Improving Workplace Climate in Large Corporations:

A Clustered Randomized Intervention*

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Abstract

We evaluate the impact of a training program aimed at improving the relational atmosphere in the workplace. The program encourages prosocial behavior and the use of professional language, focusing primarily on leaders' behavior and leader-subordinate interactions. We implement this program using a clustered randomized design involving over 3000 headquarter employees of 20 large corporations in Turkey. We evaluate the program with respect to turnover rate, the prevalence of support networks, and the perceived relational atmosphere. We find that treated firms have lower employee turnover, fewer employees lacking professional and personal help, and denser, less segregated support networks. We also find that employees in treated corporations are less inclined to engage in toxic competition, exhibit higher reciprocity toward each other, report higher workplace satisfaction and a more collegial environment. The program's success in improving leader-subordinate relationships emerges as a likely mechanism to explain these results. Treated subordinates report higher professionalism and empathy in their leaders, and they are more likely to consider their leaders as professional support providers.

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1 Introduction

Workplace climate, referring to the quality of the workplace and the relational atmosphere perceived by employees, is an essential factor for the long-term success of corporations (Barney, 1986; Boyce et al., 2015; Guiso, Sapienza and Zingales, 2015; Martinez et al., 2015; Gartenberg, Prat and Serafeim, 2019). The benefits of a positive workplace climate are many. For employees, these benefits span psychological well-being, engagement, and motivation, which ultimately reflect on performance (Ostroff, 1992; Judge et al., 2001; Srivastava et al., 2018; Guadalupe, Kinias and Schloderer, 2020). For firms, a positive relational atmosphere implies employee retention, productivity, profitability, and innovation (Edmans, 2011; Boyce et al., 2015; Guiso, Sapienza and Zingales, 2015; Graham et al., 2016, 2017). Despite these benefits, dysfunctional workplace climates characterized by toxic relational dynamics and low employee satisfaction are prevalent and impose tremendous costs on firms worldwide. According to a 2019 report from the Society for Human Resource Management (SHRM), 20% of U.S. employees quit their jobs in the last five years due to the toxicity in workplace relationships. Toxicity in the relational atmosphere in a workplace is typically characterized by the prevalence of antisocial behavior such as bullying, mobbing, gossiping, and disrespectful language among colleagues. These undesirable behaviors tend to emerge more easily in competitive work environments where communication is poor and individual performance is difficult to quantify (Akella and Lewis, 2019).

Leaders have a vital role in shaping the relational atmosphere in the workplace (Van den Steen, 2010; Inceoglu et al., 2018; Hoffman and Tadelis, 2021). This is, for instance, clearly indicated in the 2019 report of SHRM, which states that 58 percent of employees who quit because of a poor workplace culture blame their managers for it.[1] Leaders are in a prime position to create an environment where interactions are prosocial, language is professional, and teamwork is championed; or an environment where the communication is poor, the language is toxic, and interactions resemble zero-sum games (Bloom and Van Reenen, 2007; Bruhn, Karlan and Schoar, 2010; Bloom et al., 2013; Sharma and Tarp, 2018; Bandiera et al., 2020).[2] Employees' perceptions of workplace quality and their interactions with their colleagues are likely to be shaped by the relational culture their leaders establish. Employees who work in

[1] See https://pmq.shrm.org/wp-content/uploads/2020/07/SHRM-Culture-Report_2019-1.pdf

[2] There is an established literature on the importance of teamwork in corporations (Lindbeck and Snower, 2000; Hamilton, Nickerson and Owan, 2003; Lazear and Shaw, 2007), and some recent work showing that teamwork skills are highly valuable in corporations (Weidmann and Deming, 2020).

environments where they face regular mistreatment, disrespect, and condescending language likely adopt such behaviors as norms, pushing the firm's relational climate deeper into a dysfunctional state. In such circumstances, taking transformative actions may become a policy imperative.

This paper evaluates one such action, an unconventional workplace climate improvement program, offered to white-collar professionals in large corporations in Turkey. The program aims to improve the relational atmosphere in the workplace by encouraging prosociality and respectful language in professional relationships, focusing primarily on leaders' behavior and leader-subordinate interactions. The training comprises several modules implemented as a series of online workshops, followed by an 8-week project development work monitored by a professional implementing partner. The implementing partner is a consulting firm established by burned-out professionals who offer training on relational culture to large corporations. The main concepts covered in the program are effective communication by eliminating hostile and condescending language, enhancing prosociality in professional interactions, and increasing professional support among colleagues. Leveraging its extensive first-hand experience about highly destructive relationships in competitive corporations, the partner uses unconventional methods to deliver their program, including creative drama, active role-playing, vulnerability exercises, and imagery. An essential component of the program is a closely monitored 8-week follow-up where participants develop projects focusing on prosocial interactions and propose them to their top executives.

We evaluate this program using a sample of 20 large corporations operating in the energy, chemistry, defense, finance, construction, and textile sectors. All 20 participating corporations are major players in their respective sectors, and some are multinationals operating in Turkey.[3] Except for finance firms, these corporations employ a large body of blue-collar workforce. Our study concerns the white-collar professionals who work in the company headquarters. After securing the firms' cooperation for our study, we collected rich baseline data from their employees of all ranks by visiting company headquarters in person in Fall 2019. The program was offered to randomly selected 10 corporations after baseline. Our initial plan to implement the program in person in early 2020 was interrupted by the COVID-19 pandemic. After deliberations with the treatment firms, we decided to implement the program using online tools throughout the fall of 2020 and the spring of 2021. We conducted our endline in Summer 2021. The total number of professionals involved in the evaluation

[3]The relative market shares of the participating companies within their sectors range from 2.5% to 51%.

is over 3000, about 18% of whom hold a leadership (managerial) position.

The program is evaluated with respect to a wide range of outcomes that characterize the relational atmosphere and perceived workplace quality in a firm. Our toolkit contains incentivized games, social network elicitation templates, a detailed survey inventory, and administrative records of turnover and promotions. We implemented incentivized games to elicit prosocial and antisocial behaviors. Specifically, we measure the degree of toxic competition among colleagues using a performance sabotage game, trust and reciprocity using a trust game, and a sense of fairness using the ultimatum game. We elicited social networks to measure the prevalence of support at the department level. For this, we asked all employees to nominate colleagues from whom they receive (i) professional (work-related) support and (ii) support in personal matters. Using survey items, we construct indices to capture workplace satisfaction, perceptions of meritocracy in the firm, collegiality amongst employees, and descriptive and prescriptive behavioral norms. Finally, because the program implementation and endline unintentionally coincided with the COVID-19 pandemic where many firms switched to hybrid work arrangements, we also measured pandemic-induced social isolation feelings at endline.

We find that the program has a substantial impact on the firms' turnover rate. The employee turnover rate was relatively low between November 1, 2020, and July 1, 2021 (the implementation period). This was partly due to a nationwide firing ban imposed by the Turkish government on April 1, 2020, and lifted on July 1, 2021. Only 5% of employees in control firms left their firms within our implementation period, and we find that the intervention reduced the propensity to quit by 2 percentage points. In December 2021, we reached out to the firms again and asked for additional turnover data covering the period of the post-firing ban. Using these follow-up data, we find that the impacts we estimate on turnover persist beyond the implementation period. Treated firms experienced 3 percentage points lower employee turnover within the 5-month post-firing ban period, implying a 43% reduction in turnover relative to the control.

We also find that the program significantly increases prosociality and lessens antisocial tendencies in the workplace. Treated professionals are significantly less inclined to sabotage their colleagues' performance for their own gain in a competitive game. Specifically, treated professionals used 12% less sabotage endowment to destroy their opponents' performance than the control. While we estimate no significant improvement in interpersonal trust, we find that treated professionals reciprocate their colleagues' trust more generously (by about

11%) than those in the control firms. At the departmental level, the program significantly lowers the proportion of employees lacking support and makes within department support networks significantly denser and less segregated.

We then show that the program successfully improves perceived workplace quality and relational atmosphere within departments. We estimate that the program improves workplace satisfaction by 0.26 standard deviations and perceived meritocratic values by 0.25 standard deviations. We also estimate a large and statistically significant improvement in the perceived collegiality in treated departments (0.21 standard deviations). While positive, the estimated effects on behavioral and prescriptive norms do not reach statistical significance. We estimate null effects on perceived workplace quality and relational dynamics for the leader sample, indicating that improvements in these outcomes are driven by the subordinates.

We show that the program's positive effects likely stem from its success in improving leaders' behavior and leader-subordinate relationships. We find that the treated subordinates report 0.21 standard deviations higher professionalism and 0.21 standard deviations higher empathy in their leaders. Consistent with these results, treated subordinates are also 8 percentage points more likely to consider their leader as their primary professional support provider, representing a 13% increase relative to the control group. Contrary to these results, we find that treated leaders are significantly less likely to consider their leaders as professional support providers. This large (29%) negative effect is accompanied by the finding that treated leaders are 19% more likely than untreated leaders to consider their subordinates as primary support providers. These surprising effects are driven by the leaders whose leaders did not participate in the study, consistent with our claim that the program generated its positive effects by improving leader-subordinate relationships.

Our paper offers two main contributions. First, it represents the first clustered randomized controlled trial targeting relational culture in large corporations. We provide rigorous evidence on the effectiveness of an innovative training program that focuses exclusively on the quality of professional interactions in highly competitive work environments. Our results suggest that targeted programs that focus on prosociality in professional interactions can improve the relational atmosphere in the workplace and that changing the behavior of leaders is key to achieving this end.[4] The second contribution pertains to the toolkit

[4]Bruhn, Karlan and Schoar (2018) evaluate a management consulting intervention using small and medium enterprises in Mexico. Their focus is on firm performance. Azulai et al. (2020) evaluate the ef-

we use to evaluate this program. We designed a rich inventory to measure outcomes that characterize the workplace climate. Combining administrative records, incentivized games, cognitive tests, and rich survey tools, we collect previously unavailable data from a large number of corporate professionals across different firms and sectors and use them as outcomes to evaluate a program. Furthermore, our results can be generalized to other contexts. Competitive workplaces with a toxic relational atmosphere are ubiquitous not only in the corporate world but also in the public sector and even in academia (Shallcross, Sheehan and Ramsay, 2008; Wu, 2018; Dupas et al., 2021). The results of this study imply that innovative behavioral interventions can go a long way to building a more positive relational environment in workplaces and eliminate antisocial interactions and employee burnout.

Our paper contributes to several different strands of literature. In the last decade, there has been an increasing interest in field experiments in firms to understand the effect of different policies and interventions on firm productivity.[5] One branch of this literature looks at managerial capital and leadership styles, as well as manager personality, in predicting firm performance (Bertrand and Schoar, 2003; Bloom and Van Reenen, 2007; Bruhn, Karlan and Schoar, 2010; Bloom et al., 2013; Lazear, Shaw and Stanton, 2015; Sharma and Tarp, 2018; Bandiera et al., 2020). There are a number of field experiments on the effects of management practices on employee productivity (Blader, Gartenberg and Prat, 2020; Gosnell, List and Metcalfe, 2020). Another branch deals with building human capital, using either worker training or the training of managers (Bruhn, Karlan and Schoar, 2018). Few studies investigate the effect of non-traditional employee training such as soft-skills training on firm-level productivity (Campos et al., 2017; Ubfal et al., 2019; Azulai et al., 2020). Our study contributes to this literature by providing results from a clustered randomized trial focusing on the relational environment in large corporations from a large set of different industry sectors.

