The Value of Fun at Work *

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Abstract

This study examines the impact of social activities aimed at fostering collegiality in a large white-collar company organized around 100 small offices spread geographically. In a randomized controlled trial, half of the offices receive a subsidy to organize specific biweekly social activities over the course of three months, such as picnics, movie nights or pantomime games. We find that the intervention strengthens collegiality, enhances workplace friendships, and improves office-level performance. While we detect no effects on individual productivity, turnover appears to have fallen in the short-run, meaning that employees stayed longer in the job. The most plausible mechanism driving these effects is a sense of gratitude and reciprocity toward the company.

1 Introduction

Workplaces are not just sites of production but also social environments where collegiality plays a central role in shaping job satisfaction, employee retention, and overall productivity. Non-monetary and social aspects of work, such as the social environment, corporate culture, and more, are important determinants of both productivity and worker satisfaction (Barney, 1986; Guiso et al., 2015; Martinez et al., 2015; Gartenberg et al., 2019; Bandiera et al., 2010; Cassar and Meier, 2018; Belloni et al., 2014). Employees consistently rank social environment and collegiality—the sense of connection and camaraderie with coworkers—as a critical factor in their job satisfaction, often placing it alongside monetary compensation in importance (DellaVigna and Pope, 2018; Friebel et al., 2017).

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The notion that social interaction influences workplace performance has long been recognized in organizational behavior and sociology. Hackman and Wageman (2005) emphasize that social cohesion enhances team functioning and adaptability, while Park (2019) finds that structured socialization efforts improve both productivity and well-being in manufacturing settings. These insights align with broader theories of workplace dynamics, suggesting that employees who feel connected to their peers are more likely to perform well and remain in their jobs. However, causal evidence on whether interventions explicitly designed to foster social interaction translate into measurable workplace outcomes remains scarce.

In this paper, we design and evaluate an intervention targeting employees of a large firm and aimed at improving collegiality. The intervention we propose is simple and low-cost: it consists of organizing social activities that require little infrastructure such as picnics, movie or game nights. These activities contrast with more labor-intensive programs that involve training managers or employees to improve relationships at work (such as in the recent work of Alan et al. (2023), Azulai et al. (2020) or Friebel et al. (2022)) or more complex team-building activities that are logistically more challenging to organize and typically take place once or twice a year [1]. A priori, encouraging simple social activities and interactions between co-workers could be an attractive and low-cost tool to foster a positive workplace climate as they are easy to implement and may not even compete directly with working time.

The design of the intervention we propose builds on the sociological and psychological literature highlighting the role of shared enjoyment in promoting social bonds (Fine and Corte, 2017; Salmela, 2014). The idea is that collective emotions act as 'the glue'of a group. Although it may seem futile, having fun with others, or as sociologists call it 'collective hedonic satisfaction' is believed to foster group attachment. With this in mind, we conducted a field experiment introducing fun, group activities in a large firm to test whether fostering collegiality through structured social activities improves collegiality and relevant work outcomes. We partner with a large white-collar organization in Kyrgyzstan, which has around 1,000 employees across 100 offices spread geographically across the country, half of which we assign to a treatment. The firm uses a relatively competitive incentive structure for their employees, making it a particularly interesting setting to study, as such dynamics may challenge the development of a positive corporate spirit.. Our intervention consists of six 'shared enjoyment activ-

[1]The team-building and corporate entertainment industry is substantial and growing,[2] with firms widely adopting such activities to enhance employee engagement and workplace culture (Dyer, 2013). Yet, there is little causal evidence on whether these interventions lead to measurable improvements in workplace outcomes. Existing studies rely largely on descriptive evidence or anecdotal accounts, leaving an empirical gap in understanding how team-building activities influence collegiality and performance.

ities' that the treatment offices were asked to organize during the three-month period. The head office financed the activities, which were relatively low-cost. With that in mind, we implemented various fun social activities—including group lunches, movie nights, and team-building games. Over three months, treatment offices participated in six out of ten proposed activities chosen by employees themselves. By allowing flexibility in activity selection, we test whether tailored social activities can improve collegiality and lead to better workplace outcomes.

We examine both direct measures of social cohesion and performance-related outcomes. Social cohesion is assessed using survey-based metrics, such as interaction frequency with colleagues, the number of workplace friendships, willingness to help colleagues with personal problems, and ratings of different aspects of team cohesion on a Likert scale. Importantly, in addition to survey outcomes, we have access to micro data on objective outcomes from the firm. The first is team performance in a firm-wide competition ranking offices based on productivity metrics (e.g., portfolio growth, client feedback) and procedural adherence. Additionally, we have data on measures of productivity and retention at the individual level over time. These data help us identify short- and medium-term impacts on relevant economic outcomes.

We find that structured social activities significantly increased collegiality and attachment to colleagues, by an order of 0.1 standard deviation. Part of these effects capture the treatment itself though, as the indices include measures of social interactions. But we also observe a 0.18 standard deviation increase in the reported number of close friends. These effects remain robust after accounting for multiple hypothesis testing using the Holm and Romano-Wolf corrections.

As for performance, the intervention led to significantly higher relative performance of the treated offices in the firm-wide offices competition, with the effect being only marginally significant three months after the intervention. This suggests that collegiality may reinforce existing team dynamics, enhancing outcomes for high-performing offices but having limited effects in low-performing ones. On the other hand, we do not observe significant effects on productivity at the individual level.

As for productivity and retention, we find no significant effect on measures of productivity at the individual level. Notably, we find large effects on retention, with loan officers in the treatment group being 4 percentage points less likely to leave the company after the three months of the intervention (the effect is significant on 10% level), compared to a baseline of 10%. This result is important given the high costs of employee turnover, both in terms of hiring and training replacements and the lower repayment rates associated with departing loan officers. The relative size of the turnover effect suggests that fostering collegiality could be a very cost-effective

strategy for improving employee retention. The effects on retention dilute over time and are no longer significant 6 months after the end of the treatment, though.

To understand the mechanisms driving these results, we examined four potential channels: intrinsic motivation, information transmission, advice-seeking and giving, and reciprocity toward the firm. Of these, only reciprocity was significantly influenced by the intervention. Loan officers in treatment offices showed a greater willingness to volunteer for unpaid office improvements, a behavior indicative of increased prosocial behavior toward the firm. This aligns with organizational behavior theories suggesting that shared experiences foster gratitude and loyalty, which, in turn, enhance workplace cohesion and performance (Locklear et al., 2023).

This paper contributes to a recent body of work designing and evaluating interventions targeting management practices and organizational culture with randomized controlled experiments. The literature in Organization has focused a lot on the responsibility of *leaders* for workplace culture and firm performance (Bertrand and Schoar, 2003; Bolton et al., 2013; Bandiera et al., 2020; Hoffman and Tadelis, 2021) and a number of recent studies evaluate experiments targeting leaders (Alan et al., 2023; Azulai et al., 2020; Friebel et al., 2022). These programs are 'training' interventions targeting leadership styles specifically. In contrast, the intervention we propose does not involve any training. It is in fact a very simple and low-cost intervention that managers could easily implement. In that spirit, our study also relates to the literature on the impact of management practices on firm performance ((Bloom and Van Reenen, 2007; Bloom et al., 2013; Gosnell et al., 2020) although these practices do not usually refer to what we propose here, which is to subsidize and organize simple structured social activities.

