The Value of Bonding at Work: Evidence from a Field Experiment *

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Abstract

We design an intervention to foster social ties at work and study its effects on performance and retention. We conduct a cluster-randomized field experiment in a large microfinance firm, subsidizing biweekly social activities for geographically dispersed offices over three months. The intervention increases collegiality and workplace friendships by 0.2–0.25 SD. Individual daily productivity is unchanged, but office-level team performance improves and employee turnover declines by 4–4.5 percentage points from a 9–13 percent baseline in subsequent months. The findings suggest the activities are valued as a non-wage amenity and help mitigating free riding in team tasks.

Keywords: Workplace Collegiality, Climate, Bonding, Field Experiment

JEL codes: M54, J32, C93

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1 Introduction

Workplaces are not just sites of production but also social environments. 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; Riordan, 2013). Recent Gallup data show that having a best friend at work is a strong predictor of employee engagement (Patel et al., 2022). The lack of socialization has also often been mentioned post-pandemic as a strong negative aspect of remote and hybrid work (Knight et al., 2022). Despite its importance, there has been little effort to design and evaluate interventions aimed at fostering social ties at work. This contrasts with the much richer literature on the impact of incentives (monetary and non-monetary) and other aspects of management on performance and employee retention.

While collegiality at work and friendships between employees may appear like a positive asset for a company, there may also be downsides to bonding at work. Social interactions between employees and managers can, for example, lead to unfair career advantages (Bandiera et al., 2009; Cullen and Perez-Truglia, 2023), and friendships at work may also be associated with conflicts, gossip, nepotism, inappropriate humor, or even sexual harassment (Berman et al., 2002; D'Cruz and Noronha, 2011; Pillemer and Rothbard, 2018).[1]

In this paper, we design and evaluate an intervention aimed at fostering social ties between employees and improving collegiality at work. We conduct a randomized controlled trial with a large white collar firm in Kyrgyzstan, which has 101 offices spread geographically across the country (about 1,000 employees). We randomly assign half of the offices to treatment or control. The intervention we propose is simple and low-cost: it consists of organizing social activities that require little planning or 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 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.[2] A priori, encouraging simple social activities and interactions between co-workers could be an attractive and low-

[1]Recent work by (Batut et al., 2021; Folke and Rickne, 2022; Adams-Prassl et al., 2024) document the prevalence of sexual harassment in workplaces and its negative impact on people's lives and careers

[2]The team-building and corporate entertainment industry is substantial and growing (https://www.globalgrowthinsights.com/market-reports/team-building-service-market-102111 last accessed 19.6.25), 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

cost tool to foster a positive workplace climate as they are easy to implement and may not even compete directly with working time.

Our objective is to evaluate the impact of the intervention on perceived collegiality at work and economically relevant outcomes–team productivity, individual productivity, and turnover. We also provide suggestive evidence on potential mechanisms using survey and incentivized measures. Because most mechanism proxies are measured in the endline survey and are therefore missing for employees who leave before wave 2, we do not attempt a formal mediation decomposition of the total treatment effect. Conceptually, we view collegiality as the primary mechanism: stronger social bonds can raise the utility value of the job as a horizontal non-wage amenity and can also increase the salience of team incentives and informal peer monitoring. In addition, we examine four proximate channels. First, the social activities could affect individual's intrinsic motivation to work and thereby increase effort and productivity. Second, they could increase productive interactions such as seeking or receiving relevant advice. Third, they can improve the transmission of information. Finally, the intervention could affect behavior through reciprocity toward the firm (gift exchange) (Akerlof, 1982; Fehr et al., 1993; Kube et al., 2012).

Like other firms operating in the finance sector across the world, the firm we partner with uses a highly competitive incentive structure for its employees, making it a particularly interesting setting to study, as such dynamics may challenge the development of a positive corporate spirit. While our experiment is conducted a microfinance institution in Kyrgyzstan, the underlying incentive problem—high-powered individual compensation coupled with tasks requiring costly cooperation and frequent turnover—is increasingly characteristic of modern labor markets. The employees resemble the vast population of gig economy workers, highly incentivized sales teams, and consultants, for whom retention and team cohesion are vital for long-term firm value (Burtch et al., 2018).

Our intervention consists of six social activities that the treatment offices were asked to organize over a three-month period. The possible activities included group lunches, movie nights, and team-building games. Over three months, treatment offices participated in six out of ten proposed activities, and the activities were chosen by the employees. The proposed intervention 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.

evidence or anecdotal accounts, leaving a gap in understanding how social bonding at work influences collegiality and performance.

Our data are based on administrative and survey data, and contain information on workplace collegiality, productivity and turnover. 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. Productivity and turnover are measured with administrative data from the firm. The first productivity measure is team performance in a firm-wide competition ranking offices based on various productivity metrics (e.g., portfolio growth, on-time repayments) and procedural adherence. Then we also have data on measures of productivity and turnover at the individual level over time. These data help us identify short- and medium-term impacts on relevant economic outcomes. The availability of both individual and group-level performance measures is unique and represents a contribution relative to prior studies. Finally, we also collected information on intrinsic motivation, the extent to which workers seek and receive advice, and we measure information transmission and reciprocity toward the firm through incentivized questions.

We find that structured social activities significantly increased collegiality and bonding with colleagues by an order of 0.2-0.25 standard deviation. Notably, we observe a 0.21 standard deviation increase in the reported number of close friends at work. These effects remain robust after accounting for multiple hypotheses testing using the Holm and Romano-Wolf corrections.

Turning to team productivity, we find that the intervention resulted in a significant improvement in relative performance of the treated offices in the firm-wide offices competition, with the effect being only marginally significant three months after the intervention.

Looking at the individual results, we observe a large reduction of turnover for the treatment period and in three months. Loan officers in the treatment group are 4 percentage points less likely to leave the company after the three months of the intervention and three months later compared to a baseline of 9% and 13% respectively.[3] 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 decreasing turnover.

The contrast between relatively large treatment effects on team productivity and null effects on individual productivity is a priori puzzling. A plausible explanation lies in the nature of the firm's incentive structure. While individual incentives drive direct output measures like portfolio volume, team incentives often rely on public

[3]The effects on turnover remain around 3 percentage points but are no longer significant seven months after the end of the treatment.

goods—such as procedural compliance quality, indicators related to clients behavior (for instance installation of company app on the phone), or office-level goal for a specific product sales. The team rewards are shared among all members. This structure creates a classic free-rider problem. Our results suggest that by fostering social bonds, the intervention mitigates this free-rider problem in team production, leading to higher group output even when individual effort on incentivized tasks remains constant.

Overall, the intervention substantially reduces turnover and improves team-level performance, while we find no detectable effects on individual productivity. This pattern suggests that collegiality primarily operates through retention and through mitigating free riding in team production, rather than by increasing individual output on already strongly incentivized tasks.