Our paper also contributes to the literature on the importance of social skills in the labor market (Kosse and Tincani, 2020). Deming (2017) shows that the premium on these skills has been rising in the last few decades and Weidmann and Deming (2020) demonstrates in addition that social skills improve team performance. We complement this new and growing literature by showing how social skills can be fostered at the intensive margin via innovative

fectiveness of a motivational work process improvement program targeting bureaucrats in Ghana's Civil Service. Our paper focuses exclusively on improving the relational dynamics in competitive corporations via a clustered randomized design and using outcomes measured in previously unavailable details.

[5] See Quinn and Woodruff (2019) for a review of the experiments in firms.

training programs and how they affect workplace climate, social networks, and turnover rates in large corporations. We also contribute to an extensive literature that shows the importance of leadership quality and leadership styles in large corporations (Bolton, Brunnermeier and Veldkamp, 2013; Bandiera et al., 2020; Dessein and Santos, 2021; Hoffman and Tadelis, 2021). This literature often emphasizes the relationship between strong leadership and firm performance (Bertrand and Schoar, 2003; Bennedsen et al., 2007; Kaplan, Klebanov and Sorensen, 2012; Lazear, Shaw and Stanton, 2015; Bandiera et al., 2020) or worker productivity (Heinz et al., 2020).[6] An emerging literature highlights the role of leaders in shaping corporate culture measured as beliefs and norms (d'Adda et al., 2017; Gächter and Renner, 2018), employee motivation (Kajackaite and Sliwka, 2020), creativity (Amabile et al., 2004), and well-being (Inceoglu et al., 2018). By showing the importance of leadership and, in particular, leader-subordinate relationships in shaping the relational culture of firms causally, we complement this large and important literature.

The rest of the paper is organized as follows. Section 2 provides information on the context, intervention content and evaluation design. Section 3 describes our primary outcomes and how we collected them. Our data and results are presented and discussed in Section 4. In Section 5, we explore potential mechanisms. We conclude in Section 6.

2 Background

2.1 Context for the Evaluation

The idea of this study was conceived during informal conversations with corporate professionals in Turkey in Spring 2019. These professionals repeatedly highlighted relational issues as primary reasons for early retirement, burnout, deteriorating mental well-being, or continuously being on the lookout for another job. We followed this up and conducted a more formal qualitative study to gain a deeper understanding of these relational issues. Using a professional network, we sent an online survey to a total of 80 professionals of different ranks and years of experience and asked them to state the most challenging problems a corporate professional faces when working in large and competitive corporations. Sixty-eight professionals responded to our short survey. Among these, 38 were in full-time employment in large firms, and 30 had left corporate life to do something else or retired. Exactly 50% of these

[6] Friebel, Heinz and Zubanov (2022) and Hoffman and Tadelis (2021) show that managers are instrumental in reducing personnel turnover rate.

professionals placed "toxic relationships and antisocial behavior" in the top 3 problems they face (faced). About 47% placed "difficult leaders", 34% the lack of meritocratic values, 32% long hours, and 31% low pay in the top 3. We provide the exact wording of these questions and the detailed graphical results in the Online Appendix B; See Figure B.1.

Motivated by these results, we started reaching out to large corporations operating in Turkey. Of the 30 corporations we contacted, 20 of them accepted our offer to provide a workplace improvement program.[7] These 20 corporations are significant players in the energy, chemistry, defense, finance, construction, and textile sectors, and some are well-known multinationals operating in Turkey. Recruitment of these corporations involved multiple meetings with their CEOs, HR officials, compliance departments, and, on some occasions, their foreign headquarters. Upon agreement, each recruited firm signed a data confidentiality agreement and a research collaboration protocol with Kadir Has University[8]. In recruiting these firms, we made sure that the participating firm was a significant player in its sector in terms of market share. Second, we ensured that we had at least two firms in a given sector. Finally, we made sure that participating firms had understood and accepted the condition that, while we promised to offer the training program to all participating firms, we could not say when, within a given one-year window, a given firm would have access to the program. The latter criterion implied a phase-in design and was applied to ensure that, after collecting our baseline data, we could randomize the firms into treatment and control and offer the program to the former immediately while holding the latter until after endline.

The study was offered only to the white-collar employees working in the company headquarters. Participation in the study was voluntary. Out of 4329, about 71% of white-collar employees in company headquarters signed up for the study, 70% from control companies, 72% from treatment companies. The non-participation in the study was generally at the departmental level. Some departments could not participate in the study due to the nature of their tasks, for example, having to be at the desk during stock market sessions for finance firms. Moreover, some small departments were considered low priority for this study by the

[7]Three firms allowed us to collect baseline data but did not want to be part of the program. Therefore, while collecting baseline data from 23 firms, we conducted our randomization, after baseline data collection, with the remaining 20 corporations. We stopped at 20 corporations due to logistical reasons. It is important to note that we, not our partner, recruited these companies. Our partner had a prior relationship with only one company in our sample. This company's blue-collar workers received completely unrelated training (workplace safety) from our partner years before our study.

[8]Each formal document was signed by the relevant company's CEO and the president of Kadir Has University.

firms themselves and excluded at the outset.

2.2 Evaluation Design

We collected rich baseline data by visiting all companies in person in the fall of 2019. For this, we visited each firm, gathered employees, department by department, in meeting rooms, and collected our data. An average baseline data collection session lasted about 3 hours. Each session started with a brief introduction and signing individual consents.[9] We first played incentivized games to elicit social and economic preferences (lab-in-the-field experiments). Then, we conducted cognition tests, followed by a detailed social network elicitation. Finally, participants were directed to a detailed survey. Preventing participants' communication with other departments for the incentivized games was the most important logistical challenge we faced in large firms. To overcome this, we conducted our incentivized experiments in parallel, department by department, using different meeting rooms. Participants used their smartphones to enter our data collection platforms, following our instructions step by step.

After baseline data collection, we randomly assigned 10 corporations to treatment and 10 to control by stratifying on sector. Our initial plan was to implement the intervention in early 2020. Unfortunately, this plan was disrupted by the COVID-19 pandemic. After waiting until Fall 2020, hoping that business would go back to normal, we realized that this expectation was too optimistic and decided to implement the program by designing an online training platform. Our switch to the online platform was welcomed by our implementing partner and all our participating companies. We then implemented the program in late Fall 2020 through Spring 2021.

The training program was open to all white-collar employees in the treated firms' headquarters. However, we particularly encouraged leaders to participate in the training. We define the term "leader" broadly in this study. In our study, anybody responsible for leading a group of professionals is considered a leader. Since most corporations have a hierarchical management structure, most leaders have leaders. We also encouraged subordinates we found central in their networks at baseline to take part in the training. The network centrality was established using professional in-degree ties (nominations received for professional help). We labeled the subordinate with more in-degree ties than a median leader as a "de

[9]Designated HR coordinators informed all white-collar workers prior to our visit, and only the ones who wanted to participate in the study did come to the meeting rooms. We made sure that companies informed their workers that the participation was voluntary, and not joining would not have any consequences for them.

facto leader". All treated companies sent extra messages and reminders to leaders and de facto leaders to encourage them to participate in the training activities. About 40% of the study participants in treated headquarters took part in the training program, with 56% comprising official leaders, and 37% subordinates. Among the subordinates who participated in the training, about 29% of them were de facto leaders.

We collected endline data from participating employees in 20 companies in Summer 2021, using the online tools we developed. Our online tools allowed us to bring together departments using Zoom rooms and enabled us to mimic our on-site data collection system. Figure 1 provides the timeline of the trial. Given the imperfect compliance with the training, we provide intent-to-treat estimates throughout the paper.

2.3 Intervention: Transforming the Relational Atmosphere in Large Corporations

Our implementing partner is a highly specialized consulting firm. The firm was founded in 2007 by several ex-corporate professionals who had first-hand experience of the highly toxic relational atmosphere in large corporations. As part of their movement coined as "Does not have to be this way", they developed unique training methods to improve the workplace environment. They use unconventional tools, including creative drama, role-playing, and imagery techniques. In addition, they employ real actors and scenario writers who blend in with the trainees and conduct theatrical plays on topics relevant to their target concepts. We partnered with them to evaluate their training module called "Transforming the Relational Atmosphere in Firms", aimed at improving workplace relations, eliminating employee burnout, and lowering employee turnover. The partner agreed first to revise their existing module substantially to target only the relational issues. For this, we provided the partner with hands-on feedback to narrow the program's focus exclusively toward prosociality and professional communication. The partner also accepted that we would conduct a randomized evaluation to test the effectiveness of this training program and agreed to provide the training to all 20 firms within a schedule that we would determine.

The training program focuses on the following themes: 1) Respectful and peaceful communication with colleagues, subordinates, and leaders, by exerting deliberate effort to eliminate toxic and condescending language. 2) Understanding the others' points of view and tolerating the differences in opinions. 3) Learning to rely on colleagues and leaders by accepting vulnerability. We targeted employees of all ranks in all these themes, but particular

attention was given to leaders.

The training module comprises two components. The first component is a series of online workshops involving several interactive group activities.[10] In these activities, participants were randomly allocated to groups mixed in terms of departments and rank. In one session, group activities included time travel to the company's future, imagining an aspired workplace environment, sharing their vision, and openly discussing the obstacles in achieving these ends. In another session, participants engaged in several role-playing exercises (assuming the roles of executives, regular employees, and families of employees). In these exercises, employees expressed what they expected from their leaders and colleagues, stating their definitions of a good leader, peaceful and professional language, and good leadership practices. In another session, participants experimented on proactive and reactive behavior in relationships. These involved some group activities that implicitly require reliance on colleagues and leaders[11]. The module includes numerous other activities along these lines, all encouraging professional and humane treatment of one another.

The second component of the module was a monitored 8-week follow-up. For this, all participating departments in each firm were given a task that involved developing a project that would help improve the relational atmosphere. The core theme of these projects was "improving communication and relational culture." In each department, participants formed groups to develop their own projects by either embedding this theme in their existing work-related project or creating a stand-alone project. They first prepared a detailed outline of a project idea that would touch upon the given theme, often adapted to their company's needs. For example, a group of professionals developed prosocial codes of conduct in everyday interactions for their department by first assessing the needs and collecting feedback from their colleagues. Another group designed what they referred to as the "desk-exchange" project. The project required colleagues to switch desks and try to do each others' tasks for a few hours to see what these tasks entailed. This project was an extended version of leader-subordinate hat change exercises implemented during the online workshops. The implementing partner regularly interacted with the participants throughout the process, gave feedback to project proposals, helped participants fine-tune details, and discussed feasibility issues. The team leaders were also heavily involved in this process, often as project team

[10]During these training sessions, the trainers were always online, while the employees were generally physically present in their workplaces.

[11]In one of these activities, each participant let themselves fall backward, hoping that their colleague would hold their back.

members. All groups, in the end, presented their projects to each other and their higher executives (CEOs, CFOs and COOs) in the presence of the implementing partner. See Appendix C for more information on the module's content, example follow-up projects and some snapshots of actual training sessions.