Our work also relates to work on corporate identity and organizational attachment (Guadalupe et al., 2020; Van den Steen, 2010), and on the role of a 'team spirit' and social skills in firm performance Weidmann and Deming (2020). Recent studies also show that employees' mood matters for their productivity (Bellet et al. (2024). Our study is a first attempt to improve workplace culture by targeting employees directly.

The paper fits within the broader literature showing that corporate culture matters for performance ((Barney, 1986; Boyce et al., 2015; Guiso et al., 2015; Martinez et al., 2015; Gartenberg et al., 2019). The evidence from these studies is non experimental however, and does not evaluate programs aimed at changing the culture.

2 Background

2.1 Context

We partner with one of the leading microfinance institutions in Kyrgyzstan, which provides financial services to underserved populations typically excluded from formal banking systems. The organization primarily issues loans ranging from 100 to 3000 USD through a decentralized network of over 100 offices distributed across the country. The size of an office ranges from 4 employees to 30 employees, with an average of 12. These small offices are likely to be the most socially relevant environment for employees on a daily basis.

The company's operational backbone comprises more than 1,000 loan officers tasked with sourcing clients, assessing creditworthiness, and ensuring loan repayments.

Loan officers play a dual role: promoting loan products to maximize outreach while maintaining stringent credit evaluation standards. Their responsibilities include assessing economic conditions, forecasting repayment capacity, and establishing repayment plans for prospective borrowers. Each office is managed by a branch manager who oversees loan approvals, provides training to loan officers, and ensures the implementation of company policies and new directives from headquarters.

The incentive structure of the institution is performance-driven. Loan officers receive a modest base salary supplemented by bonuses contingent upon meeting individual productivity thresholds. Productivity metrics are based on the volume of the portfolio under management and the repayment quality. Managers, on the other hand, receive bonuses linked to the collective performance of their branch, aligning their incentives with office-wide productivity and compliance targets.

A persistent challenge faced by the institution is employee retention, particularly among newly hired loan officers. More than 50% of new employees leave the company before reaching one year of tenure. High attrition is often attributed to the demanding nature of the job, limited initial support, and a competitive workplace environment where colleagues compete for clients. This competitive dynamic, compounded by the largely individualistic incentive structure, may reduce peer collaboration and be detrimental to job satisfaction.

The primary motivation for our intervention stems from these challenges. Structured social activities could potentially mitigate the adverse effects of the competitive incentive. The hypothesis is that these activities could foster a more supportive workplace climate, enhance collaboration and improve overall employee satisfaction and retention.

2.2 Treatment

The focus of the paper is to evaluate an intervention designed to foster fun and interpersonal bonding through structured social activities. Because the company is structured around small offices, the treatment was assigned at the office level. These offices are the most relevant social environment of employees in their daily work lives.

Building on the work of Fine and Corte (2017), we select activities that allow for collaborative commitments, shared narrative, and embodied engagement, all of which are essential for shared enjoyment. We selected activities that do not require specific abilities (such as physical abilities in particular), may appeal to a broad set of people and we avoided activities that are purely educational, work-related or involve competition on work-related skills.

The proposed 10 activities were selected in partnership with the management of the firm, based on the proposals of the researchers and the proposals of the firm's employees.

The list of 10 activities offered includes:

1. Picnic
2. Lunch at a café with colleagues
3. Potluck breakfast in the office
4. Movie night[3]
5. Singing competition in the office
6. Two lies one truth game in the office
7. Pantomime game in the office
8. Creating a flash-mob video
9. Compliment-letter game in the office
10. Nostalgic day in the office, when each employee brings a photo from childhood and tells a story about it

The experiment lasted for three months (May to July), and within this period, offices assigned to treatment participated in six out of these 10 activities. The aim

[3]Tickets to a local cinema were paid for offices with cinemas in the proximity. For offices without a cinema in close proximity, a wall projector and dvd player with a movie of their choice among 20 options were delivered.

was to have one activity every two weeks. In fact, the budget for the activities was transferred one week before each event. Importantly, most of the activities were self-organized by the offices, with only monetary subsidies from the headquarters. Treated offices received posters in Kyrgyz and Russian languages, both electronically and physically, detailing the list of activities along with corresponding budgets provided by the headquarters.[4] The head of sales communicated to treated offices that they are part of a new project of the headquater to improve the happiness of the employees, that is why the posters referred to a "Happy office."[5]

All activities, except for the picnic, lunch at a café, and creating a flash-mob video, took place in the office during or after work hours. Creating a flash-mob video could last for several days, including preparations, and often took place outside of the office. Offices were required to select preferred activities within the first week of the experiment and report their choices to the headquarters. This allowed for proper budgeting and logistics. The activities were subsidized by the firm and the researchers (50%-50%). The manager of the office sent a report with at least one common photo to a representative in the head office to report about the activity that took place.

2.3 Experimental Design and Randomization

We employed efficient cluster randomization at the level of company offices (Gallis et al., 2018) to assign offices into control or treatment groups.

Using this randomization approach, half of the offices were assigned to the treatment group, which participated in the collective events, while the other half served as controls.

The intervention lasted three months, from May 1 to July 31. Two firm-wide surveys were conducted: an initial survey on May 1 and a follow-up survey on August 15, after the experiment concluded. All loan officers were invited to participate in the survey. They filled out the surveys at the same time. Those who were not at work on that day due to illness or vacation are absent from the sample. These surveys included a comprehensive set of questions to assess workplace climate and its components. We mostly rely on the self-reported answers, but the survey also included several incentivized measures. The employees could choose either Russian or Kyrgyz language for the survey. Details of these surveys are presented in the next section.

[4]See examples of posters in Russian in the Appendix, paired with the translated English version.

[5]Management expressed concerns about potential spillovers of information between offices, particularly for those located in close proximity. To mitigate this, control offices were informed that some events might occur in other offices as part of a research initiative and that these offices were randomly chosen. As compensation, control offices were provided with similar subsidies for a summer picnic in 2024, one year after the experiment.

3 Outcomes

We evaluate the intervention with two sources of data: data from surveys conducted among the employees before and after the treatment, and administrative data from the company.

The surveys covered a range of questions (some incentivized) designed to measure either the main outcomes or the mechanisms for potential treatment effects (The full survey is provided in the Appendix B). Employees received their payment for the incentivized questions at the end of the month together with their salary.

3.1 Outcomes: Primary Outcomes

First-stage outcomes:

First-stage outcomes help us assessing whether the treatments affected the frequency of social interactions, as well as assessing the climate, collegiality and degree of attachment to the office. These outcomes are all measured through responses to the surveys.

1. *Collegial climate in the office based on survey direct reports.* Weconstruct an index of perceived collegial climate, calculated as the average z-score over the 8 questions related to collegiality (Section 1 of the survey).

2. *Collegial climate in the office based on diaries.* This is our most direct measure of collegiality (Section 5 of the survey). Participants were asked: *Please take your time to reflect on your activities and provide your best estimate for how often you engaged in each of them.* We integrate into a standardized index the frequency of the following collegial activities: helping colleagues, receiving help from colleagues, talking to the manager, teamwork planning, chatting with colleagues, and having lunch together with colleagues.