In terms of channels, we find little evidence of increases in intrinsic motivation, information sharing or willingness to seek or give advice. We do find that loan officers in treatment offices showed a greater willingness to volunteer for unpaid extra work at the office, 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). Together with the result that the treatment increased the number of friends at work and collegiality in the office, the treatment appears to work as a *non-wage amenity* (Mas and Pallais, 2017; Wiswall and Zafar, 2018; Sockin, 2022; Mas, 2025). This non-wage amenity appears to reduce turnover because employees feel treated better and/or because they value directly having more friends at work and a more collegial workplace.

The remainder of the paper is structured as follows. We discuss related studies and our contribution to the literature in Section 2. In Section 3, we present the experimental design. In Section 4 we present the main results. In Section 5 we discuss the external validity of our results and we conclude in Section 6.

2 Related literature

This paper contributes to a recent literature that evaluates management practices and organizational culture through randomized controlled trials. The literature in Organization and in Economics has mostly focused 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; Englmaier et al., 2025) and a number of recent studies evaluate experiments targeting leaders (Alan et al., 2023; Azulai et al., 2020; Friebel et al., 2022). These programs typically involve training

interventions targeting leadership styles. By contrast, our intervention requires no training and is designed to be simple and easily scalable. In that spirit, our findings also relate to economic studies examining the interplay between incentives and social relations among workers. Dur and Sol (2010) present a model where social cohesion requires (costly) attention and shows how team and relative incentives interplay with the incentives to engage in activities that promote social cohesion. In our setting, the company applies team incentives already, which could, by itself, trigger team cohesiveness. Dur (2009) presents a theoretical model where managers may trigger positive reciprocity from employees by giving them (costly) attention (as an alternative to higher wages). These studies model social activities in a principal-agent framework, where such activities require costly attention from managers or peers, yet also function as productive non-wage amenities. Delfgaauw et al. (2022) conduct a field experiment in a large Dutch retail company where they test the interplay of team incentives and social cohesion, and show that team incentives are more effective in teams that have stronger social cohesion at baseline. They also show that these incentives do not affect social cohesion within teams. Bandiera et al. (2013) show that team incentives affect performance and team formation, with workers less likely to team up with friends and more likely to team up with others of similar ability. Hossain and List (2012) demonstrate that incentives are sensitive to framing, showing that presenting bonuses as potential losses rather than gains significantly increased productivity in a Chinese manufacturing setting.

We also contribute to research 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, 2021). The literature in Economics on social identity applied to organizations (Akerlof and Kranton, 2005; Charness and Chen, 2020) proposes models whereby a sense of common identity leads to higher effort and more contributions to improve group outcomes. Evidence from field experiments confirm team identity as a potential trigger for reciprocity (Ai et al., 2016; Ye et al., 2022; Ai et al., 2023). Hackman and Wageman (2005) and Cohen and Prusak (2001) emphasize that social cohesion enhances team functioning and adaptability. Employees who feel connected to their peers are more likely to perform well and remain in their jobs (Riordan and Griffeth, 1995; Hodson, 1997; Carmeli et al., 2009; Park, 2019). Friendships at work may provide support and help workers navigate challenging situations (Ducharme and Martin, 2000) and may decrease turnover (Morrison, 2004; Mossholder et al., 2005). Recent studies also show that employees' mood matters for their productivity (Bellet et al., 2024).

To our knowledge, this is the first field experiment to target workplace culture through direct engagement with employees, rather than through managerial training

or top-down initiatives. 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; Haylock et al., 2023). The evidence from these studies is nonexperimental, however, and does not evaluate programs aimed at changing the culture.

Finally, our work also draws on insights from social psychology, particularly the literature on belonging (Cohen, 2022) and social exchange theory Cropanzano et al. (2017).

3 Experimental Design

3.1 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 through a decentralized network of over 100 offices distributed across the country. Offices range in size from 4 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 expand outreach, while maintaining strict 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 for the organization is employee turnover, particularly among newly hired loan officers. More than 50% of new employees leave within their first year. High turnover 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 turnover.

3.2 Treatment

The treatment we evaluate is an intervention designed to foster social ties and interpersonal bonding through structured 'fun' 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 require no specific abilities -particularly physical ones- and aimed to appeal to a broad audience. We deliberately avoided activities that were educational, work-related or involved competition on job-related skills.

The 10 proposed activities were chosen in partnership with the firm's management, based on suggestions from both researchers and 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[4]
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

[4]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.

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 was to have one activity every two weeks. 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. The head of sales informed treated offices that they were participating in a new headquarters initiative to enhance employee happiness, that is why the posters referred to a "Happy office."[5]

All activities, except for the picnic, lunch at a café, and the 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 our own research funds (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 on the activity that took place.

3.3 Randomization

Offices were randomized into treatment or control using efficient cluster randomization (Gallis et al., 2018). Half of the offices were assigned to the treatment group and the other half served as controls. The intervention lasted for three months, from May 1 to July 31.

3.4 Outcomes measures

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.

[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.

Two firm-wide surveys were administered: one on May 1 (baseline) and another on August 15 (endline, 15 days after the treatment ended). All loan officers were invited to participate and completed the survey simultaneously. 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.

The surveys included a range of questions -some incentivized- designed to measure primary outcomes and mechanisms (see full survey in the Appendix B). Employees received their payment for the incentivized questions at the end of the month together with their salary.

3.4.1 Outcomes: Primary Outcomes

First-stage outcomes:

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

The precise outcome variables we constructed are as follows:

1. *Collegial climate in the office based on survey direct reports.* We construct an index of perceived collegial climate, calculated as the average z-score over the 8 questions related to collegiality (Q4-Q11 of the survey).[6]

2. *Collegial climate in the office based on diaries.* This is our most direct measure of collegiality (Q18 of the survey). Participants were asked: *Please reflect on your past month and indicate how often you engaged in the following activities.* We compile a standardized index of frequency of social interactions based on the following activities: helping colleagues, receiving help from colleagues, talking to the manager, teamwork planning, chatting with colleagues, and having breaks or 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) *Q15: How many close friends would you say you have in your office?* (2) *Q16: I am happy to devote my personal time to help some of my office colleagues solve their personal problems.*[7]

[6]For all Z-standardized measures, we standardize based on mean and standard deviation in the baseline survey.

[7]This measure slightly deviates from the pre-registration plan. We initially intended to include a third item in the index (Q17), but we excluded it because it was a mechanism of attachment to

Second-stage outcomes:

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. The competition had three stages. Each stage lasted for three months, and the points started anew at the beginning of each stage, but they 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. Points are constructed from an explicit monthly scoring rule (core indicators plus a rotating super-indicator); the indicator set is announced in advance and is the same for all offices in a given month. Appendix B summarizes the scoring rules and the super-indicators used during the study period.

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, since it corresponds to the last month of the three-month intervention. We will consider the full three-month period of the third stage, covering the post-intervention period, 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 portfolio size and quality of the loans. This is measured in KGS.

3. **Employee turnover at three and seven months after the intervention.** This measure is also provided by the company.

3.4.2 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 turnover through various channels, and we included a specific set of questions in the surveys to explore these channels.

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the office rather than an outcome. We therefore excluded that third question from the measure of attachment to colleagues.