Given the targeted concepts and how activities were structured, we expect this training program to improve social and professional relationships amongst colleagues. As elaborated in our pre-analysis plan, our main conjecture is that the program, given its high emphasis on leaders' behavior and leader-subordinate relationships, will improve relational culture through improving leadership quality. We also expect a reduction in employee turnover. It is important to note that the control firms did not implement training programs for their headquarter professionals during the implementation period. However, they did have business as usual in terms of their informal get-togethers for coffee and lunch in person and organizing regular zoom drinks with their employees. This fact allows us to rule out the possibility that the program might improve workplace climate simply by getting people together regardless of its content. We provide a depiction of the theory of change in Figure A.1 in the Online Appendix A. In the next section, we will explain in detail how we measure our workplace climate indicators using a comprehensive toolkit.

3 Outcomes

We used four measurement tools to evaluate the program. First, we have access to administrative data on turnover and promotions covering both study participants and nonparticipants. Second, we conducted a set of incentivized games to measure pro and anti-social behavior in the workplace. Third, we elicited social networks. Finally, we conducted surveys using standard item-response questions to construct measures of perceived workplace quality and relational atmosphere. In what follows, we will explain each of these tools and how we used them to construct our outcome space.

3.1 Employee Turnover and Promotion

We requested and were granted access to administrative records of job separations and promotions within the implementation period, from November 1, 2020, until June 30, 2021 (8 months). The reason for imposing this end date is that the government of Turkey imposed a nationwide ban on dismissing employees in April 1, 2020. This ban was lifted on July 1, 2021. Therefore, throughout our implementation and endline period, employee turnover

refers to voluntary job separations. In December 2021, we re-contacted all our participating firms and asked for additional data covering the post-ban period. These follow-up data contain all job separations (quits and layoffs) and promotions covering the period between July 1 and November 30, 2021 (5 months). It is important to note that we have access to these administrative data also for employees who did not participate in our study (about 30% of the headquarter employees). This access allows us to estimate possible spillover effects on turnover and promotions. While we do not have a priori conjecture regarding the program's effect on promotions, we expect the program to lower employee turnover, especially voluntary job separations.

3.2 Experimental Outcomes: Prosocial and Anti-social Behavior

We played several incentivized games to measure various individual characteristics. At baseline, we elicited risk aversion, competitiveness, and cooperation between department colleagues. We explain these games in the Online Appendix D. At endline, we gave the participants three new incentivized games to measure pro and antisocial behavior. Specifically, we designed a performance sabotage game, a trust game, and an ultimatum game using online tools. The participants were given instructions for each game via a pre-programmed voice. First, they were informed that they would play 3 games, each offering monetary rewards. Second, they were told that the amount of money each participant earned would depend on their own decisions and the decisions of their department colleagues. Third, they were informed that rewards from the games would not accumulate; they would receive the payment of one randomly chosen game at the end of the session. Rewards were given in the form of a gift card from a major supermarket chain in Turkey, mailed to the participants one week after the session. We exercised the utmost care to ensure that the participants' anonymity was preserved and that companies could not learn about employees' choices, behavior, and outcomes.

3.2.1 Sabotage in Competition

Competitive behavior is considered essential to personal success as it generally inspires hard work and leads to high productivity (Backus, 2020). However, there are forms of intra-group competition propelled by envy that reflects antisocial behavior. In an environment where the assigned task requires teamwork, but promotions depend on individual performance, which is usually hard to quantify, competition may take an aggressive form with teammates blocking or outright sabotaging each other's performance to improve their status. The prevalence of

this antisocial behavior is one of the indicators of the health status of a workplace.

To assess the prevalence of this behavior in an incentive-compatible way, we played a game that involved randomly matching two colleagues within a department. Each participant, remaining anonymous to their opponent, was asked to perform a task with no ability requirement. Specifically, they were asked to type a meaningless jumble of four letters (lower and upper case mixed) and numbers that appeared in the middle of their screen. The participants were given 2 minutes to type as many words as possible. A participant could earn 150TL (worth about 20 US dollars at the time) if and only if their performance exceeded that of their anonymous opponent. After completing the task, without knowing the result of the competition, participants were given the option to sabotage their opponent's performance by incurring a monetary cost. For this, we endowed all participants with an extra 50TL and asked them to decide which amount of this endowment they would like to use to destroy their opponent's performance. The cost of destroying one correct answer was set to 10TL, so that the maximum number of answers one could destroy was capped at 5. The outcome of interest in this game is the cost incurred (sabotage endowment used) to sabotage the opponent. We expect the treatment to lower this anti-social behavior, i.e., to decrease the amount of sabotage endowment used.[12]

3.2.2 Trust and Reciprocity

Interpersonal trust and reciprocity are essential social skills for making groups cohesive and collegial. To assess the degree of interpersonal trust and reciprocity, we played a version of the standard trust game (Berg, 1995). For this, we endowed all participants with 100TL and informed them that they were randomly (and anonymously) paired with a colleague within their department. They were told that there were two roles one could assume in this game; a sender and a receiver. They were to be randomly assigned to one of these roles, but before that, they were asked to make decisions assuming each role sequentially. In the role of a sender, participants needed to decide how much of the 100TL they wanted to send to their anonymous colleague (receiver), including the option of sending nothing. The participants were informed that the amount they sent would be tripled by the experimenters before being sent to the receiver. In the role of a receiver, the participant needed to decide what fraction of the money they had received they wanted to send back to their anonymous colleague.

[12]Similar settings have been used in lab and lab-in-the-field experiments, see Harbring et al. (2007), Abbink and Sadrieh (2009), Harbring and Irlenbusch (2011), Charness, Masclet and Villeval (2014), Jauernig, Uhl and Luetge (2016), Bauer et al. (2021).

Because the receiver's decision was based on the sender's decision, we elicited the decisions of the receiver with the strategy method by letting participants react to hypothetical discrete options. Specifically, we began with the case where the sender sent 10TL, tripled to 30TL. The receiver then decided how much of this 30TL to send back to the sender. Then, we elicited the case where the sender sent 20TL, tripled to 60TL in a similar fashion, and this hypothetical elicitation continued until the case of the full amount (100TL, tripled to 300TL).

The amount of money sent as a sender is our measure of trust, and the amount sent back as a receiver is our measure of reciprocity. For the latter, we use the average fraction across all options sent back to the sender. At the beginning of the game, the participants were informed that, after all the decisions had been made, our system would assign the roles randomly and determine their earnings. Overall, we expected the treatment to increase trust and reciprocity among department colleagues.

3.2.3 Sense of Fairness and Generosity

Our final game is a version of the ultimatum game. The game also involves pairing two colleagues within a department anonymously. There are two roles in this game, a proposer and a responder, and participants play again both roles. As proposers, they offer a two-way split of 200TL, and as responders, they decide on a minimum acceptable offer. If the latter is below or equal to a matched proposer's offer, the money is split according to the proposer's offer; otherwise, the offer is rejected, and neither receives any money. Our outcomes of interest are the proposed offer and the minimum acceptable offer. We expect a fairer split and perhaps some generosity (in the form of offering more than 50% of the proposer's endowment) in the treatment group.[13] If treatment lowers the feeling of spite, we expect that treated individuals tend to accept lower offers implied as a decline in minimum acceptable offers.

3.3 Professional and Personal Support Networks

Another way to assess the health status of the workplace climate is to measure the prevalence of support networks. To elicit these networks, we asked each participant to list up to three of

[13]Contrary to the dictator game (in the baseline), which measures generosity (by the amount of money sent to an anonymous recipient), the ultimatum game has a strategic component (which is absent in the dictator game), for which reason a proposer's offer cannot be simply interpreted as a measure for generosity. Rather, it can be interpreted as a measure of what subjects interpret as a fair offer in such a strategic situation where the responder (the second mover) has the power to destroy both parties' endowments; see Güth and Kocher (2014).

their colleagues in the firm, from whom they receive regular professional help in work-related matters. Then, we asked them to list up to three colleagues from whom they receive regular help on personal issues. The participants were informed that the ranking in this elicitation mattered so that the colleague they thought was the most helpful should be listed first. We prepared our template by first obtaining the list of all employees in the firm's headquarter and offered the names in a drop-down menu to ease the nomination process. The participants were also given an option to select "I receive no help" in the menu. They could also nominate fewer than 3 colleagues in each of the two categories, but not more than 3.

From these nominations, we construct three department-level outcomes that we expect the treatment to influence: (i) the proportion of isolated individuals in the department, (ii) department network density, and (iii) cohort segregation. We construct each of these outcomes for professional and personal support categories separately. The proportion of isolated individuals refers to those who had chosen "I receive no help" in the menu, i.e., those who report having no support from their colleagues. The department network density is an index that gives the ratio of actual connections to all potential connections that could be made in a department. Therefore, its range is between zero and 1, with higher numbers indicating a denser network. As for cohort segregation, we are interested in segregation between millennial and younger cohorts (below 40) and older cohorts (40 and older), based on the year of birth. The choice of this particular cutoff is based on our qualitative interviews with out-of-sample professionals, who suggest that communication and social disconnect between these two groups are prevalent, contributing to the toxic relational climate. We provide details regarding the construction of our cohort segregation index following Schelling (1969) in the Online Appendix E. We expect the treatment to lower the proportion of isolated individuals and cohort segregation and to increase department network density.[14]

3.4 Workplace Climate: Perceived Workplace Quality and Relational Atmosphere

Using a detailed item-response questionnaire, we constructed two indices that characterize the perceived workplace quality and three indices for relational atmosphere. The first of the former is the index "workplace satisfaction", constructed using questions such as "I am very glad that I chose to work in this company", with five response options. Our second

[14]In our pre-analysis plan (PAP), we specified department-level network closeness as another outcome. However, this measure is ill-defined in the presence of isolated nodes; therefore, we did not use it (Rochat, 2009; Brandes, Borgatti and Freeman, 2016).

measure of workplace climate relates to the perceptions of the firm's "meritocratic values" (or lack thereof). We constructed the related index using questions such as "I believe my chances of advancing in my profession and career are very high in this firm". We constructed three indices to capture the relational atmosphere within departments. The first of these is "collegial department", constructed using questions such as "My colleagues attack each other disrespectfully during department meetings." Second, we construct behavioral norms using questions such as "How often do you observe your department colleagues: Helping someone" and prescriptive norms using questions such as "What percentage of your department colleagues think: Gossiping is bad." The latter comes with response items of "almost no one, around 25%, around 50%, around 75%, almost everyone".

Because the program has a heavy emphasis on leader behavior and, in particular, leader-subordinate relationships, we conjecture that any positive impact may come mainly through improving leader behavior and leader-subordinate relationships. Therefore, an important component of our inventory involves eliciting in detail the leadership quality from the perspective of subordinates. In addition to utilizing our network measures, we constructed two measures of leadership quality. The first one is "leader's professionalism", constructed using item-response questions such as "My team leader claims achievements, but blames mistakes on others" and "I receive regular and motivating feedback from my team leader." The second one relates to the leader's ability to take actions in an empathetic way, "leader's empathy." Again, we constructed this measure using item-response questions such as "My team leader listens to disagreements carefully and considers all angles" and "my team leader makes sudden emotional decisions."

We construct all indices mentioned above by extracting the common factor for each, normalizing the factor to have a mean zero and standard deviation of one. We provide our full survey inventory in the Online Appendix F.

