personnel. For instance, one of the questions we plan to include is: *"The individual chosen for the award in my branch was very **deserving** of this recognition."*

4.3.3 Productivity and Well-being

Should the firm provide productivity data, our analysis will concentrate on the performance of both awardees and non-awardees (which are likely to be less productive employees). This approach aims to evaluate whether the intervention benefits those in need as well as the recipients of the awards. Additionally, we will leverage any available metrics to gain insights into employee turnover and subjective well-being.

- **Productivity**: We will examine individual performance indicators, such as the number of loans disbursed, NPR, and disbursed volume. The availability of specific metrics will depend on the information the partner firm chooses to share as the study progresses.[4]

- **Subjective Well-Being**, measured by the WHO-5 index:

[4] The scope of data sharing is subject to the partner firm's discretion.

a. "I have felt cheerful and in good spirits."

b. "I have felt calm and relaxed."

c. "I have felt active and vigorous."

d. "I woke up feeling fresh and rested."

e. "My daily life has been filled with things that interest me."

Organizational Culture: Following Azulai et al. (2020), we measure organizational culture at the branch level.

- Teamwork climate: "*Other officers at the branch only work for themselves*"
- Trust in Management: "*I trust the management team at my branch*"

4.4 Multiple Hypothesis Testing

We will use the FDR to correct for Multiple Hypothesis Testing.

References

Abadie, A., S. Athey, G. W. Imbens, & J. M. Wooldridge (2022): "When Should You Adjust Standard Errors for Clustering?*," *The Quarterly Journal of Economics*, 138, 1–35.

Abadie, A. & G. W. Imbens (2011): "Bias-corrected matching estimators for average treatment effects," *Journal of Business & Economic Statistics*, 29, 1–11.

Ashraf, N., O. Bandiera, E. Davenport, & S. S. Lee (2020): "Losing prosociality in the quest for talent? Sorting, selection, and productivity in the delivery of public services," *American Economic Review*, 110, 1355–1394.

Azulai, M., I. Rasul, D. Rogger, & M. J. Williams (2020): "Can Training Improve Organizational Culture?" *Experimental Evidence from Ghana's Civil Service.*

Bénabou, R. & J. Tirole (2003): "Intrinsic and extrinsic motivation," *The Review of Economic Studies*, 70, 489–520.

Bruhn, M. & D. McKenzie (2009): "In pursuit of balance: Randomization in practice in development field experiments," *American Economic Journal: Applied Economics*, 1, 200–232.

Bursztyn, L., G. Egorov, I. Haaland, A. Rao, & C. Roth (2023): "Justifying Dissent*," *The Quarterly Journal of Economics*, 138, 1403–1451.

Frey, B. S. (2007): "Awards as compensation," *European Management Review*, 4, 6–14.

Fryer Jr, R. G. (2014): "Injecting charter school best practices into traditional public schools: Evidence from field experiments," *The Quarterly Journal of Economics*, 129, 1355–1407.

Gallus, J., O. S. Jung, & K. R. Lakhani (2020): "Recognition incentives for internal crowdsourcing: A field experiment at NASA," *Harvard Business School Technology & Operations Mgt. Unit Working Paper*.

Gneezy, U., S. Meier, & P. Rey-Biel (2011): "When and why incentives (don't) work to modify behavior," *Journal of Economic Perspectives*, 25, 191–210.

Greevy, R., B. Lu, J. H. Silber, & P. Rosenbaum (2004): "Optimal multivariate matching before randomization," *Biostatistics*, 5, 263–275.

Imai, K., G. King, & C. Nall (2009): "The essential role of pair matching in cluster-randomized experiments, with application to the Mexican universal health insurance evaluation," .

Katz, D. & R. L. Kahn (1966): *The Social Psychology of Organizations*, Wiley.

King, G., E. Gakidou, N. Ravishankar, R. T. Moore, J. Lakin, M. Vargas, M. M. Téllez-Rojo, J. E. Hernández Ávila, M. H. Ávila, & H. H. Llamas (2007): "A "politically robust" experimental design for public policy evaluation, with application to the Mexican universal health insurance program," *Journal of Policy Analysis and Management*, 26, 479–506.

Podsakoff, N. P., S. W. Whiting, P. M. Podsakoff, & B. D. Blume (2009): "Individual-and organizational-level consequences of organizational citizenship behaviors: A meta-analysis." *Journal of applied Psychology*, 94, 122.

Podsakoff, P. M. & S. B. MacKenzie (2014): "Impact of organizational citizenship behavior on organizational performance: A review and suggestions for future research," *Organizational Citizenship Behavior and Contextual Performance*, 133–151.

Podsakoff, P. M., S. B. MacKenzie, R. H. Moorman, & R. Fetter (1990): "Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors," *The leadership quarterly*, 1, 107–142.

Sliwka, D., T. Vogelsang, & J. Alfitian (2021): "When bonuses backfire: Evidence from the workplace," .

Wagner, Z., J. B. Asiimwe, & D. I. Levine (2020): "When financial incentives backfire: evidence from a community health worker experiment in Uganda," *Journal of Development Economics*, 144, 102437.