3. *Degree of attachment to colleagues.* We construct a standardized measure (z-score) based on two questions in the survey: (1) *How many close friends would you say you have in your office?* (2) *I am happy to devote my personal time to help some of my office colleagues solve their personal problems.*[6]

Second-stage outcomes:

[6]Here we slightly deviate from the pre-registration. Originally, we intended to include an index for caring about colleagues and the office that would also include a third question. However, it became apparent that the third question is more related to one of the main mechanisms we study and mixes the mechanism with the outcome, making it harder to interpret directionally.

Our main outcomes of interest are related to productivity (at the office and individual level) and turnover. All second-stage outcomes are based on the administrative records of the company.

1. **Relative Performance of the Office in the competition in July 2023**.

Our main second-stage outcome of interest is the office-level relative performance in the firm-wide competition between offices that took place in July 2023, just at the end of the treatment. The competition had three stages. Each stage consists of three months, and the points start anew at the beginning of each stage, but they are accumulated within the stage. The conditions, goals, and tasks of the competition can change every month, and each month, the results are announced (both the points and the ranking of each team). We have performance data for all months.

By design, our intervention starts with the beginning of the second stage of the competition. It starts on May 1, 2023, and lasts for three months. The third stage begins on August 1, 2023, and also lasts for three months. We analyze both the ranks and the absolute sum of points that each office achieves. We focus on performance in the last month (July) of the competition, given that the treatment takes place during these months. We will consider the full three-month period of the third stage as a longer-term outcome. Finally, we also consider the treatment effect on the competition performance given previous performance for the period starting from the intervention.

2. **Average individual productivity of employees in the office**: This is a measure provided by the company, which is based on porfolio size and quality of the loans. This is measured in KGS.

3. **Employee retention at 6 and 12 months.**

3.2 Secondary outcomes: Mechanisms

We are also interested in evaluating the mechanisms through which the team activities affect the end outcomes. These activities could potentially affect productivity and retention through various channels, and we included a specific set of questions in the surveys to explore these channels.

The channels we examine are the following:

- **Intrinsic motivation:** Social activities could directly affect employees' intrinsic motivation and thereby their productivity. Intrinsic motivation is measured by direct self-reported working hours and survey measures of intrinsic motivation (z-score based on Section 3 of the survey).

- **Information transmission** Social activities and stronger social connections in the office may facilitate information transmission, some of which may be relevant for productivity. We measure information transmission through a set of incentivized questions (Section 7 of the Surveys). For this purpose, a week before each survey wave, the head of sales casually mentions two interesting facts, one non-work-related and one work-related, during the weekly Zoom meeting with all office managers. Examples include the head of sales' favorite office. In the survey, we ask questions about these facts, and those who answer correctly receive 100 KGS for each question.

- **Advice seeking/giving:** Social activities and stronger social connections may encourage employees to less reluctant to seek or give advice to others. This is related to information transmission, but focuses on peer interactions, and is measured in a non incentized manner. We construct an index (z-score) aggregating answers to questions in Section 2 of the survey.

- **Reciprocity towards the firm:** These social activities are effectively a form of non-monetary compensation - a gift from the company to their employees. Effects on productivity may therefore also be a form of 'gift-exchange' Akerlof (1982) We measure reciprocity in an incentized manner (Section 8 of the survey). Specifically, we elicit the employees' willingness to volunteer unpaid extra time to improve the office (e.g., small refurbishments and territorial care, such as planting flowers in offices with soil), outside normal working hours. Participants were asked whether they were willing to volunteer for free. The choice was randomly implemented among 40 loan officers.[7]

4 Results

4.1 Randomization, Balance, and Compliance

Using data available from the firm as of mid-April 2023, we randomized teams[8] into treatment and control groups using efficient cluster randomization (Gallis et al., 2018). The following variables were used to ensure balance:

- Number of loan officers in the office: Total number of employees responsible for evaluating and approving loans or credit to clients.

[7] More precisely, we elicited a price list, asking whether participants were willing to volunteer for free, for 200 KGS, 400 KGS, and so on. However, the variation was lower than expected, so we used free volunteering as the final measure.

[8] Note that we refer to teams, as they are units of the between-office competition. Almost all teams consist of one office, with a few exceptions described below.

- Number of active clients in the office: Total number of clients who have taken out loans or credit from the firm.
- Size of the credit portfolio: Total balance of all outstanding loans and credit extended by the office to its clients.
- Size of the portfolio at risk (PAR) of 7 days: Total balance of loans or credit in the portfolio overdue by 7 days or more.
- Share of the portfolio at risk (PAR) of 30 days: Percentage of the total credit portfolio overdue by 30 days or more.
- Absolute growth of the portfolio in March 2023: Total increase in the value of the credit portfolio from the beginning to the end of March.
- Points in the competition between offices in February and March 2023: Performance metric quantifying office competition based on monthly-varying indicators.
- Regional dummies: Binary variables representing the geographical regions in which the firm operates. A value of "1" indicates the presence of an office in that region, while "0" denotes its absence.

These variables were selected based on their importance as identified by the firm's management.

Based on the randomization, 51 teams were assigned to treatment and 52 to control. Because of logistical constraints, some of the initial teams were excluded from the sample. Specifically, one team initially randomized to treatment lacked a manager and was under investigation for potential fraud; it was manually reassigned to the control group and excluded from the sample. However, five teams (two in control and three in treatment) included more than one office, located far apart and operating independently. This is because these offices are too small to comprise a team of five people. These were excluded from the analysis, as their activities and performance were less comparable to the other teams.[9] After these adjustments, the final sample consisted of 48 teams in the treatment group and 50 in the control group.

The final sample includes only loan officers who participated in both survey waves, excluding those who left the company or were hired during the experiment. Table 1 presents the balance of observables at the team level (part of block randomization) and additional employee characteristics.

[9]Additionally, some teams comprised of more than one office, as some main offices have 'mobile sub-offices', that are spread across multiple locations. These mobile offices were managed by the same manager and interacted regularly with the main office, so we retained them.

Table 1: Comparison of Control and Treatment Groups

Variable	Control	Treatment	Difference	p-value
Part of block randomization				
Number of employees	13.55	13.24	-0.31	0.82
Number of clients	3,291	2,929	-362	0.36
Portfolio size, KGS	1.435e+08	1.396e+08	-3.914e+06	0.845
Portfolio at risk 7 days, KGS	1.633e+06	1.694e+06	60,509	0.90
Portfolio at risk 30 days, %	1.123	0.897	-0.226	0.46
Portfolio growth March 2023, KGS	263,821	293,134	29,313	0.75
Points in competition March 2023	12.25	17.615	5.36	0.45
Regional dummies (12, min p-value)	.	.		0.125
Not part of block randomization				
Female	0.71	0.79	0.08	0.02**
Age	32.6	32.8	0.25	0.63
Experience of manager, months	120.9	108.3	-12.5	0.25
Number of children	1.91	2.03	0.12	0.24
Productivity March 2023, KGS	29,140	27,927	-1,212	0.63
Kyrgyz language chosen	0.58	0.52	-0.06	0.36
Observations	464	441		

Notes: The balance table for loan officers from the sample of those who participated in both waves of the survey. The p-values are based on office-level clustering.

Even though some teams were excluded post-randomization, there is no imbalance in team-level observables used for randomization. Regarding other observables, the only significant difference is the higher share of women loan officers in the treatment group. Given the number of variables analyzed, some imbalances are expected. One of our analysis specifications will include fixed effects for loan officers, controlling for all observable characteristics at the individual level.