3.5 Psychological Well-being and COVID-19-related Stress

As we mentioned before, the intended timing of program implementation was disrupted by the COVID-19 pandemic. The COVID-19 pandemic has had a tremendous impact on working people. It is plausible that these effects were felt differently across firms and possibly across employees within firms. During the implementation period, the companies were operating in hybrid mode, where they diluted the number of employees in workspaces based on a rotating schedule. Overall, the experiences of pandemic-related changes are likely to

diminish working people's morale and generate feelings of isolation.

Because the program was highly interactive, including a monitored follow-up that enforced teamwork, we conjectured that it would help employees feel less disconnected from their colleagues. To test this conjecture, we added several COVID-19-related social isolation questions to our survey inventory at endline by making an explicit reference to the pandemic. In particular, we asked respondents whether they (i) rather work at home than work in the office, (ii) feel lonely lately, (iii) feel disconnected from their colleagues, (iv) feel disconnected from their leaders, and (v) have increased the use of alcohol and cigarettes. Thus, by offering unusual (and fun) activities in these difficult times, we conjectured that the program would help employees cope with social isolation imposed by the pandemic response measures.

4 Results

4.1 Internal Validity

We collected our baseline data in Fall 2019 by visiting the headquarters of all firms in person. We collected data on individual characteristics in these visits, including demographics, education, and tenure. In addition, we implemented two cognitive tests: (i) Raven's progressive matrices to measure fluid IQ (Raven, Raven and Court, 1962) and (ii) Reading the Mind in the Eyes Test to measure emotional intelligence (Baron-Cohen et al., 2001). We also implemented three incentivized games to measure baseline risk attitude, competitiveness, and cooperation. Finally, we collected data on networks and workplace climate indicators; see the details of incentivized games and our survey inventory in the Online Appendices D and F, respectively.

Within the course of a single year, many changes took place in the firms, and when we decided to implement the program in Fall 2020, we found that a large number of additional employees (some newly joined the firms) expressed their willingness to participate in the study, both in treatment and control firms. We conducted a swift baseline for these new participants, a shorter version of our initial baseline, before the implementation. These new employees comprise 32% of our evaluation sample, and their distribution across treatment status is balanced (p-value=0.59). Our attrition rate, calculated based on those who were present at baseline, but not at endline, is about 21%, and balanced across treatment status (p-value=0.53). Our final sample consists of 4329 employees for whom we have administrative records of turnover and promotion. Out of those, 3083 participated in our study. For those,

we also have survey responses, test scores and decisions in incentivized games. The number of departments included in the study is 135 (163), with the average size of 22 (27) employees at baseline (endline). Males comprise approximately 72 percent of all employees in our sample and the annual turnover rate at baseline stood at 14.5%.

Table 1 presents the balance at baseline. All test scores and workplace climate indices are normalized to have mean zero and variance of 1 for the control group. Our rich baseline data allow us to test many variables to check our randomization balance. As can be seen in the table, we observe imbalance only for one variable, meritocratic values at the 5% level. We also provide the balance checks of our shorter baseline we conducted in Fall 2020 in Table A.1 in the Online Appendix A. Finally, because we conducted our empirical analyses separately for subordinates and leaders as well for the full sample, we provide balance at baseline within these subgroups in the Online Appendix A.

4.2 Empirical Specification

To test the null hypothesis that the program had no impact on the outcome y, we estimate the average treatment effect by conditioning on baseline covariates that are predictive of the outcome of interest:

$$y_{idf} = \alpha_0 + \alpha_1 T_f + X'_{idf}\gamma + \delta_s + \varepsilon_{idf}$$

where y_{idf} is the outcome of employee i, in department d, firm f. T_f is a dummy variable which equals 1 if firm f is in the treatment group and zero otherwise, and X'_{idf} is a vector of observables for worker i in department d and firm f that are potentially predictive of the outcome y. These include age, gender, marital status, number of children, tenure, and baseline cognitive and sociocognitive skills (Raven's score and Eyes test score). We also control for department and firm size as well as the share of males in the department. δ_s indicates strata (sector) fixed effects. We also provide all our main results without covariates in the Online Appendix A.

Recall that 40% of all participating professionals took part in the training program, 56% of the leaders, and 37% of subordinates, among which 29% are de facto leaders. Therefore, the estimated $\hat{\alpha}_1$ should be considered as the intent-to-treat effect (ITT) depicted in visual clarity in Figure 2. Because the sample contains a small number of clusters (20 corporations), in addition to clustered-robust standard errors, we also present wild bootstrap p-values adjusted for the small sample. Finally, because we test several hypotheses using multiple outcomes, we also provide our inference results (p-values) adjusted for the multiple hypotheses testing.

Most of our results survive these adjustments; see Table A.8 in the Online Appendix A.

4.3 Treatment Effect on Turnover and Promotion

We begin by presenting our results on our administrative data. Table 2 presents the treatment effect on turnover and promotion. Panel I presents the effects on the full sample, panel II on the subordinates, and panel III on the leaders. Finally, Panel IV presents the treatment effects on the sample that did not participate in the study. Columns 1 and 2 refer to the 8-month program implementation period (November 2020 and July 1, 2021). Recall that this period spans the nationwide firing ban, which was imposed on April 1, 2020, and lifted on July 1, 2021. Columns 3 and 4 refer to the post-firing ban period, covering 5 months. The proportion of employees who quit their jobs within the firing-ban (implementation) period is quite low in the control group (about 5%), considering the 2019 baseline turnover rate of 14% presented in Table 1.[15] The turnover was 2 percentage points lower in treated companies between November 2020 and June 30, 2021, and this difference is statistically significant at the 5% level. The estimated treatment effect is larger (5 percentage points) and more precisely estimated for the leader sample.

Looking at the control mean of 7% separations in the post-firing ban data, notice that it already exceeds the 8-month turnover of the implementation period (Column 3).[16] As in the implementation period, we estimate a significant treatment effect on turnover for the post-firing ban period. We estimate 3 percentage points (43%) lower job separations for the treated firms in this period, and this effect is significant at the 1% level. Panel II of Column 3 shows that the effect on separations is driven entirely by the subordinates. The estimated effects for the post-firing ban period strongly suggest that the effects of the intervention persist beyond the implementation period.[17]

Because we have administrative data on all headquarter employees regardless of their

[15]The 2019 (baseline) turnover rate stood at 14.5% on average. This refers to the annual turnover rate and as such not directly comparable with the 8-month rate of 5%. However, one can still infer that the turnover was lower than usual during the firing-ban period.

[16]Note that the analyses involving post-ban administrative data exclude the finance sector, which contains three firms in total, two in the treatment and one in the control group. We exclude this sector from the post-ban analysis because the control firm in this sector had completed the treatment in the Summer of 2021, leaving all three firms in this sector treated.

[17]Most of the separations in the post-firing ban period are voluntary quits. Of the 7% separations recorded in this period, 1.5 percentage points constitute layoffs. We find no treatment effect on layoffs, implying that the overall effect on separations is driven mainly by voluntary quits.

participation in the study, we can also investigate whether the treatment effects on turnover spilled over to nonparticipants. As can be seen in Panel IV of Table 2, we find no evidence of spillover effects of the treatment on nonparticipants, neither during the implementation nor in the post-firing ban period. One reason for this could be that most non-participation was at the departmental level. As mentioned before, some departments could not participate due to the nature of their tasks, and some small departments were considered low priority and excluded by the firms. Given that most training activities targeted departmental relationships, the likelihood of spillovers from participants to nonparticipants was low by design.The lack of spillover effects may also be exacerbated by the context in which we evaluate this program. All activities took place during the Covid-19 pandemic. It is possible that hybrid working arrangements led to less frequent inter-departmental interactions within this period, preventing any possible spillover effects.

We do not find any treatment effect on employees' promotion probabilities for subordinates or leaders in the implementation period. However, the treatment effect on promotions is negative for both subordinates and leaders but significantly larger and precisely estimated for the leader sample in the post-ban period. We estimate 0.13 percentage points lower promotions for leaders in treated corporations. Our intuition for this negative treatment effect is the following: Observe in column 1 that the treatment significantly lowered quits in the short term for both subordinates and leaders, much more so for the leaders. In the following few months, we should expect some people to replace separated people via internal promotions, moving subordinates to leadership, and leaders to upper leadership positions. Since the need for replacement was higher for the control firms due to the higher number of separations, it may be natural to see more promotions in the control firms than in treatment firms. Our spillover results corroborate this intuition: Observe that we had found no short-term effect on turnover in the nonparticipant sample. Consistent with this, we find no effect on promotions in this sample for the post-ban period. As shown in Panel IV, we estimate precise null effects on turnover and promotions for the nonparticipant sample, both in the implementation and post-firing ban period.

4.4 Treatment Effect on Pro and Antisocial Behavior

Table 3 presents the estimated treatment effects on experimentally elicited pro and antisocial behavior. About 23TL of 50TL sabotage endowment was used on average to destroy an opponent's performance in the control group. On average, employees in the treatment firms spent 2.76TL less for sabotage activity, and this 12% effect is statistically significant at the

1% level. The effects for subordinates and leaders are similar for this outcome with 12% for subordinates and 15% for leaders. We do not detect a statistically different effect in this outcome across the two groups (p-value=0.72).

We find that, of the 100TL endowment in the trust game, the control employees sent about 52TL to their anonymous department colleague. We do not estimate a statistically significant treatment effect for this outcome, neither for the full sample nor for the subgroups. However, we find a statistically significant effect on reciprocity. About 37% of the money received was sent back to the sender in the control group. This value is 4 percentage points (about 11%) higher in the treatment group for the full sample, and this difference is statistically significant at the 1% level. The effect on reciprocity is strong for the subordinate group but much smaller and imprecisely estimated for the leaders, although we cannot reject the equality of coefficient estimates across the two groups (p-value=0.41).

Finally, we find that a little more than half of the endowment in the ultimatum game was offered in the control group. Even though we estimate a positive treatment effect on the size of the offer, this effect is statistically insignificant for the full and the subordinate sample. However, it is larger and statistically significant for the leader sample, indicating more generosity on the part of leaders, but again, we cannot reject the equality across the two groups (p-value=0.19). In summary, these results suggest that the treatment significantly lowered toxic competition, measured by the sabotage endowment used in the sabotage game, and improved prosociality measured as reciprocity in the trust game.

4.5 Treatment Effect on Department Network Structure

As mentioned in Section 3, we constructed several department-level indicators that characterize the relational atmosphere of departments using social networks. These are the proportion of isolated individuals (those who participated in the study but did not nominate a colleague as a support provider), department network density, and cohort segregation indices. We constructed these department-level measures for the full sample and the subordinate sample, as such measures for only leaders do not make much sense at the departmental level since most departments have a small number of leaders. Table 4 presents the treatment effects on our three department-level network measures for professional support and personal support categories. Note that, because these outcomes are at the department level, our number of observations reflects the number of departments in this analysis. In some departments, segregation measures are not defined because of the insufficient number of members in a

group, reflected in the large decline in the number of departments used in the respective analyses. Similarly, network density measures cannot be constructed for departments with an insufficient number of participants.

Looking at Panel I, first, we note that, on average, 13% (24%) of employees in the control firms report that they do not receive professional (personal) support from anyone in their firm. We estimate a 5 (7) percentage points decline in professional and personal isolation in treated departments, but only the latter is statistically significant. Looking only at the subordinates, we see similar effects with similar precision. Note that the estimated effect sizes are large. For example, we estimate a 29% reduction in the proportion of individuals who lack support for personal matters in the full sample. The effect size for the subordinates is even larger (39%).[18]

Consistent with the isolation results, we estimate a significant increase in departmental network density for both professional and personal networks. The estimated effects are substantial in size, corresponding to a 50% increase in the network density indices. Finally, we also estimate a substantial decline in our cohort segregation indices. In particular, we find evidence of a significant decline in cohort segregation in the personal support domain for the full sample. These results altogether suggest that the treatment helped employees establish more network ties with their colleagues, lowered the number of people lacking support and created denser and less age-segregated social networks.