The channels we examine are the following:

- **Attachment to the office:** Social activities could make the workplace more enjoyable and increase the number of friends at work. This mechanism is captured by the first-stage outcomes described above.

- **Intrinsic motivation:** Social activities could affect employees' intrinsic motivation and thereby their productivity. Intrinsic motivation is measured by survey measures of intrinsic motivation (z-score based on Q14 of the survey) and self-reported working hours (Q19).

- **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 (Q20 and Q21 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' naming the office he sees as functioning best. 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 be 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-incentivized manner. We construct an index (z-score) aggregating answers to questions Q12 and Q13 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. Employees may want to reciprocate in line with theories of 'gift-exchange' (Akerlof, 1982; Fehr et al., 1993). We measure reciprocity in an incentivized manner (Q22 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 for 40 loan officers.[8]

[8]More precisely, we elicited a price list, asking whether participants were willing to volunteer for free, for 100 KGS, 200 KGS, and so on till 600 KGS. However, the variation was lower than expected, so we used free volunteering as the final measure.

4 Results

4.1 Randomization, Balance, and Compliance

Using data available from the firm as of mid-April 2023, we randomized teams[9] 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.
- 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

[9]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.

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.[10] After these adjustments, the final sample consisted of 48 teams (49 offices)in the treatment group and 50 in the control group (52 offices).[11]

The final sample includes all loan officers who participated at least in one wave from the 98 teams, excluding those who changed office in between waves (12 loan officers).[12] Table 1 presents the balance of observables at the team level (part of block randomization) and additional employee characteristics.

Despite the exclusion of some teams post-randomization, balance is preserved across the team-level observables used in stratification. Regarding other observables, the only significant difference is the higher share of women loan officers in the treatment group. Given the number of covariates, some imbalances are expected by chance. 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 treatment offices organized six events, individual loan officers attended an average of 5.39 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.

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

[11] We still have one team in treatment and two teams in control that consist of two offices each. These offices are located in the same physical space; however, one office serves a neighboring village and is classified as a "mobile office," frequently traveling to serve clients in more distant locations. For regulatory reasons, they are recorded as separate administrative units in the data. Importantly, they are managed by a single manager and effectively function as one office.

[12] In total, 1,109 loan officers participated in the baseline survey, and 1,051 took part in the endline survey, with 905 officers participating in both waves. Among the 1,109 loan officers who participated in the baseline, 108 had left the company by the time of the endline survey, and 51 were still employed but absent from the office on the day of the endline survey. These figures indicate that nearly all employees participated in the baseline, with slightly higher absence observed at the endline, likely due to timing: the endline was conducted in August, a period typically associated with employee vacations.

Table 1: Comparison of Control and Treatment Groups

Variable	Control	Treatment	Difference	p-value
Part of block randomization				
Number of employees	13.374	13.313	-0.061	0.96
Number of clients	3,235	2,942	-293	0.45
Portfolio size, KGS	1.399e+08	1.394e+08	-4.889e+05	0.98
Portfolio at risk 7 days, KGS	1.608e+06	1.783e+06	175,809	0.73
Portfolio at risk 30 days, %	1.123	0.963	-0.160	0.63
Portfolio growth March 2023, KGS	251,637	268,947	17,311	0.83
Points in competition March 2023	11.426	16.200	4.775	0.49
Points in competition February 2023	17.032	19.814	2.782	0.73
Regional dummies (12, min p-value)	.	.		0.095
Not part of block randomization				
Female	0.710	0.771	0.062	0.06*
Age	31.658	32.170	0.512	0.30
Experience of managers, months	119.326	107.021	-12.304	0.27
Number of children	1.766	1.925	0.159	0.11
Productivity March 2023, KGS	26,919	25,581	-1,338	0.56
Kyrgyz language chosen	0.591	0.524	-0.067	0.31
Observations	599	559		

Notes: Balance table for loan officers who participated in at least one vawe of the survey. The p-values are based on office-level clustered standard errors.

4.2 Empirical Specification

We estimate the average treatment effect on an outcome of interest y while conditioning on covariates selected using the post-double-selection (PDS) procedure of Belloni et al. (2014):

$$y_{if} = \alpha_1 + \alpha_2 T_f + \mathbf{X}'_{if}\gamma + \epsilon_{if}, \tag{1}$$

where y_{if} denotes the outcome of employee i in office f (survey-based outcomes use wave-2 measures). T_f is an indicator equal to one if office f was assigned to the treatment group. $\mathbf{X}_{if}$ is a vector of baseline covariates that may predict y_{if}, selected using the PDS methodology.

For office-level outcomes, the specification is adapted in the natural way using office-level covariates only. The set of candidate covariates includes all variables used in the randomization protocol and their squared terms; for individual-level outcomes we additionally include April productivity and its squared term. Standard errors are clustered at the office level.

Table 2: Events and Participation

	Control	Treatment	Total
Number of events participated in	0	5.39	2.60
Picnic	0	91.1 %	44.0 %
Lunch together	0	83.9 %	40.5 %
Movie night	0	79.4 %	38.3 %
Potluck breakfast	0	69.6 %	33.6 %
Pantomime game	0	45.3 %	21.8 %
Compliment-letter game	0	44.5 %	21.5 %
Two lies one truth game	0	36.9 %	17.8 %
Singing competition	0	32.0 %	15.5 %
Nostalgic day	0	29.3 %	14.2 %
Creating a flash-mob video	0	27.2 %	13.1 %
N loan officers	599	559	1158

Notes: Each treatment office was instructed to organize six out of ten suggested events. Participation refers to the average number of events attended by each loan officer. Values represent sample means.

The coefficient of interest is α_2, which captures the average treatment effect.

For transparency, we report in Appendix all main results estimated without covariates. For survey-based outcomes, we also estimate a difference-in-differences specification with loan-officer fixed effects, which absorbs time-invariant individual characteristics. This specification restricts the sample to employees observed in both survey waves and therefore excludes newly hired staff and those absent during one of the waves.

Finally, to account for multiple hypothesis testing, we adjust p-values using the Romano–Wolf stepdown procedure (Romano and Wolf, 2005; Clarke et al., 2020).

4.3 Treatment Effects on First-Stage Outcomes

As described in subsection 3.4.1, 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 regression model of endline outcomes with post-double-selection (PDS) of controls with standard errors clustered at the office level.

The results show positive and significant treatment effects of the intervention on all three first-stage outcomes. Model (1) shows that the treatment increased perceived collegial climate by 25.4% standard deviations ($p < 0.05$) relative to the control group. Similarly, as model (2) shows, the diary-based measure of collegial climate reflects a

Table 3: Treatment Effects On First Stage Outcomes

	Collegial Climate Survey Index (1)	Collegial Climate Diary Index (2)	Care Colleagues Index (3)
Treatment	0.252**	0.224***	0.202***
	(0.115)	(0.082)	(0.074)
Observations	1005	1005	1005
N clusters	101	101	101
Controls	PDS selected	PDS selected	PDS selected

Notes: Linear regressions with post-double-selection (PDS) controls drawn from baseline covariates and their squares, including 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. Results without controls are presented in Appendix Table A.1. Results for diff-in-diff specification are presented in Appendix in Table A.2 Standard errors clustered at the office level are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

statistically significant improvement of 22.4% 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 20.2% 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. For robustness, we present results with no controls and based of difference in difference analyses in Appendix A (Tables A.1 and A.2, respectively). The results are qualitatively the same.