Table 2 presents the compliance of the offices with event organization and the distribution of chosen events. While all offices in the treatment organized six events, on average, loan officers in each office attended 5.74 events. Regarding the choice of events, the picnic was the most popular, with all treatment offices but one including it in their list. Creating a flash-mob video was the least popular activity. Overall, there is considerable heterogeneity in event selection. Despite observing imperfect compliance, we use intent-to-treat estimates in our main analyses.

4.2 Empirical Specification

There are two types of outcomes of interest.

Table 2: Summary Table (Excluding Columns with Brackets)

	Control	**Treatment**	**Total**
Total number of events participated	0	5.74	2.79
Picnic	0	97.0 %	47.0 %
Lunch together	0	89.0 %	44.0 %
Movie night	0	85.0 %	41.0 %
Potluck breakfast	0	73.0 %	36.0 %
Pantomime game	0	47.0 %	23.0 %
Compliment-letter game	0	44.0 %	22.0 %
Two lies one truth game	0	42.0 %	20.0 %
Singing competition	0	35.0 %	17.0 %
Nostalgic day	0	33.0 %	16.0 %
Creating a flash-mob video	0	30.0 %	14.0 %
N loan officers	464	441	905

Survey-Based Outcomes

Our empirical strategy is to estimate the average treatment effect using a difference-in-differences specification with loan officer fixed effects to control for potential imbalances in individual observables:

$$y_{if} = \alpha_1 + \alpha_2 T_f \cdot POST + \delta_i + \epsilon_{if},$$

where y_{if} is the outcome of employee i in office f. T_f is a dummy variable that equals 1 if office f is in the treatment group, and 0 otherwise. $POST$ is a dummy variable that equals 1 if the outcome is measured in the second survey (endline), and 0 otherwise. δ_i represents loan officer fixed effects. Standard errors are clustered at the office level.

The coefficient of interest estimating the treatment effect is α_2. We also provide all our main results without fixed effects using a difference-in-differences estimation, which is detailed in Online Appendix A.

Administrative Outcomes

To test the null hypothesis that the intervention had no impact on y from administrative records of the company, we estimate the average treatment effect while conditioning on covariates selected using the "post-double-selection" (PDS) methodology of Belloni et al. (2014):

$$y_{if} = \alpha_1 + \alpha_2 T_f + \mathbf{X}'_{if}\gamma + \epsilon_{if},$$

where y_{if} is the outcome of employee i in office f. T_f is a dummy variable that equals 1 if office f is in the treatment group, and 0 otherwise. $\mathbf{X}'_{if}$ is a vector of observables for employee i in office f that are potentially predictive of the outcome y, selected following the "post-double-selection" (PDS) methodology of Belloni et al. (2014). For the office-level outcomes, the model is transformed straightforwardly but using only office-level variables. The list of covariates includes all variables used in randomization and its squared terms, plus additional variables its squared terms depending on the outcome (office level or individual level), which are discussed in respective sections. Standard errors are clustered at the office level.

The coefficient of interest estimating the treatment effect is α_2. For illustrative purposes, we also provide all our main results without covariates.

Finally, because we test several hypotheses using multiple outcomes, we also provide our inference results (p-values) adjusted for the multiple hypotheses testing using Romano-Wolf correction (Romano and Wolf, 2005; Clarke et al., 2020).

4.3 Treatment Effects on First-Stage Outcomes

As described in subsection 3.1, we consider three main first-stage outcomes: collegial climate in the office based on survey direct reports, collegial climate in the office based on diaries, and the degree of attachment to colleagues. Table 3 presents the estimated treatment effects for these outcomes. The analysis uses a linear fixed-effects regression model with standard errors clustered at the office level, with *Treatment*Wave2* capturing the average treatment effect.

The results show positive and significant treatment effects of the intervention on all three first-stage outcomes. Model (1) shows that employees in the treatment group reported 12.3% of a standard deviation ($p < 0.05$) higher collegiality compared to those in the control group. Similarly, as model (2) shows, the diary-based measure of collegiality reflects a statistically significant improvement of 11.2% of a standard deviation ($p < 0.05$), highlighting that the intervention also influenced employees' day-to-day experiences and interactions. Finally, for the degree of attachment to colleagues, the treatment effect is 12.9% of a standard deviation ($p < 0.05$), suggesting that employees in the treatment group felt more connected to and supportive of their colleagues relative to the control group.

Using the Romano-Wolf correction for multiple hypotheses testing for the three first-stage outcomes, the significance of each outcome remains at a 5% significance level.

Table 3: Treatment effect of first stage outcomes

	Collegiality Survey Index (1)	Collegiality Diary Index (2)	Care Colleagues Index (3)
Wave 2	-0.081*	-0.064**	-0.031
	(0.044)	(0.028)	(0.033)
Treatment*Wave2	0.123**	0.112**	0.129**
	(0.058)	(0.045)	(0.054)
Constant	0.009	0.055***	0.013
	(0.014)	(0.012)	(0.013)
Observations	1810	1760	1806
Adjusted R^2	0.009	0.007	0.008
N clusters	101	101	101
Controls	FE	FE	FE

Notes: Linear fixed-effects regression. Wave 2 indicates dummy for the endline survey. Standard errors clustered on the office levels are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Next, we consider the components of each main outcome to identify the drivers behind each composite outcome.

Figure 1 presents the components of the Collegiality Survey Index. Out of eight components, three are significantly affected by the intervention: frequency of enjoyment and laughter, activities and celebrations, and social events. The fact that activities and social events show the strongest shifts is reassuring as they directly correspond to the intervention. While the degree of team cohesiveness and frequency of informal conversations did not change, all other indicators moved towards better collegiality.

Figure 2 presents the components of the Collegiality Diary Index. Out of six components, two are significantly affected by the intervention: the proportion of time spent talking to managers and the frequency of lunches together. Additionally, all components but help from colleagues show substantial increases, resulting in an overall significant improvement in the index.

Finally, Figure 3 presents the components of the Care Colleagues Index. This index consists of the self-reported degree of help provided to colleagues with personal problems and the reported number of friends. The number of friends is significantly increased by the intervention, while there is a substantial but not significant increase in helping others.

Overall, the intervention had a meaningful and consistent impact across first-stage outcomes, fostering a more collaborative and supportive work environment.