4.6 Treatment Effect on Workplace Climate

Table 5 presents the estimated program effects on our workplace climate measures. Again, we present the effects on the full sample and the subordinates and leaders separately. Recall that we normalized these measures to have a mean zero and a standard deviation of 1 for the control sample, so that estimates can be interpreted as standard deviation effects. We observe that the program was highly effective in improving perceived workplace quality and relational atmosphere within departments. We estimate large and significant effects on workplace satisfaction and perceived meritocratic values. Treated employees report 0.26 standard deviations higher workplace satisfaction and 0.25 standard deviations higher mer-

[18]We also estimate the treatment effects on isolation at the individual level. The results are similar. While we find sizeable but imprecisely estimated treatment effects in the professional support domain, we find significant treatment effects in the personal support domain. Specifically, we find 6.5 percentage points decline in isolation for personal support, which is significant at the 10% level. The effect size is 7.3 percentage points for the subordinates (significant at the 5% level) and statistically zero for the leaders.

itocratic values. In terms of the relational atmosphere, treated professionals report 0.21 standard deviations higher collegial behavior in their department, 0.10 and 0.15 standard deviations better behavioral and prescriptive norms, with the latter two not reaching statistical significance. The results on the subordinates are even stronger. Here, we estimate 0.31 standard deviations higher workplace satisfaction and 0.29 standard deviation higher meritocratic values in the treatment group. We also estimate 0.24 standard deviations higher collegial behavior, and again, despite being positive, the effects on behavioral and prescriptive norms are statistically weak based on wild bootstrapped p-values. Interestingly, we estimate null effects for the leaders and reject decisively the equality of estimates between subordinates and leaders for workplace satisfaction, meritocratic values, collegial department and prescriptive norms measures.

These results are consistent with the effects we estimate for pandemic-related well-being indicators. Table 6 presents the estimated treatment effects on our five COVID-19 related outcomes. Employees in treated firms are 6 percentage points less likely to prefer to work from home, and this difference is statistically significant at the 1% level. Further consistent with this result, the employees in treated firms are 4 percentage points less likely to report losing connection with their leaders during the pandemic. The point estimate is similar for subordinates and leaders, although it is statistically significant for the former, but not for the latter.

4.7 Heterogeneity in Treatment Effects

Besides estimating treatment effects separately for subordinates and leaders, we explored several other subgroups to assess treatment effect heterogeneity. First, we checked whether the effects exhibited any differential pattern based on leader gender. Tables 7, 8, 9 and 10 present our full sample results for employees with male and female leaders. While we estimate no significant heterogeneity regarding turnover, pro and antisocial behavior and COVID-19 related well-being, we estimate significant heterogeneity with respect to promotions and workplace climate indicators. As can be seen in Table 7, while we find no effect on promotions in the overall sample, we estimate significantly positive impact of the treatment on the probability of promotion under female leaders in the implementation period. We also find that the negative treatment effect we estimate in the post-firing ban period mainly comes from the employees who work under female leaders. Table 9 indicates significant treatment effect heterogeneity with respect to workplace climate indicators. Note first that these indicators are lower on average for the employees who work under female leaders in the

control group. However, the estimated treatment effects are much larger for these employees, suggesting significant improvements. We also explored whether the effects are different for male and female employees, and we did not find any noteworthy systematic differences; see Appendix Tables A.9, A.10, A.11, and A.12.

5 Potential Mechanisms

All in all, we find that the program was remarkably successful in improving the workplace climate. It lowered employee turnover, reduced antisocial tendencies, increased prosociality, and created denser and less segregated support networks. What are the possible mechanisms behind these favorable results? The training program was intensive compared to standard corporate training programs. Moreover, while it was open to all white-collar workers, leaders of all ranks were particularly encouraged to participate in training sessions and the follow-up project development activities. The idea, motivated by our earlier qualitative interviews, was that improving leaders' attitudes toward subordinates might reset the tone of communications, encourage more prosociality in everyday interactions, and lead to a more collegial atmosphere in the workplace. We hypothesize, therefore, that the program's effects work mainly through improved leader behavior and leader-subordinate relationships.

Before testing this hypothesis, we provide evidence that the subordinates' perceptions of workplace quality and the relational atmosphere are highly correlated with their perceived leadership quality. Appendix Figures A.2 and A.3 show the association of leaders' professionalism and leaders' empathy (both from the perspective of subordinates) and subordinates' perceived workplace quality and relational atmosphere in their departments for the control group. These associations are estimated non-parametrically, controlling linearly for the covariates we use in our treatment effect estimations. In both figures, the relationships are unambiguously positive. The higher the leader's professionalism and empathy, the better the perceived workplace quality and relational atmosphere in the department. While only representing correlations, these positive associations set the stage for our mechanism explorations. If the program's positive effects stem from improved leader-subordinate relationships, we expect to estimate significant treatment effects on reported leadership quality.

To test this, we estimate the effect of the program on several leadership quality indicators. The first two are leader professionalism and leader empathy, which we constructed using survey items. In addition, we have network data with which we can construct binary indicators of whether a participant nominated her leader as a professional and personal sup-

port provider. We consider nominating one's leader as a professional and personal support provider to indicate high-quality leadership, and a good leader-subordinate relationship.

Figure 3 plots the estimated treatment effects on leader professionalism, leader empathy, whether the employee nominated their leader as a professional and personal help provider and own empathy for the full sample, as well as subordinates and leaders separately. We observe striking treatment effects on reported leadership quality, especially for the subordinate sample. It appears that the program increased perceived leader professionalism and empathy by 0.20 standard deviations each for the full sample. The point estimates are similar for the subordinate sample but imprecisely estimated for the leader sample. We estimate that treated subordinates are about 8 percentage points more likely to nominate their leaders as professional support providers. We find no statistically significant effect on the probability of nominating leaders as personal support providers in the subordinate sample.

Interestingly, we estimate strong negative treatment effects on nominations for the leader sample. The treated leaders are 19 (13) percentage points less likely to nominate their leaders as professional (personal) support providers. We explore possible explanations for this unexpected result. The first thing that comes to mind is that by being part of an interactive program together with subordinates, leaders may have turned to their subordinates for professional and personal help. This substitution may be exacerbated by the fact that the program participation amongst higher management was low. Supporting this explanation, we find that the treatment increased the probability of a leader nominating a subordinate as a professional and personal help provider by 9 and 6 percentage points, respectively. We also find suggestive evidence that the negative treatment effects we report in Figure 3 are much stronger for leaders whose leaders did not participate in the study. We find that the probability of a treated leader nominating her own leader as a professional support provider is 33 percentage points lower than that of an untreated leader if the leader's leader did not participate in the study. We estimate no difference between treatment and control in this respect for leaders whose leaders participated in the study. This finding also suggests that employees might have taken their leaders' participation in the study as a signal of their commitment to improve the workplace climate, consistent with our claim that the program generated its positive effects by improving leader-subordinate relationships.[19]

While we conjecture that the primary channel is improved leader attitude and leader-

[19]The participation rate of the leaders of leaders is about 67% and balanced across treatment status (p-value=0.54).

subordinate relationships, there may be other mechanisms at play. For example, the program may also have increased the empathy of employees towards each other and towards their leaders. This is likely since one of the core messages of the program was to teach employees to exchange roles to understand where the other person was coming from in any social situation. However, as can be seen in Figure 3, we estimate null effects on employee empathy. In summary, while we cannot rule out all possible channels through which the program led to these positive impacts, the evidence on the improved leader-subordinate relationships is compelling.

6 Conclusion

While ubiquitous, relational toxicity in the workplace is a vastly overlooked issue in large and highly competitive workplaces. Yet, it imposes high costs on firms through employee dissatisfaction, inner resignation, or outright quits. Thus, innovative training programs that aim to improve the relational environment in workplaces, with a particular focus on leader-subordinate relationships, may be a cost-effective way to address this problem. This paper tests the effectiveness of one such program.

The program, implemented as a clustered randomized design, is evaluated with regard to a wide range of outcomes measured using incentivized games, social networks, survey instruments, and administrative records. We find that the program improves perceived workplace quality and relational climate, reduces toxic competition amongst colleagues, lessens social isolation, and lowers employee turnover. We show that the program's success in improving workplace climate stems mainly from improved leader-subordinate relationships. Our findings provide evidence that innovative interventions focusing on improving the relational atmosphere in these work environments may go a long way in increasing employee engagement, satisfaction with leaders, lowering turnover, and ultimately transforming the relational culture.

We note two external validity concerns. First, our study covers a particular country. While there is overwhelming evidence that relational issues are ubiquitous, the Turkish corporate sector does not represent the corporate sector around the world. However, besides enabling us to execute a clustered randomized controlled trial on large corporations and to collect detailed data from a large number of professionals, Turkey offers an ideal setting to study relational atmosphere in workplace settings. It is a large OECD country hosting many multinational and holding companies in all sectors. Given that we reached out to prominent

corporations across different sectors that employ highly-educated professionals, our study is likely to be relevant for corporations in other OECD countries, as well as many similar middle-income countries.

Second, our study was conducted in a context created by a global health shock, the COVID-19 pandemic. Therefore, it is not clear how effective the program we evaluate would be in normal circumstances (even though COVID-19 might prevent a full return to global normality for some more years to come). Nevertheless, it is entirely plausible that a program that shows such promise in such difficult times might be at least as effective in normal times. Moreover, recent evidence has shown that exposure to COVID-19 has a negative effect on prosociality in high-school students close to entering the job market (Terrier, Chen and Sutter, 2021). Given the importance of prosociality for labor market success (Kosse and Tincani, 2020), a reduction in prosociality of future labor market cohorts might pose threats to a good workplace climate. Against this background, it seems necessary and timely to implement interventions such as ours that show promising effects on the workplace climate in large corporations.