Given imperfect compliance, we also estimate local average treatment effects (LATE), reported in Table A.3 in the Appendix. The estimation results indicate a significant causal effect of event attendance on all three first-stage outcomes. Not surprisingly, the LATE estimates are somewhat larger, given that the targeted number of events is six. Estimates range from 0.036 for the Care Colleagues Index to 0.045 per event for the Collegial Climate Survey Index.

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.

Of course, some of the components of the indices are directly correlated with the intervention, while others less so. We consider the components of each main outcome to identify which components are most responsive to treatment. Figure 1 presents the components of the Collegial Climate Survey Index. Out of eight components, four are significantly affected by the intervention: frequency of enjoyment and laughter, activities and celebrations, social events, and colleagues supporting one another. The

Figure 1: Components of Collegial Climate Survey Index

Notes: Each component corresponds to a survey item (see Appendix for details). Values in parentheses indicate the response scale; values in brackets show baseline means.

fact that treatment effects are largest for activities and social events is reassuring, as these measures most directly reflect the intervention. But we also see that other components have been affected, such as enjoyment and laughter, and the extent to which colleagues support one another. While only four components changed significantly, all other components moved in the same direction and towards stronger collegiality.

Figure 2 presents the components of the Collegial Climate Diary Index. Out of six components, three are significantly affected by the intervention: the time spent talking to managers, frequency of teamwork planning, and the frequency of lunches together. Additionally, all components 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, we conclude that the intervention had a meaningful and consistent impact across first-stage outcomes, fostering a more collegial and supportive work environment.

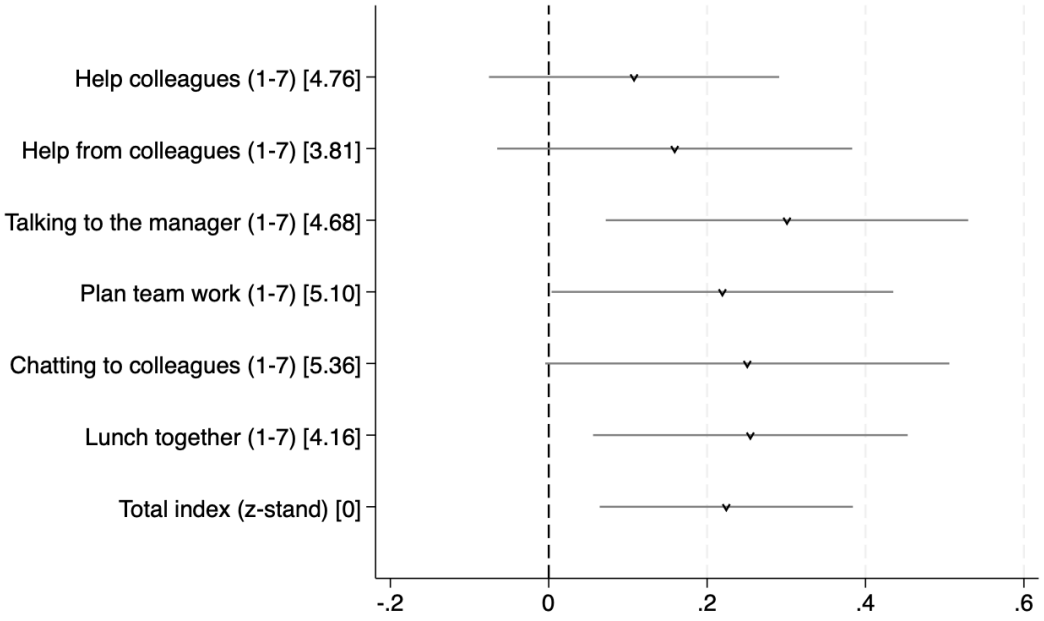

Figure 2: Components of Collegial Climate Diary Index

Notes: Each component corresponds to an activity in the diary module (see Appendix B, Section 5). Parentheses denote the response scale; brackets show baseline means.

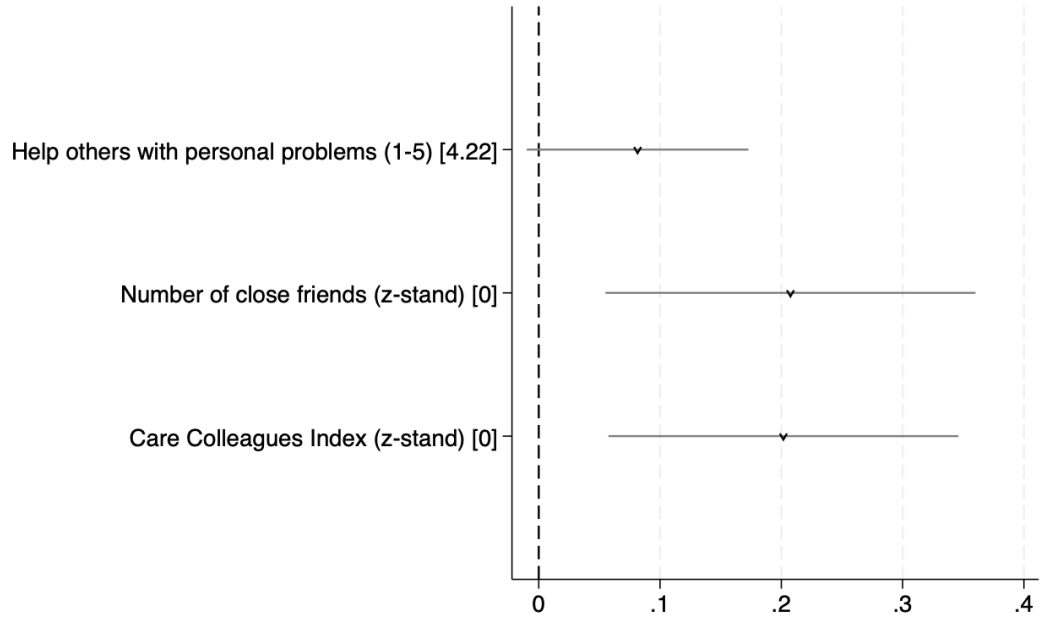

Figure 3: Components of Care Colleagues Index

Notes: Each component reflects a survey question related to collegial attachment (see Appendix). Parentheses indicate the response scale; brackets show baseline means.

4.4 Treatment Effect on Second-Stage Outcomes

As mentioned in subsection 3.4.2, 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 in the subsequent months. A key advantage of this measure is that, unlike productivity or turnover, it is recorded at the office level, which coincides with the level at which treatment was assigned.