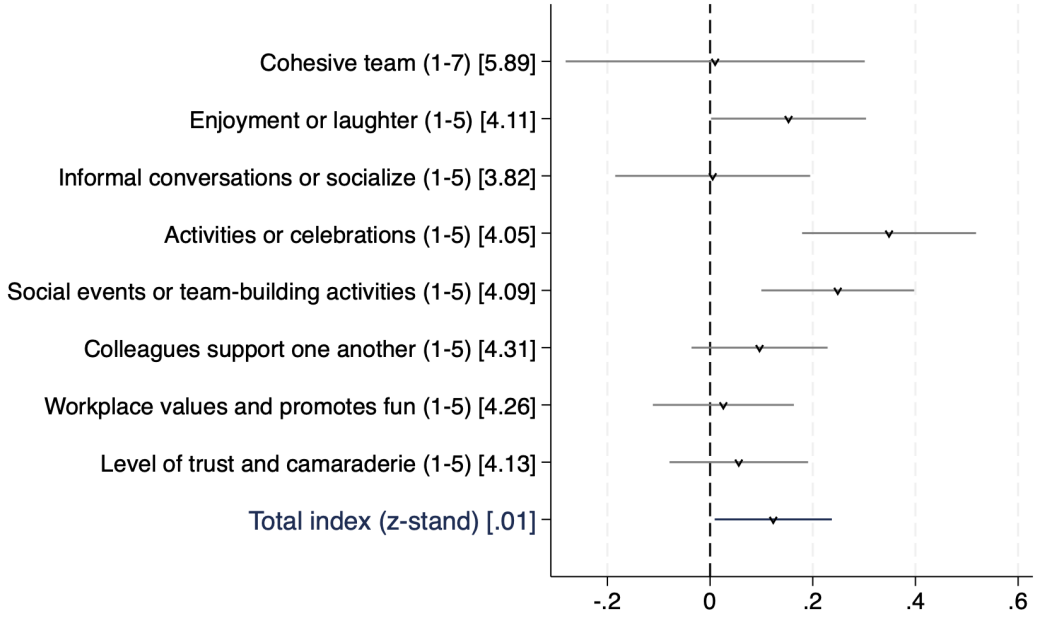


Figure 1: Components of Collegiality Survey Index

Notes: Each component refers to a question from the survey (see Appendix for details). The numbers in the round brackets indicate the scale. The numbers in the square brackets show the mean value in the first wave of the survey.

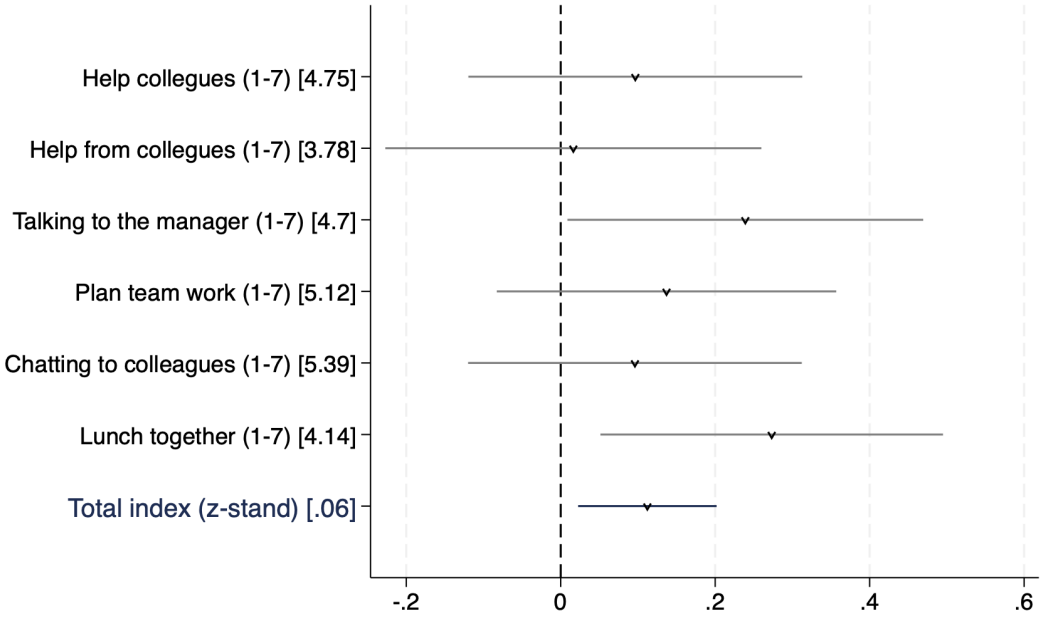


Figure 2: Components of Collegiality Diary Index

Notes: Each component refers to one of the activities from the diary section of the survey (see Appendix for details). The numbers in the round brackets indicate the scale. The numbers in the square brackets show the mean value in the first wave of the survey.

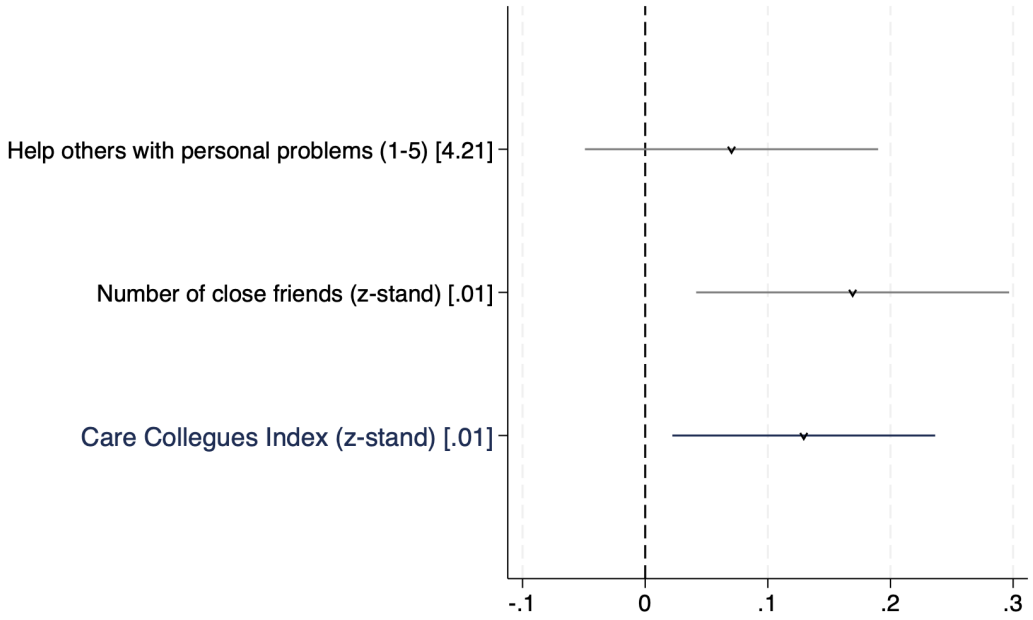


Figure 3: Components of Care Colleagues Index

Notes: Each component refers to one of the survey questions (see Appendix for details). The numbers in the round brackets indicate the scale. The numbers in the square brackets show the mean value in the first wave of the survey.

4.4 Treatment Effect on Second-Stage Outcomes

As mentioned in subsection 3.2, we consider three second-stage outcomes derived from the administrative data of the firm.

Performance in the competition

Our first main outcome of interest is performance in the firm-wide competition in July (the last month of the intervention) and subsequent months. The appealing feature of competition performance as an outcome is that, unlike productivity and retention, the performance unit is the office, which aligns directly with the intervention unit.

The performance in the competition is objective, with indicators varying each month and announced in advance. These indicators are typically productivity-related, such as portfolio growth, repayment rates, or sales volume, but may also include metrics tied to management goals, for instance, emphasize sales of a specific product or include metrics such as adherence to formal procedures or client feedback. Office points and rankings are published monthly. As the main prize, all employees of the winning office for each stage (three months) attend the year-end event abroad, which lasts 3 to 4 days.[10]

[10]In 2023, this event took place in Antalya, Turkey.