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7 Tables

Table 1: Balance at Baseline

	N	Control Mean	Treatment Mean	Difference (T-C)	P-value of Difference
Panel I: Individual Characteristics					
Male	1988	0.64	0.57	-0.07	0.13
Age	1973	36.09	35.80	-0.01	0.99
Married	1799	0.67	0.62	-0.05	0.16
Tenure (yearly)	1785	7.37	7.64	0.26	0.76
Leader Age	1060	42.40	41.99	-0.31	0.80
Under Male Leader	1397	0.74	0.71	-0.04	0.33
Holding Leadership Position	1989	0.18	0.18	0.02	0.46
Raven Score (IQ)	1852	0.00	0.08	0.03	0.74
Eyes Score (Emotional Intelligence)	1858	-0.04	-0.25	-0.12	0.24
Risk Attitude	1805	-0.00	0.01	-0.05	0.28
Competitiveness	1797	0.50	0.50	-0.01	0.63
Cooperation	1805	-0.00	0.05	0.03	0.57
Workplace Satisfaction	1331	-0.00	0.08	0.13	0.14
Collegial Department	1402	-0.00	-0.09	-0.02	0.69
Meritocratic Values	1287	-0.00	0.13	0.21	0.01**
Behavioral Norms	1333	0.00	0.02	0.06	0.46
Prescriptive Norms	1194	-0.00	0.01	0.04	0.63
Leader Quality	1234	-0.00	0.00	0.04	0.53
Nominated Leader as Professional Help	1492	0.56	0.62	0.06	0.15
Nominated Leader as Personal Help	1492	0.45	0.47	0.04	0.40
Panel II: Department Characteristics					
Log Department Size	135	2.82	2.60	-0.22	0.42
Male Share	135	0.70	0.63	-0.06	0.42
Proportion of Isolated Nodes (Professional Support)	135	0.12	0.16	0.05	0.27
Proportion of Isolated Nodes (Personal Support)	135	0.17	0.21	0.06	0.11
Density of the Department (Professional Support)	131	0.09	0.09	0.01	0.77
Density of the Department (Personal Support)	131	0.06	0.07	0.01	0.84
Cohort Segregation Coefficient (Professional Support)	106	0.00	-0.01	-0.01	0.61
Cohort Segregation Coefficient (Personal Support)	106	0.04	-0.00	-0.03	0.14
Turnover	134	14.07	14.85	-1.06	0.67
Panel III: Firm Characteristics					
Log of Firm Size (Headquarters)	20	5.48	5.23	-0.17	0.50

Reported statistics use the Fall 2019 baseline sample. Panel I presents the balance of individual-level variables. Panel II presents the balance of department level characteristics and panel III firm level characteristics. Cognitive tests, risk attitude, cooperation and survey measures are standardized. P-values are obtained by controlling for randomization strata (sector). In Panels I and II, standard errors are clustered at the firm level (unit of randomization). Panel III uses robust standard errors.

Table 2: Treatment Effects on Turnover and Promotion

Panel I: Full sample	Implementation Period (November 2020-June 2021)		Post-Firing Ban (July 2021-November 2021)	
	Turnover	Promotion	Turnover	Promotion
Treatment	-0.02**	0.01	-0.03***	-0.06
	(0.01)	(0.02)	(0.01)	(0.03)
Wild Bootstrap P-value	0.09	0.77	0.03	0.21
Control Mean	0.05	0.07	0.07	0.09
N	3076	3076	2537	2537
Panel II: Subordinates only				
Treatment	-0.02	0.00	-0.03***	-0.04
	(0.01)	(0.03)	(0.01)	(0.03)
Wild Bootstrap P-value	0.20	0.94	0.02	0.30
Control Mean	0.05	0.07	0.07	0.08
N	2547	2547	2102	2102
Panel III: Leaders only				
Treatment	-0.05**	0.04	-0.01	-0.13**
	(0.02)	(0.03)	(0.02)	(0.05)
Wild Bootstrap P-value	0.03	0.33	0.74	0.10
Subordinate = Leader	0.12	0.34	0.28	0.00
Control Mean	0.06	0.06	0.06	0.16
N	529	529	435	435
Panel IV: Non-participant sample				
Treatment	-0.01	0.02	-0.00	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)
Wild Bootstrap P-value	0.89	0.31	0.72	0.65
Control Mean	0.06	0.03	0.04	0.04
N	1240	1240	1059	1059

Reported estimates are obtained from ordinary least squares (OLS) regressions. Regressions covering the post-firing ban period (columns 3 and 4) exclude the finance sector (3 firms). Panel I provides estimated treatment effects using the full sample, Panel II, subordinate sample, Panel III leader sample, and Panel IV non-participant sample. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector fixed effects. Non-participant sample regressions control for gender, department size, share of males in the department firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table 3: Treatment Effects on Experimentally Elicited Pro and Anti-Social Behavior

Panel I: Full sample	Sabotage	Trust	Reciprocity	Ultimatum Offer	Min. Accepted
Treatment	-2.76***	0.69	0.04***	3.45	-0.85
	(0.37)	(1.49)	(0.01)	(2.12)	(1.48)
Wild Bootstrap P-value	0.00	0.75	0.01	0.21	0.60
Control Mean	23.13	52.15	0.37	101.15	97.97
N	2233	2233	2233	2233	2233
Panel II: Subordinates only					
Treatment	-2.78***	0.02	0.04***	2.69	-1.55
	(0.47)	(1.23)	(0.01)	(2.27)	(1.78)
Wild Bootstrap P-value	0.00	0.99	0.01	0.32	0.48
Control Mean	22.68	51.44	0.36	101.09	98.38
N	1839	1839	1839	1839	1839
Panel III: Leaders only					
Treatment	-3.69	1.73	0.01	6.71**	3.78
	(2.30)	(3.23)	(0.02)	(2.36)	(6.85)
Wild Bootstrap P-value	0.32	0.69	0.65	0.03	0.67
Subordinate = Leader	0.72	0.54	0.41	0.19	0.48
Control Mean	25.34	55.63	0.41	101.44	95.95
N	394	394	394	394	394

Reported estimates are obtained from ordinary least squares (OLS) regressions. The dependent variables are: Sabotage: the amount of sabotage endowment used, Trust: the amount of money sent to the anonymous receiver, Reciprocity: average fraction sent back to the sender, Ultimatum offered: the amount offered by the proposer, and Min. Acceptable: the minimum acceptable offer reported. Panel I provides estimated treatment effects using the full sample, Panel II, subordinate sample, and Panel III leader sample. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table 4: Treatment Effects on Support Networks

Panel I: Full sample	Proportion Isolated		Department Density		Cohort Segregation	
	Professional S.	Personal S.	Professional S.	Personal S.	Professional S.	Personal S.
Treatment	-0.05	-0.07**	0.03*	0.03**	-0.03*	-0.07***
	(0.03)	(0.03)	(0.02)	(0.01)	(0.02)	(0.01)
Wild Bootstrap P-value	0.42	0.14	0.11	0.11	0.10	0.00
Control Mean	0.13	0.24	0.06	0.05	0.03	0.05
N	163	163	162	161	138	137
Panel II: Subordinates only						
Treatment	-0.06*	-0.07**	0.02*	0.03**	-0.03	-0.03
	(0.03)	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)
Wild Bootstrap P-value	0.27	0.06	0.13	0.09	0.26	0.31
Control Mean	0.14	0.18	0.05	0.04	0.04	0.10
N	161	161	160	159	120	119

Reported estimates are obtained from ordinary least squares (OLS) regressions. All dependent variables are constructed at the department level. Panel I provides estimated treatment effects using the full sample, and Panel II, subordinate sample. Regressions control for mean Ravens score and Eye Test score, average tenure, average age, proportion married, average number of children in the department, average tenure, the share of males in the department and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table 5: Treatment Effects on Workplace Climate

Panel I: Full sample	Workplace Quality		Relational Atmosphere		
	Workplace S.	Metirocratic Values	Collegial Dept.	Behavioral Norms	Prescriptive Norms
Treatment	0.26**	0.25**	0.21**	0.10	0.15
	(0.11)	(0.10)	(0.09)	(0.09)	(0.10)
Wild Bootstrap P-value	0.09	0.09	0.09	0.35	0.22
Control Mean (Normalized)	0.00	-0.00	0.00	0.00	-0.00
N	2155	2155	2194	2183	2174
Panel II: Subordinates only					
Treatment	0.31***	0.29***	0.24**	0.12	0.18*
	(0.10)	(0.10)	(0.09)	(0.09)	(0.10)
Wild Bootstrap P-value	0.03	0.03	0.06	0.33	0.19
Control Mean (Normalized)	-0.05	-0.06	-0.03	0.00	-0.03
N	1772	1772	1804	1796	1789
Panel III: Leaders only					
Treatment	-0.04	-0.04	0.07	0.05	-0.08
	(0.16)	(0.13)	(0.12)	(0.10)	(0.11)
Wild Bootstrap P-value	0.88	0.82	0.62	0.65	0.56
Subordinate = Leader	0.00	0.00	0.04	0.45	0.00
Control Mean (Normalized)	0.26	0.27	0.16	-0.00	0.17
N	383	383	390	387	385

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects using the full sample, Panel II, subordinate sample, and Panel III leader sample. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table 6: Treatment Effects on COVID-19 Related Well-Being

Panel I: Full sample	Prefer to Work at Home	Feel Lonely	Not Connected to Colleagues	Not Connected to Leader	Increased Vice Consumption
Treatment	-0.06***	-0.01	0.01	-0.04**	0.00
	(0.02)	(0.02)	(0.03)	(0.02)	(0.00)
Wild Bootstrap P-value	0.02	0.85	0.81	0.05	0.55
Control Mean	0.61	0.45	0.35	0.36	0.01
N	2150	2150	2150	2150	4955
Panel II: Subordinates only					
Treatment	-0.06**	-0.02	-0.01	-0.04**	0.00
	(0.03)	(0.02)	(0.02)	(0.02)	(0.00)
Wild Bootstrap P-value	0.09	0.45	0.81	0.07	0.52
Control Mean	0.63	0.45	0.35	0.36	0.01
N	1767	1767	1767	1767	4256
Panel III: Leaders only					
Treatment	-0.08	0.07	0.11*	-0.05	-0.00
	(0.06)	(0.09)	(0.05)	(0.06)	(0.01)
Wild Bootstrap P-value	0.35	0.58	0.17	0.47	0.99
Subordinate = Leader	0.76	0.26	0.02	0.82	0.82
Control Mean	0.51	0.44	0.34	0.35	0.02
N	383	383	383	383	699

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects using the full sample, Panel II, subordinate sample, and Panel III leader sample. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table 7: Heterogeneous Treatment Effects on Turnover and Promotion: Leader Gender

Panel I: Have Male Leader	Implementation Period (November 2020-June 2021)		Post-Firing Ban (July 2021-November 2021)	
	Turnover	Promotion	Turnover	Promotion
Treatment	-0.04**	0.00	-0.03**	-0.05*
	(0.02)	(0.02)	(0.01)	(0.02)
Wild Bootstrap P-value	0.07	0.88	0.05	0.12
Control Mean	0.05	0.07	0.06	0.09
N	1438	1438	1235	1235
Panel II: Have Female Leader				
Treatment	-0.02*	0.06***	0.03	-0.16*
	(0.01)	(0.02)	(0.05)	(0.08)
Wild Bootstrap P-value	0.07	0.05	0.63	0.21
Male leader = Female leader	0.43	0.04	0.18	0.05
Control Mean	0.09	0.07	0.06	0.19
N	403	403	230	230

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects for participants whose immediate team leader is a male, Panel II, provides estimated treatment effects for participants whose immediate team leader is a female. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table 8: Heterogeneous Treatment Effects on Pro and Anti-Social Behavior: Leader Gender

Panel I: Have Male Leader	Sabotage	Trust	Reciprocity	Ultimatum Offer	Min. Accepted
Treatment	-2.84***	-0.47	0.03***	4.81	1.24
	(0.59)	(1.78)	(0.01)	(2.80)	(2.02)
Wild Bootstrap P-value	0.00	0.86	0.03	0.18	0.61
Control Mean	23.52	52.73	0.38	99.26	94.92
N	1385	1385	1385	1385	1385
Panel II: Have Female Leader					
Treatment	-2.42**	0.44	0.06**	0.73	-6.43*
	(1.14)	(1.75)	(0.02)	(3.25)	(3.12)
Wild Bootstrap P-value	0.04	0.77	0.07	0.85	0.07
Male leader = Female leader	0.76	0.72	0.27	0.31	0.07
Control Mean	22.01	51.45	0.33	106.07	103.76
N	388	388	388	388	388