The competition is a long-standing institution in the company and typically runs from February to October. The overall prize is participation in a four-day corporate retreat abroad, complemented by monthly prizes of USD 200–500. Performance is evaluated using objective indicators that vary by month and are announced in advance.[13] These indicators predominantly relate to productivity—such as portfolio growth, repayment rates, or sales volume—but may also include metrics tied to managerial priorities. For example, a given month may emphasize sales of a particular product, compliance with procedural standards, or client feedback. Office points and rankings are published monthly. As the main incentive, all employees in the office that wins each three-month stage attend the year-end retreat abroad.[14] Importantly, the competition outcomes are not subjective manager assessments. Although the super-indicator varies by month, it is always tied to observable metrics the firm prioritizes at that time (e.g., in July the super-indicator is the share of incomplete loan applications detected in random audits, where lower shares imply higher rank). We therefore interpret higher points and better rank as improved office-level performance on firm-defined objectives.

Why does the firm maintain this competition? Loan officers already face high-powered individual incentives aligned with profitability. Yet the firm views group-based incentives as valuable for several reasons. First, they motivate senior employees to mentor newcomers and facilitate knowledge transfer. Second, team incentives create peer-monitoring benefits; colleagues may share private information about risky clients or detect irregularities. Third, the firm often pursues specific strategic or regulatory targets—such as piloting a new product, deploying excess liquidity earmarked for a particular lending line (for instance, Islamic loans), or meeting regulatory indicators—and group incentives help align office-wide effort toward these objectives.

[13] See detailed indicators for each months of the competition in Appendix B

[14] For 2023, this event took place in Antalya, Turkey in January 2024.

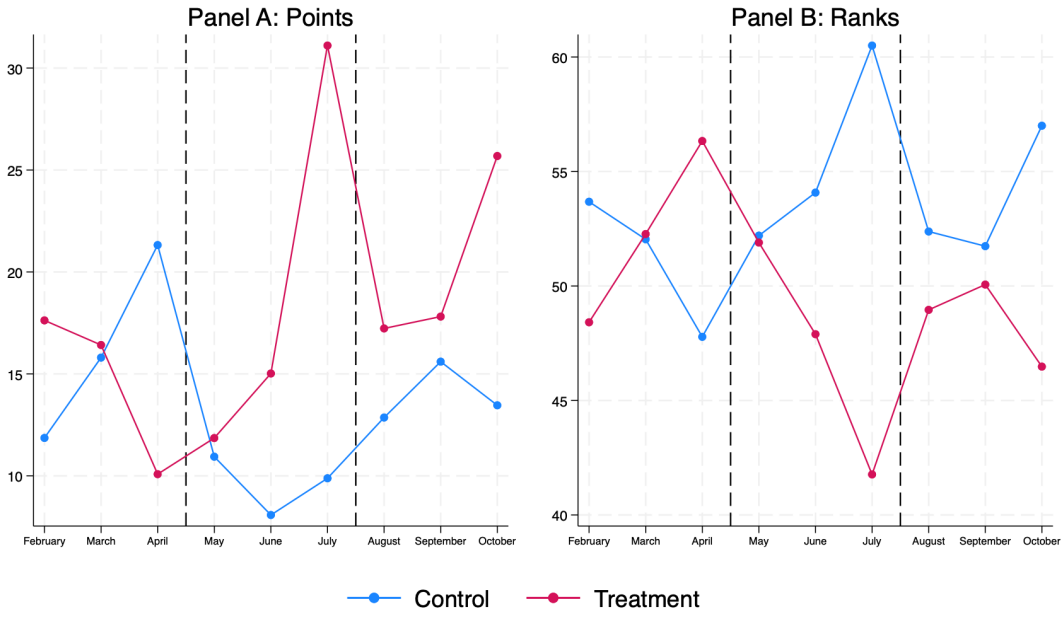

Figure 4: Dynamics of Average Points and Ranks in the Competition
Notes: Panel A shows average monthly points (higher is better); Panel B shows average ranks (1 = best, 102 = worst). Scoring criteria vary monthly based on firm-defined indicators.

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 started 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, 21.2 additional points ($p < 0.01$) and improving their rank by 18.7 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 12.2 points ($p < 0.10$) and improving their rank by 10.5 places ($p < 0.10$). LATE estimates are presented in Table A.5, and provide the same qualitative insight. Romano-Wolf correction leads to significant effect for points and place in July on 5% significance level.

Table 4: Treatment Effect on Performance in the Competition

	Panel A			
	Points July	Points August	Points September	Points October
Treatment	21.22***	4.37	-0.66	12.23*
	(6.96)	(6.78)	(6.77)	(7.27)
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	-18.73***	-3.42	0.42	-10.52*
	(5.64)	(5.95)	(5.27)	(5.85)
Observations	98	98	98	98
Controls	PDS selected	PDS selected	PDS selected	PDS selected

Notes: Linear regressions with post-double-selection (PDS) controls drawn from baseline covariates and their squares, including 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. Results without controls are presented in Appendix A Table A.4. Standard errors clustered at the office level are reported 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.6 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.[15] In contrast, when looking at the period from May to October (models (3), (4), and (7), (8)), the treatment group performs significantly better than the control group, conditional on the previous month's performance.

Summing up, the results highlight positive treatment effects on performance in the competition, particularly in the final month of the intervention. While treatment effects fade after the competition resets in September, performance differences reemerge in October, suggesting potential persistence. 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 turnover

Next, we consider the individual productivity of the loan officers and turnover. We have three data points for productivity and turnover after intervention: end of July

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

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

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.[16]

For turnover, we examine whether loan officers who were employed at the start of the experiment (May 1, 2023) and newly hired employees in the period of the experiment are no longer employed at the firm at the subsequent dates.

Table 5: Treatment Effects on Productivity and Turnover

	Productivity July	Productivity October	Productivity February	Turnover July	Turnover October	Turnover February
Treatment	-259.703	339.963	-282.820	-0.041**	-0.045**	-0.031
	(783.770)	(955.521)	(1327.201)	(0.019)	(0.023)	(0.025)
Observations	1056	1006	858	1158	1158	1158
Mean Outcome	2.9e+04	3.3e+04	3.8e+04	0.09	0.13	0.26
Clusters	101	101	101	101	101	101
Controls	PDS Selected	PDS Selected	PDS Selected	PDS Selected	PDS Selected	PDS Selected

Note: 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. For the new employees April productivity is set to zero. Results without controls are presented Table A.7 in Appendix . Standard errors are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5 reports the treatment effects on productivity and turnover. For productivity, the estimated coefficients for July, October, and February are small in magnitude relative to the respective means and not statistically significant. This absence of effects is not entirely surprising, given that the firm already operates with high-powered individual incentives, which may leave limited scope for additional improvements through collegiality-enhancing interventions.

By contrast, the turnover results in columns (4) and (5) for July and October are notable. The coefficients of -0.04 in both months are large relative to the corresponding mean turnover rates (0.09 and 0.13, respectively) and statistically significant at the 5 percent level. The medium-term result for February (column 6) yields a smaller coefficient of 0.03, relative to a larger mean of 0.26, and is statistically insignificant. Taken together, these patterns that collegiality acts as a retention technology rather than an individual productivity technology in high-incentive environments.