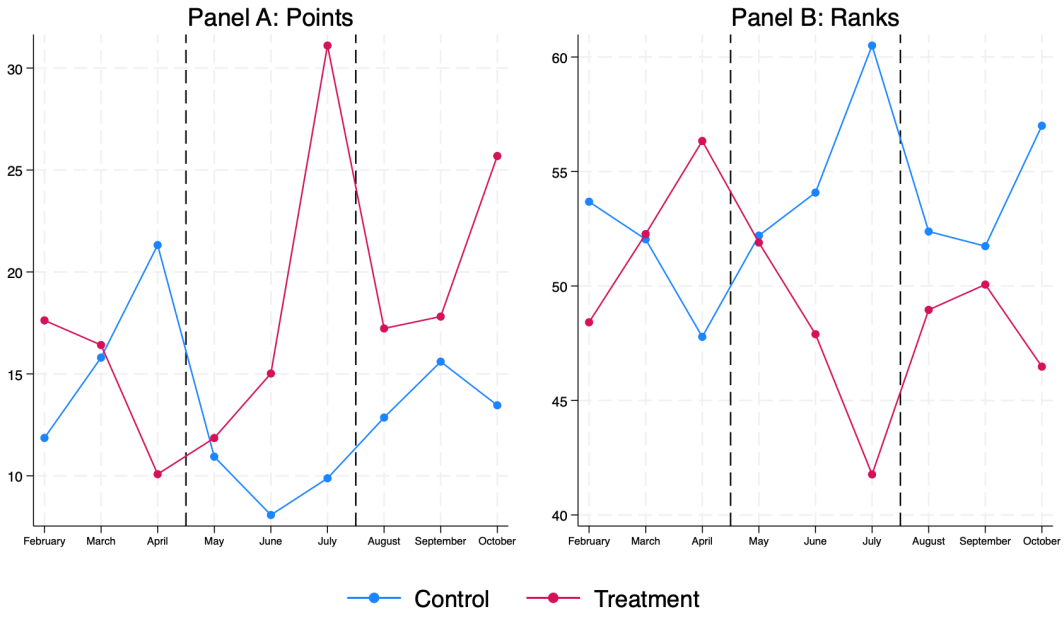


Figure 4: Dynamics of Average Points and Ranks in the Competition
Notes: Panel A presents average points by teams in the treatment and control groups. The scale of points varies monthly with the indicators, but higher values are better. Panel B presents average ranks by teams in the treatment and control groups. The ranks range from 1 (winner) to 102 (last place).

Figure 4 illustrates the dynamics of performance for teams in the treatment and control groups by month. Panel A displays the average points, while Panel B shows the average ranks. In the three months before the intervention (February-April), the two groups exhibited similar performance. After the intervention started, teams in the treatment group systematically outperformed those in the control group, with the difference peaking in July, the last month of the intervention. Note, that in July the second stage of competition completed, meaning accumulated winner of May-July received the main prize. In September, when the third stage starts from scratch, the groups showed nearly equal performance, but by October, differences favoring the treatment group began to emerge again.

Table 4 provides regression analyses of the treatment effects by month, starting from July. Panel A reports results for points, while Panel B shows results for ranks. The treatment effects in July are statistically significant, with treated offices achieving, on average, 19.46 additional points ($p < 0.01$) and improving their rank by 17.85 places ($p < 0.01$). In August, the treatment effects diminish and are no longer significant. However, in October, we observe a resurgence, with treated offices gaining 12.23 points ($p < 0.10$) and improving their rank by 9.70 places ($p < 0.10$).

Table 4: Treatment effect on performance in the competition

	Panel A			
	Points July	Points August	Points September	Points October
Treatment	19.457***	4.369	0.257	12.227*
	(6.136)	(6.775)	(6.923)	(7.272)
Observations	98	98	98	98
Controls	PDS selected	PDS selected	PDS selected	PDS selected
	Panel B			
	Place July	Place August	Place September	Place October
Treatment	-17.852***	-3.422	0.165	-9.704*
	(4.942)	(5.947)	(5.417)	(5.277)
Observations	98	98	98	98
Controls	PDS selected	PDS selected	PDS selected	PDS selected

Notes: Linear with post-double-selection of controls from variables used in randomization and its squared terms, plus average gender dummy, average age, average number of children, average dummy of Kyrgyz ethnicity, average dummy of chosen Kyrgyz language, tenure of the manager in years. The results without controls are presented in A.1 in the Appendix. Standard errors are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

An alternative way of looking at the effects of the competition is to analyze monthly performance given the performance in the previous months. Table A.2 in the Appendix presents results of regression analyses of panel data of monthly performance in the competition. Models (1), (2), and (5), (6) present treatment effects on points and ranks, respectively, in the pre-intervention period. The treatment group performs worse than the control group, but the difference is not significant.[11] In contrast, when looking at the period from May to October, the treatment group performs significantly better than the control group, conditional on previous month performance.

Summing up, the results highlight positive treatment effects on performance in the competition, particularly in the final month of the intervention. While the effect diminishes immediately after the competition resets in September, the performance differences favoring the treatment group begin to reappear in subsequent months. These findings, together with results from panel analyses, suggest that the intervention had a substantial and lasting impact on office-level performance in the competition.

4.5 Productivity and Retention

Next, we consider the individual productivity of the loan officers and retention. We have three data points for productivity and retention: end of July 2023 (right after

[11] It reaches significance at the 10% level for points with post-double-selected controls.

the intervention), October 2023, and February 2024. The latter allows us to observe medium-term effects, particularly important for measuring retention.

The measure of individual productivity is an objective metric based on the size of the portfolio and the quality of repayments. It determines whether an employee receives a bonus and its magnitude.[12]

For retention, we consider the probability of loan officers who were employed at the start of the experiment (May 1, 2023) to still be employed at the firm on the dates of interest.

Table 5: Treatment Effects on Productivity and Retention

	Productivity July	Productivity October	Productivity February	Retention July	Retention October	Retention February
Treatment	-0.54	861.05	145.35	-0.04*	-0.04	-0.02
	(1009.55)	(1155.58)	(1528.94)	(0.02)	(0.03)	(0.03)
Observations	951	917	792	1058	1058	1058
Mean Outcome	31000	35000	39000	0.10	0.13	0.25
Controls	PDS Selected	PDS Selected	PDS Selected	PDS Selected	PDS Selected	PDS Selected

Notes: Results are based on linear regression with post-double-selection of controls from variables used in randomization and their squared terms, plus average gender dummy, average age, average number of children, average dummy for Kyrgyz ethnicity, average dummy for chosen Kyrgyz language, and tenure of the manager in years. All models control for April 2023 productivity. Results without controls are presented in Appendix A.3. Standard errors are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5 presents the treatment effects on productivity and retention. For productivity, the coefficients in models for July, October, and February are not statistically significant. However, the retention results in models (4) and (5) for July and October are notable. While the coefficients for retention in July (-0.04) and October (-0.04) are large relative to the mean values (0.10 and 0.13, respectively), the large standard errors result in marginal statistical significance (p=0.06 and 0.135). The medium-term retention results in February (model 6) show a smaller coefficient (-0.02), which is insignificant at conventional levels. That is, these results suggest that the intervention may have delayed departures.

Summing up, we observe statistically significant effects on competition performance and on retention in the short-run, although the latter effect is less precisely estimated. Individual productivity, on the other hand, appears to be unaffected by the intervention. Using the Romano-Wolf correction for multiple hypothesis testing for the second-stage outcomes, the significance of the treatment in boosting competition re-

[12]We do not have access to the exact formula, but the scale can be interpreted in local currency (KGS) and, based on management's description, should be proportional to the profit the loan officer brings to the firm.

sults in July 2023 remains significant for both places and points at the 5% significance level.