Reported estimates are obtained from ordinary least squares (OLS) regressions. The dependent variables are: Sabotage: the amount of sabotage endowment used, Trust: the amount of money sent to the anonymous receiver, Reciprocity: average fraction sent back to the sender, Ultimatum offered: the amount offered by the proposer, and Min. Acceptable: the minimum acceptable offer reported. Panel I provides estimated treatment effects for participants whose immediate team leader is a male, Panel II, provides estimated treatment effects for participants whose immediate team leader is a female. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table 9: Heterogeneous Treatment Effects on Workplace Climate: Leader Gender

Panel I: Have Male Leader	Workplace Quality		Relational Atmosphere		
	Workplace S.	Metirocratic Values	Collegial Dept.	Behavioral Norms	Prescriptive Norms
Treatment	0.18	0.20*	0.15	0.05	0.09
	(0.11)	(0.10)	(0.10)	(0.10)	(0.09)
Wild Bootstrap P-value	0.21	0.13	0.23	0.74	0.40
Control Mean (Normalized)	0.07	0.01	0.06	0.04	0.07
N	1412	1412	1438	1430	1423
Panel II: Have Female Leader					
Treatment	0.57***	0.53***	0.43**	0.16	0.24
	(0.17)	(0.16)	(0.19)	(0.12)	(0.14)
Wild Bootstrap P-value	0.05	0.04	0.13	0.32	0.15
Male leader = Female leader	0.00	0.02	0.11	0.36	0.22
Control Mean (Normalized)	-0.24	-0.12	-0.24	-0.02	-0.08
N	393	393	399	396	396

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects for participants whose immediate team leader is a male, Panel II, provides estimated treatment effects for participants whose immediate team leader is a female. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table 10: Heterogeneous Treatment Effects on COVID-19 Related Well-Being: Leader Gender

Panel I: Have Male Leader	Prefer to Work at Home	Feel Lonely	Not Connected to Colleagues	Not Connected to Leader	Increased Vice Consumption
Treatment	-0.04	-0.00	0.01	-0.03	0.01
	(0.03)	(0.02)	(0.02)	(0.02)	(0.01)
Wild Bootstrap P-value	0.25	0.93	0.79	0.23	0.53
Control Mean (Normalized)	0.59	0.43	0.35	0.35	0.03
N	1409	1409	1409	1409	1442
Panel II: Have Female Leader					
Treatment	-0.04	0.04	0.03	-0.04	0.03
	(0.05)	(0.05)	(0.06)	(0.07)	(0.02)
Wild Bootstrap P-value	0.48	0.51	0.70	0.62	0.37
Male leader = Female leader	0.91	0.30	0.72	0.91	0.51
Control Mean (Normalized)	0.73	0.46	0.39	0.36	0.02
N	392	392	392	392	404

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects for participants whose immediate team leader is a male, Panel II, provides estimated treatment effects for participants whose immediate team leader is a female. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

8 Figures

Figure 1: Timeline of the Trial

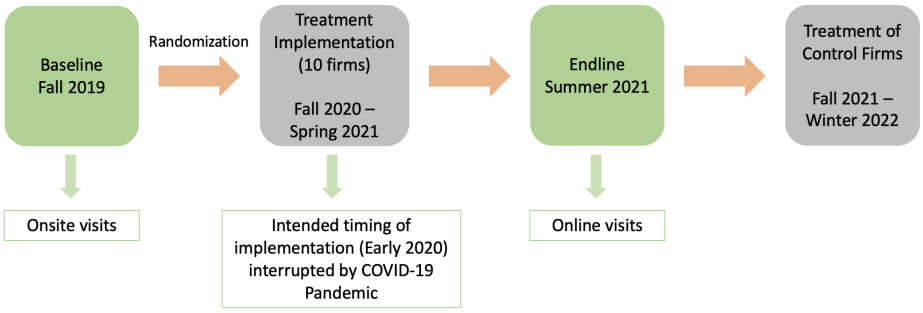

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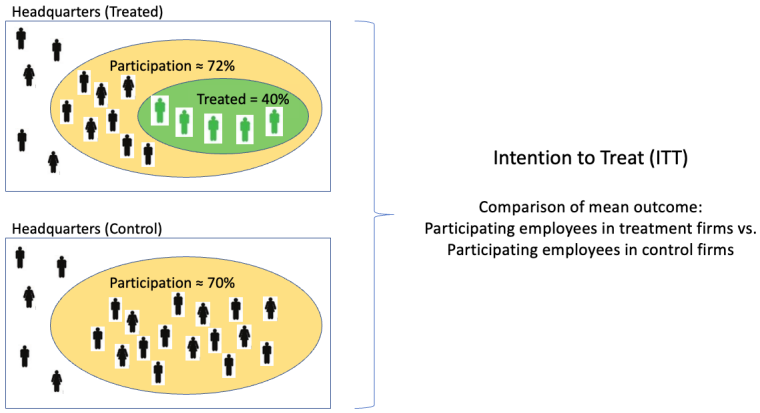
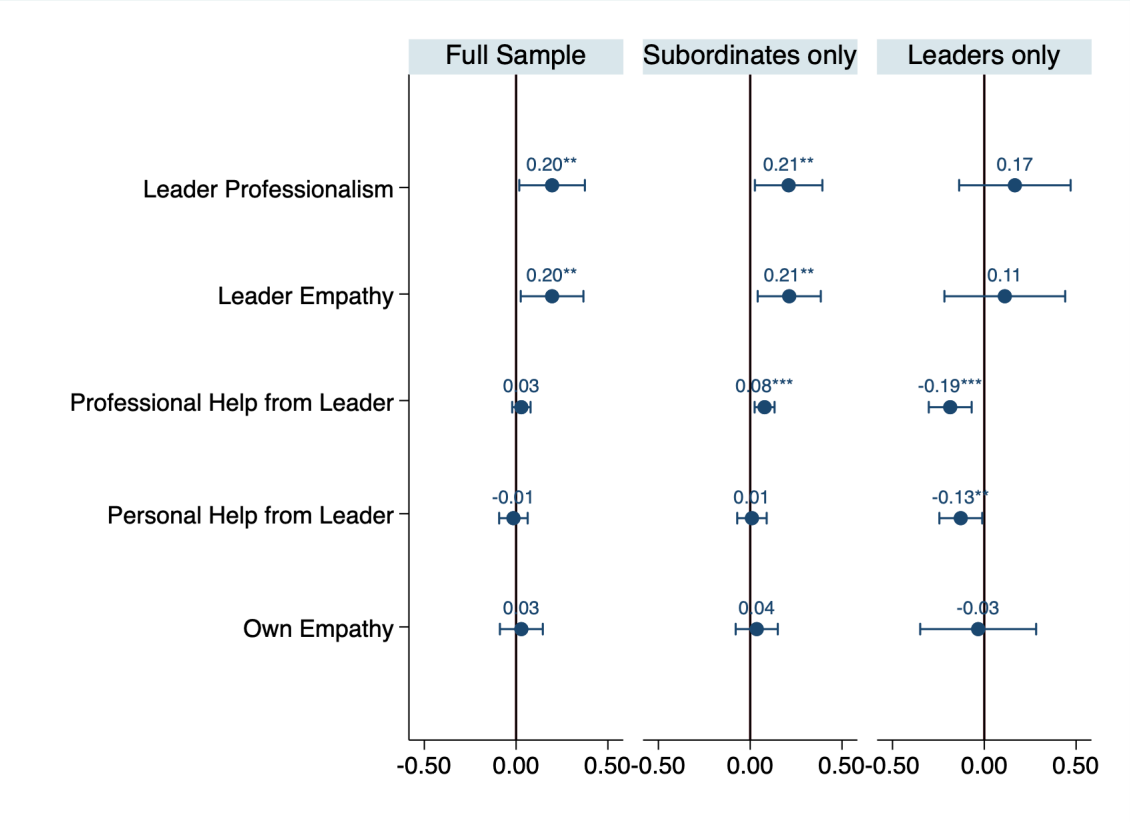
Figure 2: Evaluation Design: ITT



Participation refers to those who stated their willingness to participate in the study and signed the consent form. Percentage treated refers to the percentage who took part in the training program amongst those who participated.

Figure 3: Potential Mechanisms



The figure depicts the estimated treatment effects on leader professionalism, leader empathy (reported by subordinates), whether the respondent nominated her leader as a professional (personal) help provider, and respondent's own empathy level. All regressions use OLS and control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. 95% confidence intervals are based on standard errors clustered at the firm level. The vertical line indicates an effect of zero.

Online Appendix: Not for Publication

A Additional Tables and Figures

Table A.1: Balance at Amended Baseline

	N	Control Mean	Treatment Mean	Difference (T-C)	P-value of Difference
Male	2332	0.73	0.67	-0.09	0.14
Age	2257	36.52	35.52	-0.46	0.47
Married	2332	0.68	0.64	-0.04	0.09*
Tenure (yearly)	2204	6.30	6.00	0.51	0.57
Raven Score (IQ)	2130	0.02	0.09	0.06	0.41
Eyes Score (Emotional Intelligence)	2119	0.04	0.01	0.03	0.76

Reported statistics use the total baseline sample amended by baseline data collected in 2021. This table presents the balance of individual-level variables. Cognitive tests and survey measures are standardized. P-values are obtained by controlling for randomization strata (sector). Standard errors are clustered at the firm level (unit of randomization).

Table A.2: Balance at Baseline: Subordinates and Leaders

Panel I: Subordinates only

	N	Control Mean	Treatment Mean	Difference (T-C)	P-value of Difference
Male	1635	0.62	0.54	-0.08	0.12
Age	1621	34.82	34.56	-0.04	0.94
Married	1483	0.65	0.59	-0.06	0.10
Tenure (yearly)	1473	6.67	7.03	0.31	0.67
Leader Age	906	42.10	41.33	-0.59	0.61
Under Male Leader	1140	0.73	0.72	-0.02	0.62
Raven Score (IQ)	1522	-0.04	0.04	0.03	0.74
Eyes Score (Emotional Intelligence)	1526	-0.01	-0.24	-0.12	0.19
Risk Attitude	1484	-0.02	-0.00	-0.05	0.34
Competitiveness	1478	0.49	0.47	-0.02	0.47
Cooperation	1484	-0.03	0.03	0.03	0.61
Workplace Satisfaction	1085	-0.07	0.04	0.17	0.06*
Collegial Department	1144	-0.04	-0.12	0.01	0.91
Meritocratic Values	1057	-0.10	0.09	0.28	0.00***
Behavioral Norms	1088	-0.03	0.02	0.11	0.28
Prescriptive Norms	970	-0.05	-0.02	0.07	0.49
Leader Quality	1010	-0.02	0.02	0.08	0.28
Nominated Leader as Professional Help	1231	0.58	0.64	0.06	0.13
Nominated Leader as Personal Help	1231	0.45	0.49	0.06	0.15

Panel II: Leaders only

Male	353	0.71	0.67	-0.03	0.50
Age	352	41.98	41.47	-0.66	0.46
Married	316	0.79	0.80	0.01	0.76
Tenure (yearly)	312	10.56	10.61	-0.20	0.91
Leader Age	154	44.01	46.27	2.80	0.09*
Under Male Leader	257	0.79	0.67	-0.09	0.15
Raven Score (IQ)	330	0.21	0.23	-0.03	0.81
Eyes Score (Emotional Intelligence)	332	-0.17	-0.30	-0.10	0.60
Risk Attitude	321	0.11	0.05	-0.07	0.44
Competitiveness	319	0.58	0.61	0.01	0.87
Cooperation	321	0.14	0.16	-0.02	0.86
Workplace Satisfaction	246	0.27	0.30	0.02	0.82
Collegial Department	258	0.18	0.03	-0.12	0.13
Meritocratic Values	230	0.41	0.30	-0.09	0.42
Behavioral Norms	245	0.12	0.05	-0.10	0.35
Prescriptive Norms	224	0.19	0.16	-0.03	0.75
Leader Quality	224	0.08	-0.06	-0.09	0.43
Nominated Leader as Professional Help	261	0.44	0.49	0.06	0.42
Nominated Leader as Personal Help	261	0.45	0.38	-0.06	0.49

Reported statistics use the Fall 2019 baseline sample. Panel I presents the balance of individual-level variables for the subordinates, and Panel II for the leaders. Cognitive tests, risk attitude, cooperation and survey measures are standardized. P-values are obtained by controlling for randomization strata (sector). Standard errors are clustered at the firm level (unit of randomization).