Treatment effects on individual productivity could be influenced by selective retention. If lower-productivity employees are more likely to leave the firm, delayed turnover

[16]We do not have access to the exact formula, and the data we observe are a linear transformation of actual productivity. As a result, the measure we use is proportional to the profit the loan officer brings to the firm.

may mechanically attenuate estimated productivity effects. To partially address this concern, we re-estimate the July and October productivity regressions restricting the sample to employees who remain in the firm in February 2024. As expected, the treatment coefficients increase in magnitude, but they remain statistically insignificant as shown in Table A.8 in Appendix.

To better understand the treatment effects, we examine the determinants of productivity and turnover prior to the intervention and in particular how these correlate with measures of collegiality. For productivity, we use data from April; for turnover, we correlate pre-treatment observables and measures of collegiality with turnover status in October. Table 6 reports coefficients of OLS regressions for productivity and turnover. Experience is a strong predictor of productivity with diminishing returns (models (1) and (2)). Turnover, in contrast, is negatively associated with April productivity, suggesting that lower-performing loan officers are more likely to leave the firm (models (3) and (4)).

We examine three measures of collegial climate: a survey-based collegial climate index, a diary-based climate index, and a care-for-colleagues index. We find that the collegial climate measures based on diary and survey indices are negatively, though not significantly, associated with individual productivity, while the care index is positively and significantly related to individual performance. These opposing signs suggest potential trade-offs between engagement in social activities and work-related tasks. For turnover, the Collegial Climate Diary Index is negatively associated with turnover, even after controlling for productivity, while the survey-based and care for colleagues indices are positively correlated with turnover but the estimates are rather small and not significant. These results are just correlational, of course, but they are in line with the hypothesis that a more collegial work environment helps retain staff.

Summing up, we observe statistically significant effects on competition performance and on turnover. 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 results in July 2023 remains significant for both places and points at the 5% significance level.

4.6 Channels

The intervention substantially improved measured collegiality in the workplace, increased team productivity, and reduced turnover. This section discusses potential mechanisms.

Table 6: Determinants of Productivity and Turnover

	Productivity April	Productivity April	Turnover October	Turnover October
Age	1212.47	924.89	-0.03***	-0.03**
	(747.43)	(767.19)	(0.01)	(0.01)
Age squared	-14.04	-10.25	0.00**	0.00**
	(11.42)	(11.71)	(0.00)	(0.00)
Female	1500.41	1233.28	-0.08***	-0.07***
	(1815.84)	(1826.94)	(0.03)	(0.03)
Experience (months)	898.07***	899.22***	-0.00**	-0.00**
	(72.17)	(74.03)	(0.00)	(0.00)
Experience squared	-2.89***	-2.91***	0.00**	0.00**
	(0.67)	(0.68)	(0.00)	(0.00)
Collegial Climate Survey Index		-2600.00*		0.01
		(1410.85)		(0.01)
Collegial Climate Diary Index		-428.37		-0.02**
		(631.18)		(0.01)
Care Colleague Index		1546.47**		0.01
		(668.62)		(0.01)
Productivity April			-0.00***	-0.00***
			(0.00)	(0.00)
Productivity April squared			0.00***	0.00***
			(0.00)	(0.00)
Constant	-23000.00**	-18000.00	0.83***	0.81***
	(11000.00)	(12000.00)	(0.19)	(0.19)
Observations	1058	998	1052	993
R^2	0.49	0.50	0.10	0.10
Clusters	101	101	101	101

Notes: Coefficients from OLS regressions for productivity and turnover (indicator for having left the firm in October). Only baseline survey responses are used. Standard errors clustered at the office level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A practical constraint is that most mechanism proxies are measured in the endline survey (wave 2). Employees who leave prior to wave 2 are not surveyed, so post-treatment mechanisms are missing precisely for those at the margin of quitting the firm. Because treatment affects turnover, the composition of endline respondents is endogenous. For this reason, we do not attempt a formal mediation decomposition of the total treatment effect. Instead, we provide suggestive evidence by (i) documenting baseline associations between candidate mechanisms and key outcomes, and (ii) estimating treatment effects on the corresponding mechanism proxies among wave-2 respondents.

We view collegiality as the primary mechanism. A more positive peer environment and new friendships can increase the salience of team incentives and informal peer monitoring, reducing free riding on team tasks. Collegiality is also a horizontal non-wage amenity: it raises the utility value of the job and can therefore reduce separations.

The intervention could also affect other channels (directly or indirectly through collegiality), including intrinsic motivation, information transmission, advice seeking and giving, and reciprocity toward the firm. While our collegiality measures capture horizontal non-wage amenities (amenities among co-workers), reciprocity toward the firm serves as a proxy for a vertical non-wage amenity, reflecting the employee–employer relationship. In contrast, intrinsic motivation, information transmission, and advice seeking/giving are productivity channels that may affect performance more directly. We next describe how each proxy is measured and assess whether the intervention shifted these measures.

To measure intrinsic motivation, we construct an index based on the self-reported working hours per week and degree of 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.

The measure of Advice Seeking and Giving is based on an index aggregating responses (from 1 to 5) to two survey items (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 measure the degree of information transmission, we rely on 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 "office with the best atmosphere in Russia") and

another related to general company statistics (e.g., differences in credit risk among client groups). Employees were later asked about these facts in the survey and 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 7 reports two sets of results. Columns (1)–(6) show baseline associations between each channel proxy and (i) baseline collegiality measures and (ii) baseline outcomes. Column (7) reports treatment effects on each channel proxy measured at endline (wave 2).

At baseline, intrinsic motivation and reciprocity are positively associated with productivity and (for intrinsic motivation) negatively associated with turnover, while information transmission is positively associated with productivity. Advice seeking/giving is strongly associated with collegiality measures but is not systematically related to the main outcomes at baseline.[17]

Overall, among the alternative channels we consider, only reciprocity toward the firm (willingness to volunteer unpaid time) exhibits a detectable treatment response, whereas intrinsic motivation, advice seeking/giving, and information transmission do not. Combined with the large treatment effects on collegiality measures documented above, this pattern is consistent with the intervention operating primarily through workplace amenities—stronger co-worker relationships and, to a lesser extent, improved employee–employer reciprocity—rather than through broad changes in motivation or information flows. Given that endline channel measures are observed only for wave-2 respondents and turnover is itself affected by treatment, these results should be interpreted as suggestive evidence on mechanisms rather than as a causal mediation decomposition.

5 External Validity

As with any field experiment, external validity is an important consideration. We follow the transparency checklist proposed by List (2020) to assess the generalizability of our findings.

[17] One puzzling finding is the significant negative correlation between performance in competition in April and information transmission index.