4.6 Channels

In this subsection, we study the mechanism behind our main treatment effect of increased collegiality and performance in the between-office competition.

In our survey, we measured four potential mechanisms: intrinsic motivation, information transmission, advice seeking and giving, and reciprocity towards the firm.

To construct the Intrinsic Motivation Index, we used the self-reported working hours per week and agreement with four statements from the survey (see Survey Appendix, Section 3): "I am passionate about my work," "I am willing to go the extra mile to make sure I do a great job," "I feel that my work has a positive impact on others or contributes to a greater purpose," and "My work activities genuinely interest me." The index is the average of Z-standardized responses.

To construct the Advice Seeking and Giving Index, we used responses (from 1 to 5) to four statements from the survey (see Survey Appendix, Section 2): "How willing are you to devote your personal time to help your office colleagues solve their work problems?" and "How comfortable are you asking for advice from your colleagues on job-related issues?" The index is the average of Z-standardized responses.

To construct the Information Transmission Index, we used incentivized measures. One week before each survey wave, during a weekly Zoom meeting of office managers with the head of sales, the head of sales casually mentioned two facts. One fact was unrelated to work (e.g., the "favorite office by atmosphere in Russia") and another related to general company statistics (e.g., differences in credit risk among client groups). Employees received a 100 KGS bonus for each correct answer. The index is based on the number of correct responses (0, 1, or 2).

Finally, for Reciprocity Towards the Firm, we elicited the incentivized willingness of employees to volunteer unpaid extra time to improve the office (e.g., small refurbishments or territorial care like planting flowers). Reciprocity Towards the Firm is a dummy variable equal to 1 if the loan officer agreed to volunteer and 0 otherwise.

Table 6 presents the results of regression analyses of each channel. Models (1) to (6) examine the correlation between each channel and the main outcomes of interest at baseline, while model (7) analyzes whether the channel was affected by the treatment.

Table 6: Channels correlation to outcomes and treatment effects

Panel A. Intrinsic Motivation Index

	Collegiality Survey	Collegiality Diary	Care Colleagues	Points April	Productivity April	Retention July	Intrinsic Motivation
	(1))	(2)	(3)	(4)	(5)	(6)	(7)
Intr Motiv Index	0.416***	0.190***	0.452***	0.319	5630.790***	-0.028	
	(0.043)	(0.034)	(0.046)	(2.105)	(1583)	(0.017)	
Wave2							-0.053
							(0.033)
Treatment*Wave2							-0.009
							(0.045)
Observations	1025	974	1002	1026	1018	1026	1770
Clusters	101	101	101	101	101	101	101

Panel B. Advice seeking/giving Index

	Collegiality Survey	Collegiality Diary	Care Colleagues	Points April	Productivity April	Retention July	Advice Index
	(1))	(2)	(3)	(4)	(5)	(6)	(7)
Advice Index	0.320***	0.134***	0.297***	0.629	-523.349	0.007	
	(0.032)	(0.022)	(0.030)	(1.524)	(1590)	(0.009)	
Wave2							-0.067
							(0.059)
Treatment*Wave2							-0.011
							(0.078)
Observations	1075	1016	1047	1076	1067	1076	1810
Clusters	101	101	101	101	101	101	101

Panel C. Information Transmission Index

	Collegiality Survey	Collegiality Diary	Care Colleagues	Points April	Productivity April	Retention July	Information Index
	(1))	(2)	(3)	(4)	(5)	(6)	(7)
Information Index	-0.028	0.057	0.058	-5.601**	3668**	-0.008	
	(0.045)	(0.037)	(0.042)	(2.438)	(1791)	(0.018)	
Wave2							0.224***
							(0.058)
Treatment*Wave2							0.082
							(0.095)
Observations	1075	1016	1047	1076	1067	1076	1810
Clusters	101	101	101	101	101	101	101

Panel D. Reciprocity towards firm

	Collegiality Survey	Collegiality Diary	Care Colleagues	Points April	Productivity April	Retention July	Reciprocity
	(1))	(2)	(3)	(4)	(5)	(6)	(7)
Reciprocity	0.150***	0.159***	0.287***	0.183	5041***	-0.034	
	(0.057)	(0.054)	(0.062)	(3.627)	(1731)	(0.029)	
Wave2							-0.015
							(0.017)
Treatment*Wave2							0.079***
							(0.024)
Observations	1075	1016	1047	1076	1067	1076	1810
Clusters	101	101	101	101	101	101	101

Notes: Models (1) to (6) present OLS regressions of dependent variable on channel with no controls. Model (7) presents linear fixed-effects regression. Wave 2 indicates dummy for the endline survey. Standard errors are in parentheses are clustered on the office level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

All channels show significant correlations with at least one of the main outcomes at baseline in predicted direction,[13] demonstrating their relevance as mechanisms.

Reciprocity towards the firm stands out as the only channel significantly influenced by the treatment. The *Treatment*Wave2* coefficient for reciprocity is 0.08 (Model 7, $p < 0.01$), indicating a meaningful increase in employees' willingness to volunteer for unpaid office improvements. This result highlights reciprocity as the key mechanism driving the treatment effects, suggesting that the intervention fostered a stronger connection between employees and the firm, which, in turn, may have contributed to improved outcomes in collegiality and competition performance.

5 Conclusion

This study presents evidence from a randomized controlled trial on the economic impact of structured social activities aimed at fostering collegiality.

We partner with a large private white-collar company in Kyrgyzstan, which has close to 1,000 employees spread across 100 small offices across the country. Half of the offices receive a subsidy to organize specific weekly social activities.

Using survey data and administrative records from the company, we evaluate how the intervention impacted collegiality in the office and productivity and turnover. We find that the intervention strengthens collegiality, enhances workplace friendships, and improves office-level performance. We do not find significant effects on individual productivity, but we do find large effects on turnover (a 40% decrease) in the short run, although these are relatively imprecisely estimated. There is no significant difference in retention rates 6 months after the intervention, which suggests that the intervention may have helped delaying departures.

We examine four possible channels for how the intervention may have affected office performance and turnover, including intrinsic motivation, information transmission, advice seeking and giving, and reciprocity. We find that the most plausible mechanism driving these effects is a sense of gratitude and reciprocity toward the company.

This study focuses on a set of social activities that are meant to be 'fun,' inspired by the literature in sociology that suggests that shared enjoyment is a fundamental driver of social bonding. These activities are also meant to be broadly accessible: they do not require specific abilities and typically appeal to a broad range of people. They contrast with other examples of team-building activities that are proposed on the market, which may appeal to certain sub-groups of employees more than others.

[13] Exception is the significant negative correlation between performance in competition in April and information transmission index.

Our experiment is conducted in a specific environment: it is a white-collar company, and its incentive structure is highly competitive. We chose this setting as it is a setting where one may worry about the possible adverse effects of competition. In principle, it would be interesting to study how monetary incentives and non-monetary compensation interplay, and examine the impact of such activities in a setting that has different incentive structures. Similarly, since these activities appear to work as a form of non-monetary compensation and thereby trigger reciprocity, future research could compare the effectiveness of different forms of monetary and non-monetary compensation on productivity and turnover.