Table 7: Channels - Correlation to outcomes and treatment effects

Panel A. Intrinsic Motivation Index

	Collegiality Survey (1))	Collegiality Diary (2)	Care Colleagues (3)	Points April (4)	Productivity April (5)	Turnover July (6)	Intrinsic Motivation (7)
Intr Motiv Index	0.419***	0.193***	0.450***	0.400	5629.4***	-0.032*	
	(0.043)	(0.034)	(0.047)	(2.119)	(1572.779)	(0.017)	
Treatment							0.038
							(0.037)
Observations	1008	957	985	1008	1005	1008	1005
Clusters	101	101	101	101	101	101	101

Panel B. Advice seeking/giving Index

	Collegiality Survey (1))	Collegiality Diary (2)	Care Colleagues (3)	Points April (4)	Productivity April (5)	Turnover July (6)	Advice Index (7)
Advice Index	0.319***	0.135***	0.296***	0.502	-487.147	0.005	
	(0.032)	(0.022)	(0.030)	(1.525)	(1601.984)	(0.009)	
Treatment							-0.018
							(0.069)
Observations	1058	999	1030	1058	1055	1058	1005
Clusters	101	101	101	101	101	101	101

Panel C. Information Transmission Index

	Collegiality Survey (1))	Collegiality Diary (2)	Care Colleagues (3)	Points April (4)	Productivity April (5)	Turnover July (6)	Information Index (7)
Information Index	-0.031	0.056	0.057	-5.506**	3731.083**	-0.009	
	(0.046)	(0.037)	(0.042)	(2.445)	(1778.711)	(0.017)	
Treatment							0.076
							(0.085)
Observations	1058	999	1030	1058	1055	1058	1005
Clusters	101	101	101	101	101	101	101

Panel D. Reciprocity towards firm

	Collegiality Survey (1))	Collegiality Diary (2)	Care Colleagues (3)	Points April (4)	Productivity April (5)	Turnover July (6)	Reciprocity (7)
Reciprocity	0.156***	0.155***	0.293***	0.209	4742.507***	-0.023	
	(0.058)	(0.056)	(0.062)	(3.650)	(1744.893)	(0.028)	
Treatment							0.055**
							(0.026)
Observations	1058	999	1030	1058	1055	1058	1005
Clusters	101	101	101	101	101	101	101

Notes: Models (1)–(6) are OLS regressions of the dependent variable on each channel in the baseline, without controls. Model (7) reports treatment effect estimates from a linear regressions with post-double-selection (PDS) controls drawn from baseline covariates and their squares, including 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 clustered at the office level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Selection. How representative is the setting we are studying? The experiment was conducted in a large white-collar firm in Kyrgyzstan. Kyrgyzstan is one of the least developed republics of the former Soviet Union, located in the Central Asian region with a GDP of $2,424 per capita (source: World Bank, 2024). The country was among the first in the post-Soviet territory to move to the market economy. Labor force participation in 2023/24 was around 71% (source: IMF) and female labor force participation is around 53-55% (source: World Bank), which is a bit lower than in developed countries but substantially higher than other low-middle-income countries like India. The share of women working in our partner firm is quite high (75%), although female representation tends to be relatively high in the sector of microfinance in developing countries.[18] According to Mia et al. (2022), the microfinance sector across Eastern Europe and Central Asia shows strong female representation at board (31%), managerial (44%), and loan-officer (38%) levels, comparable to countries like India and Pakistan, and even the US. Importantly, we find no evidence that the treatment effects on our primary outcomes are driven by female employees. This pattern provides reassurance that the effects of the intervention are likely to be portable to more gender-balanced white-collar firms.

This firm combines high-powered individual incentives with tasks that require coordination and peer monitoring, and it faces high turnover. Many modern workplaces share these features, so the experiment provides evidence relevant to settings with similar incentive and production structures, including gig economy platforms, competitive sales forces, and white collar firms with both individual and team incentives.

Naturalness of the environment The intervention was implemented in a naturalistic setting and was integrated into normal workplace routines. The treatment was not 'artificial' in any way.

Attrition Administrative outcomes are observed for essentially the full relevant population in firm records; survey response is high at both waves among employees present at work, though endline mechanisms are not observed for employees who leave before wave 2. The attrition is not selective, which means that our sample remains internally valid over time.

[18]The relatively high share of female workers in the company can be attributed to two main factors. First, at the time of its founding, the company deliberately adopted a strategy of targeting female workers, consistent with the traditional mission of microfinance institutions. This focus not only aligned with the firm's social objectives but also facilitated access to external funding, as it appealed to international lenders such as the European Bank for Reconstruction and Development (EBRD). Second, the company has a strong presence in rural areas, where male labor supply is shaped by seasonal migration patterns. Many men work as migrant laborers in Russia, employed as couriers, taxi drivers, or in construction. This out-migration reduces the pool of men competing for local employment opportunities, thereby increasing the relative share of women in the company's workforce.

Scalability The intervention was deliberately designed to be low-cost and scalable. The cost per participant for the activities was around $24. By comparison, commercial team-building activities in Kyrgyzstan typically cost $200–500 per person per day—an order of magnitude more expensive.[19]

6 Conclusion

This study presents evidence from a randomized controlled trial evaluating the effects of structured social activities on collegiality and workplace outcomes.

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 were randomly assigned to receive subsidies to organize biweekly 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 find no significant effects on individual productivity, but observe a 40% reduction in turnover. There is no significant difference in turnover rates 7 months after the intervention, which suggests that the intervention may have helped delaying departures.

We find that the most plausible mechanisms driving these effects are twofold: First, the improved collegiality may have worked as a non-wage amenity, and thereby directly increasing the utility of the job. Employees report the office being more collegial and have more friends at work, which could have contributed to the reduction in turnover. Second, the intervention may have triggered 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 were deliberately chosen to be broadly accessible, requiring no specific skills and appealing to a wide range of employees. 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.

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

[19] see for example Team-building tours offered by the firm Advantour

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 these activities to monetary compensation in fostering productivity and decreasing turnover.

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Appendix

A Additional Tables and Figures

Table A.1: Treatment Effects On First Stage Outcomes No Controls

	Collegial Climate Survey Index	Collegial Climate DiaryIndex	Care Colleagues Index
	(1)	(2)	(3)
Treatment	0.252**	0.224***	0.213**
	(0.115)	(0.082)	(0.091)
Observations	1005	1005	1005
N clusters	101	101	101
Controls	No	No	No

Notes: Notes: Linear regressions of endline outcomes with no controls. Standard errors clustered at the office level are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2: Treatment Effects On First Stage Outcomes Diff-in-Diff

	Collegial Climate Survey Index	Collegial Climate DiaryIndex	Care Colleagues Index
	(1)	(2)	(3)
Wave 2	-0.115*	-0.101**	-0.041
	(0.063)	(0.044)	(0.044)
Treatment*Wave2	0.176**	0.176**	0.175**
	(0.082)	(0.071)	(0.073)
Constant	-0.017	0.003	0.008
	(0.021)	(0.018)	(0.018)
Observations	1810	1760	1806
R^2	0.010	0.008	0.009
N clusters	101	101	101
Controls	FE	FE	FE