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Appendix

A Additional Tables and Figures

Table A.1: Treatment effect on performance in the competition with no controls

	Panel A			
	Points July	Points August	Points September	Points October
Treatment	21.224***	4.369	2.212	12.227*
	(7.035)	(6.845)	(7.785)	(7.348)
Observations	98	98	98	98
Controls	PDS selected	PDS selected	PDS selected	PDS selected
	Panel B			
	Place July	Place August	Place September	Place October
Treatment	-18.729***	-3.422	-1.677	-10.521*
	(5.701)	(6.008)	(5.976)	(5.915)
Observations	98	98	98	98
Controls	No	No	No	No

Notes: OLS regression. Standard errors are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: Treatment effect on performance in the competition conditional on previous performance

	Points	Points	Points	Points	Ranks	Ranks	Ranks	Ranks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	-6.784	-7.661*	6.499**	6.123**	5.423	5.360	-5.541**	-5.256**
	(4.658)	(4.541)	(3.125)	(2.822)	(3.899)	(3.710)	(2.565)	(2.303)
L.Point	0.462***	0.390***	0.364***	0.266***				
	(0.079)	(0.075)	(0.041)	(0.044)				
L.Ranl					0.410***	0.318***	0.349***	0.250***
					(0.072)	(0.068)	(0.041)	(0.042)
Observations	196	196	588	588	196	196	588	588
Sample	March-April	March-April	May-October	May-October	March-April	March-April	May-October	May-October
R^2	0.186		0.145		0.169		0.137	
Controls	No	PDS selected	No	PDS selected	No	PDS selected	No	PDS selected

Notes: OLS regression or Linear with post-double-selection of controls from variables used in randomization and its squared terms, plus average gender dummy, average age, average number of children, average dummy of Kyrgyz ethnicity, average dummy of chosen Kyrgyz language, tenure of the manager in years. Standard errors are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.3: Treatment Effects on Productivity and Retention

	Productivity July	Productivity October	Productivity February	Retention July	Retention October	Retention February
Treatment	-1.5e+03	-1.2e+03	-1.5e+03	-0.036*	-0.038	-0.021
	(2287.538)	(2560.299)	(3086.635)	(0.021)	(0.026)	(0.029)
Observations	951	917	792	1058	1058	1058
Mean Outcome	31000	35000	39000	0.10	0.13	0.25
Controls	PDS Selected	PDS Selected	PDS Selected	PDS Selected	PDS Selected	PDS Selected

Notes: OLS regression or Linear with post-double-selection of controls from variables used in randomization and its squared terms, plus average gender dummy, average age, average number of children, average dummy of Kyrgyz ethnicity, average dummy of chosen Kyrgyz language, tenure of the manager in years. Standard errors are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

B Appendix Survey

Introduction

Q1. Welcome! This survey is part of a research study. By answering attentively and honestly, you will help top management understand you better. None of your colleagues or managers will see your answers.

Q2. Please enter your first name, last name, and office code.

- First Name: _____
- Last Name: _____
- Office Code: _____

Q3. Please enter your position.

Position: _____

Q4. Please select your preferred language.

- Russian
- Kyrgyz

B.1 Fun and Team Building

Q5. On a scale from 1 (not cohesive at all) to 7 (extremely cohesive), how cohesive would you say your office team is?

- 1, 2, 3, 4, 5, 6, 7

Q6. How often do you experience enjoyment or laughter during your workday?

- 1 - Never
- 2 - Rarely
- 3 - Sometimes
- 4 - Often
- 5 - Always

Q7. How often do you engage in informal conversations or socialize with colleagues during breaks or after work?

- 1 - Never
- 2 - Rarely
- 3 - Sometimes

- 4 - Often
- 5 - Always

Q8. How often does your office organize events or celebrations to foster team cohesion?

- 1 - Never
- 2 - Rarely
- 3 - Sometimes
- 4 - Often
- 5 - Always

Q9. How often do you participate in workplace-organized team-building or community events?

- 1 - Never
- 2 - Rarely
- 3 - Sometimes
- 4 - Often
- 5 - Always

Q10. How well do you think your colleagues support each other and contribute to a positive work environment?

- 1 - Not at all
- 2 - A little
- 3 - Moderately
- 4 - Well
- 5 - Very well

Q11. To what extent do you feel that a fun and friendly atmosphere is valued and encouraged in your workplace?

- 1 - Not at all
- 2 - A little
- 3 - Moderately
- 4 - Well

- 5 - Very well

Q12. How would you rate the level of trust and camaraderie among your colleagues?

- 1 - Not at all
- 2 - A little
- 3 - Moderately
- 4 - Well
- 5 - Very well

B.2 Advice and Support

Q13. How willing are you to dedicate your personal time to help colleagues with work-related issues?

- 1 - Not willing at all
- 2 - Rarely willing
- 3 - Sometimes willing
- 4 - Mostly willing
- 5 - Always willing

Q14. How comfortable do you feel asking colleagues for advice on work-related matters?

- 1 - Very uncomfortable
- 2 - Somewhat uncomfortable
- 3 - Neutral
- 4 - Comfortable
- 5 - Very comfortable

B.3 Intrinsic motivation

Q15. Please indicate how much you agree or disagree with the following statements:

- I am passionate about my work.
- I give my all to ensure I perform well at work.
- I feel my work has a positive impact on others or contributes to a meaningful goal.

- My work is genuinely interesting to me.

Responses:

- Strongly disagree, Disagree, Neutral, Agree, Strongly agree

C Diary

Q16. Please reflect on your past month and indicate how often you engaged in the following activities:

- Interacting with existing clients
- Seeking new clients
- Learning new procedures
- Assisting or training colleagues
- Taking breaks alone or with colleagues
- Discussing marketing strategies
- Working on team collaboration strategies
- Handling customer complaints
- Helping the manager approve loans
- Training provided by senior staff

Responses:

- A lot of time (more than 3 hours per day on average)
- Substantial time (1-2 hours per day on average)
- Rarely (15-30 minutes per day on average)
- Almost never

Q17. How many hours per week do you spend on your work responsibilities?

C.1 Incentivized Questions (wave1, for wave 2 other two question)

Q18. If you answer the following two questions correctly, you will receive a 100 som reward for each correct answer.

Q19. Which office in Russia is considered the favorite due to its fantastic, friendly, and motivating atmosphere?

- Moscow Bolshaya Ordynka
- Vladivostok
- Saint Petersburg Honest
- Yesenina Novosibirsk
- Moscow Kursky
- Saint Petersburg Red Textile Worker

Q20. Based on 2022 loan statistics, how does the PAR30 of clients borrowing amounts over 80,000 som differ from those borrowing less?

- PAR30 is 0.1
- PAR30 is 1.5 times higher
- PAR30 is 0.2
- PAR30 is 0.3
- PAR30 is twice as high
- PAR30 is 2.5 times higher

C.2 Voluntary Office Work Participation

Q21. Imagine the following choice. For 20 randomly selected participants, one of the options below will be selected, and we will implement your choice. If you are chosen, you will either receive money and participate in office volunteer work for 3 hours during a weekend in June or opt out of this opportunity. Participation is entirely voluntary. What would you choose?

For each condition choose Participate or Not participate.

- Volunteer work without pay
- Receive 100 som for participation
- Receive 200 som for participation
- Receive 300 som for participation

- Receive 400 som for participation
- Receive 500 som for participation
- Receive 600 som for participation