Notes: Linear fixed-effects regressions. "Wave 2" is a dummy for the endline survey. "Treatment × Wave 2" captures the treatment effect. Standard errors clustered at the office level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.3: LATE. IV estimation of LATE of number of events participate, with treatment as an instrument

	Collegial Climate Survey Index	Collegial Climate Diary Index	Care Colleagues Index
	(1)	(2)	(3)
Number of events attended	0.045**	0.040***	0.036***
	(0.021)	(0.015)	(0.013)
Observations	1005	1005	1005
N clusters	101	101	101
Controls	PDS selected	PDS selected	PDS selected

Notes: IV regressions with post-double-selection (PDS) controls drawn from baseline covariates and their squares, including 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 clustered on the office levels are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: 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	No	No	No	No
	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.5: Treatment effect on performance in the competition (LATE Estimates)

	Panel A			
	Points July	Points August	Points September	Points October
Number of events attended	3.439***	0.770	0.045	2.156*
	(1.081)	(1.193)	(1.223)	(1.281)
Observations	98	98	98	98
F-statistic first stage	4910.02	4879.10	5239.05	4879.10
Controls	PDS selected	PDS selected	PDS selected	PDS selected
	Panel B			
	Place July	Place August	Place September	Place October
Number of events attended	-3.149***	-0.603	0.029	-1.712*
	(0.869)	(1.047)	(0.954)	(0.932)
Observations	98	98	98	98
F-statistic first stage	4905.99	4879.10	5274.12	4905.99
Controls	PDS selected	PDS selected	PDS selected	PDS selected

Notes: IV (2SLS) regression. Controls are the same as selected for each model 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.6: 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.Rank					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	Mar-Apr	Mar-Apr	May-Oct	May-Oct	Mar-Apr	Mar-Apr	May-Oct	May-Oct
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.7: Treatment effects on productivity and turnover with no controls

	Productivity July	Productivity October	Productivity February	Turnover July	Turnover October	Turnover February
Treatment	-1.6e+03	-1.5e+03	-2.2e+03	-0.052**	-0.044**	-0.039
	(2289.289)	(2565.967)	(3130.831)	(0.025)	(0.020)	(0.028)
Constant	3.2e+04***	3.6e+04***	4.1e+04***	0.158***	0.115***	0.277***
	(1670.639)	(1840.826)	(2372.983)	(0.018)	(0.014)	(0.020)
Observations	972	930	796	1073	1073	1073

Note: Results are based on OLS regression with no controls. Standard errors are in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.8: Productivity of employees still employed in 7 months

	Productivity July	Productivity October
Treatment	316.122	662.263
	(822.719)	(1070.654)
Observations	860	860
Mean_Y	29000	33000

Notes: IV 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: Additional Information on Team Competition

In 2023, the following rules governed the team competition. Each month, team performance was evaluated based on three core indicators:

- Growth of the portfolio without payment delays (measured in KGS, averaged per loan officer),
- Share of timely repayments,
- Number of loans issued to new clients.

For each of these indicators, teams could earn between 10 and +25 points per month, depending on performance relative to predefined thresholds. For example, if portfolio growth without delays exceeded 300,000 KGS per loan officer, the team received +25 points for that month. If, instead, the portfolio declined by more than 50,000 KGS, the team received 10 points.

In addition, each month featured a rotating *Super Indicator of the Month*. Based on this indicator, all teams were ranked from best to worst. The highest-ranked team received 50 points, while the remaining teams received points equal to 51 minus their rank on the Super Indicator.

The Super Indicators used throughout the year were as follows:

- February: Share of repayments made online (as opposed to via cash desk),
- March: Average loan amount issued per loan officer to dormant clients,
- March: Average increase in Islamic portfolio per loan officer,
- April: Average amount of Islamic loans issued per loan officer,
- May: Share of timely repayments,
- June: Recovery of written-off loans from the office (rather than individual) balance,

- July: Average share of incomplete loan applications within the team (based on random audits); lower shares correspond to higher rankings,
- August: Average reduction in delayed repayments,
- September: Average portfolio growth,
- October: Share of clients who installed the mobile application.

C Appendix Survey

Introduction

Introduction 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.

Q1. Please enter your first name, last name, and office code.

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

Q2. Please enter your position.

Position: _____

Q3. Please select your preferred language.

- Russian
- Kyrgyz

Section 1 - Collegiality, Enjoyment and Social Interactions

Q4. 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

Q5. How often do you experience enjoyment or laughter during your workday?

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

Q6. 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

Q7. How often does your office organize events or celebrations to foster team cohesion?

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

Q8. How often do you participate in workplace-organized team-building or community events?

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

Q9. 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

Q10. 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

Q11. 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

Section 2 - Willingness to Seek Advice and Help

Q12. 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

Q13. 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

Section 3 - Intrinsic motivation

Q14. Please indicate how much you agree or disagree with the following statements: Responses:

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

Section 4 - Personal friendships and attachment to the office

Q15. How many close friends do you have among office employees?

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

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

Q16. I am happy to devote my personal time to help some of my office colleagues solve their personal problems.

Q17. The overall performance of the office is more important for me than my individual performance

Section 5 - Diary of daily activities

Q18. Please reflect on your past month and indicate how often you engaged in the following activities: Responses, 7 levels:

- A lot of time (more than 3 hours per day on average)
- Quite a lot of time (more than 2-3 hours per day on average)
- Substantial time (1-2 hours per day on average)
- More rarely (30 min-1 hoursper day on average)
- Rarely (15-30 minutes per day on average)
- Very rarely (less than 15 minutes per day on average)
- Almost never

- Interacting with existing clients
- Seeking new clients
- Learning new rules and procedures
- Helping colleagues
- Receiving help from colleagues

- Talking to the manager
- Think of my marketing strategies
- Teamwork planning
- Chatting with colleagues
- Having breaks or lunch alone
- Having breaks or lunch together with colleagues
- Helping the manager approve loans
- Explaining the products to clients
- Handling customer complaints
- Training by manager
- Training provided by senior staff
- Work with clients with delayed payments

Section 6 - Hours worked

Q19. How many hours per week do you spend on your work responsibilities? _____

Section 7 - Incentivized task to measure information transmission

If you answer the following two questions correctly, you will receive a 100 som reward for each correct answer. Time is limited to 1 minute to answer both questions.

Baseline questions:
Q20. 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

Q21. Based on 2022 loan statistics, how does the PAR30 of clients borrowing amounts over 80,000 som differ from those borrowing less?

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

Endline questions:
Q20. Which office impressed Bakhtiyar Latikhanovich by inviting him to a café on a weekend, where everyone dressed the same and created an amazing atmosphere of unity and team spirit?

- Talas
- Osh market
- Jalal-Abad
- Cholpon-Ata
- Uzgen
- Naryn

Q21. By statistics, if a client has a score of 7-10 points, their PAR30 is on average lower than that of clients with a score of 0-3. By how much lower?

- by 30%
- by 70%
- 1.5 times lower
- 2 times lower
- 2.5 times lower
- 3 times lower

Section 8 - Incentivized task to measure reciprocity

Q22. Imagine the following choice. For 40 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