Table A.3: Treatment Effects on Turnover and Promotion (without covariates)

Panel I: Full sample	Implementation Period (November 2020-June 2021)		Post-Firing Ban (July 2021-November 2021)	
	Turnover	Promotion	Turnover	Promotion
Treatment	-0.02	0.02	-0.01	-0.06
	(0.01)	(0.02)	(0.01)	(0.04)
Wild Bootstrap P-value	0.15	0.52	0.39	0.25
Control Mean	0.05	0.07	0.07	0.09
N	3076	3076	2537	2537
Panel II: Subordinates only				
Treatment	-0.01	0.01	-0.02	-0.04
	(0.01)	(0.02)	(0.01)	(0.03)
Wild Bootstrap P-value	0.37	0.63	0.37	0.31
Control Mean	0.05	0.07	0.07	0.08
N	2547	2547	2102	2102
Panel III: Leaders only				
Treatment	-0.04**	0.05	-0.00	-0.10*
	(0.02)	(0.03)	(0.03)	(0.06)
Wild Bootstrap P-value	0.02	0.20	0.94	0.18
Subordinate = Leader	0.09	0.29	0.58	0.05
Control Mean	0.06	0.06	0.06	0.16
N	529	529	435	435
Panel IV: Non-participant sample				
Treatment	-0.01	0.02	-0.00	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)
Wild Bootstrap P-value	0.84	0.27	0.86	0.52
Control Mean	0.06	0.03	0.04	0.04
N	1240	1240	1059	1059

Reported estimates are obtained from ordinary least squares (OLS) regressions. Regressions covering the post-firing ban period (columns 3 and 4) exclude the finance sector (3 firms). Panel I provides estimated treatment eects using the full sample, Panel II, subordinate sample, Panel III leader sample, and Panel IV non-participant sample. Regressions only control for sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table A.4: Treatment Effects on Pro and Anti-Social Behavior (without covariates)

Panel I: Full sample	Sabotage	Trust	Reciprocity	Ultimatum Offer	Min. Accepted
Treatment	-3.26***	0.79	0.03***	3.41	-2.07
	(0.56)	(1.64)	(0.01)	(2.07)	(1.43)
Wild Bootstrap P-value	0.00	0.71	0.01	0.17	0.20
Control Mean	23.13	52.15	0.37	101.15	97.97
N	2233	2233	2233	2233	2233
Panel II: Subordinates only					
Treatment	-3.29***	0.16	0.03***	2.98	-2.60
	(0.61)	(1.56)	(0.01)	(2.28)	(1.69)
Wild Bootstrap P-value	0.00	0.94	0.03	0.29	0.18
Control Mean	22.68	51.44	0.36	101.09	98.38
N	1839	1839	1839	1839	1839
Panel III: Leaders only					
Treatment	-4.12**	1.64	0.01	3.96	0.19
	(1.48)	(2.02)	(0.03)	(2.86)	(4.56)
Wild Bootstrap P-value	0.02	0.50	0.73	0.27	0.97
Subordinate = Leader	0.63	0.43	0.56	0.78	0.60
Control Mean	25.34	55.63	0.41	101.44	95.95
N	394	394	394	394	394

Reported estimates are obtained from ordinary least squares (OLS) regressions. The dependent variables are: Sabotage: the amount of sabotage endowment used, Trust: the amount of money sent to the anonymous receiver, Reciprocity: average fraction sent back to the sender, Ultimatum offered: the amount offered by the proposer, and Min. Acceptable: the minimum acceptable offer reported. Panel I provides estimated treatment effects using the full sample, Panel II, subordinate sample, and Panel III leader sample. Regressions only control for sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table A.5: Treatment Effects on Support Networks (without covariates)

Panel I: Full sample	Proportion Isolated		Department Density		Cohort Segregation	
	Professional S.	Personal S.	Professional S.	Personal S.	Professional S.	Personal S.
Treatment	-0.05*	-0.09***	0.03	0.02	-0.03	-0.07***
	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Wild Bootstrap P-value	0.25	0.02	0.27	0.27	0.17	0.01
Control Mean	0.13	0.24	0.06	0.05	0.03	0.05
N	163	163	162	161	138	137
Panel II: Subordinates only						
Treatment	-0.07**	-0.09***	0.02	0.03	-0.01	-0.03
	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Wild Bootstrap P-value	0.16	0.02	0.25	0.16	0.63	0.22
Control Mean	0.14	0.18	0.05	0.04	0.04	0.10
N	161	161	160	159	120	119

Reported estimates are obtained from ordinary least squares (OLS) regressions. All dependent variables are constructed at the department level. Panel I provides estimated treatment effects using the full sample, and Panel II, subordinate sample. Regressions only control for sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table A.6: Treatment Effects on Perceived Workplace Climate (without covariates)

Panel I: Male Only	Workplace Climate		Relational Dynamics		
	Workplace S.	Metirocratic Values	Collegial Dept.	Behavioral Norms	Prescriptive Norms
Treatment	0.22**	0.21*	0.20**	0.12	0.16*
	(0.11)	(0.10)	(0.09)	(0.08)	(0.09)
Wild Bootstrap P-value	0.10	0.13	0.07	0.24	0.11
Control Mean (Normalized)	0.00	-0.00	0.00	0.00	-0.00
N	2155	2155	2194	2183	2174
Panel II: Subordinates only					
Treatment	0.27**	0.26**	0.22**	0.13	0.18*
	(0.10)	(0.10)	(0.09)	(0.09)	(0.09)
Wild Bootstrap P-value	0.02	0.08	0.05	0.24	0.09
Control Mean (Normalized)	-0.05	-0.06	-0.03	0.00	-0.03
N	1772	1772	1804	1796	1789
Panel III: Leaders only					
Treatment	-0.05	-0.05	0.08	0.06	0.02
	(0.14)	(0.13)	(0.10)	(0.09)	(0.11)
Wild Bootstrap P-value	0.77	0.79	0.53	0.56	0.84
Subordinate = Leader	0.00	0.00	0.01	0.41	0.09
Control Mean (Normalized)	0.26	0.27	0.16	-0.00	0.17
N	383	383	390	387	385

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects using the full sample, Panel II, subordinate sample, and Panel III leader sample. Regressions only control for sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table A.7: Treatment Effects on COVID-19 Related Well-Being (without covariates)

Panel I: Full sample	Prefer to Work at Home	Feel Lonely	Not Connected to Colleagues	Not Connected to Leader	Increased Vice Consumption
Treatment	-0.04	0.01	0.02	-0.04**	0.00
	(0.03)	(0.02)	(0.02)	(0.02)	(0.00)
Wild Bootstrap P-value	0.26	0.69	0.32	0.06	0.48
Control Mean	0.61	0.45	0.35	0.36	0.01
N	2150	2150	2150	2150	4985
Panel II: Subordinates only					
Treatment	-0.04	-0.00	0.01	-0.03*	0.00
	(0.04)	(0.02)	(0.02)	(0.02)	(0.00)
Wild Bootstrap P-value	0.43	0.92	0.80	0.12	0.70
Control Mean	0.63	0.45	0.35	0.36	0.01
N	1767	1767	1767	1767	4286
Panel III: Leaders only					
Treatment	-0.05	0.07	0.11**	-0.07	0.01
	(0.04)	(0.07)	(0.04)	(0.05)	(0.01)
Wild Bootstrap P-value	0.41	0.51	0.09	0.28	0.33
Subordinate = Leader	0.86	0.33	0.02	0.48	0.32
Control Mean	0.51	0.44	0.34	0.35	0.02
N	383	383	383	383	699

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects using the full sample, Panel II, subordinate sample, and Panel III leader sample. Regressions only control for sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table A.8: Correction for Multiple Hypothesis Testing: Original and Romano-Wolf p-values

	Full Sample		Subordinates Only		Leaders Only	
Panel I: Pro and Anti-Social Behavior	Original	Romano-Wolf	Original	Romano-Wolf	Original	Romano-Wolf
Sabotage	0.00	0.03	0.00	0.01	0.12	0.53
Trust	0.65	0.90	0.99	0.99	0.60	0.92
Reciprocity	0.00	0.02	0.00	0.00	0.58	0.92
Ultimatum Offer	0.12	0.41	0.25	0.59	0.01	0.67
Min. Accepted	0.57	0.90	0.40	0.80	0.59	0.92
Panel II: Workplace Climate						
	Original	Romano-Wolf	Original	Romano-Wolf	Original	Romano-Wolf
Workplace S.	0.03	0.10	0.01	0.01	0.82	0.95
Meritocratic Values	0.03	0.12	0.01	0.02	0.76	0.95
Collegial Dept.	0.03	0.14	0.02	0.09	0.59	0.94
Behavioral Norms	0.26	0.42	0.22	0.39	0.60	0.95
Prescriptive Norms	0.13	0.31	0.07	0.20	0.47	0.93
Panel III: Leadership Quality						
	Original	Romano-Wolf	Original	Romano-Wolf	Original	Romano-Wolf
Leader Professionalism	0.03	0.12	0.03	0.09	0.27	0.49
Leader Empathy	0.03	0.12	0.02	0.09	0.49	0.57
Professional Help from Leader	0.24	0.71	0.01	0.09	0.00	0.18
Personal Help from Leader	0.70	0.79	0.81	0.85	0.03	0.40
Panel IV: Covid-19 Related Well-Being						
	Original	Romano-Wolf	Original	Romano-Wolf	Original	Romano-Wolf
Prefer to Work at Home	0.00	0.11	0.03	0.10	0.16	0.67
I Feel Lonely	0.81	0.95	0.35	0.82	0.41	0.70
Not Connected to My Colleagues	0.75	0.95	0.75	0.85	0.06	0.47
Not Connected to My Leader	0.02	0.34	0.04	0.38	0.37	0.71
Increased Vice Consumption	0.48	0.95	0.41	0.85	0.98	0.99

Reported p-values are obtained from ordinary least squares (OLS) regressions, original and adjusted for multiple hypothesis testing using the Romano and Wolf (2005) procedure. Panel I presents treatment effects on pro and anti-social behavior, Panel II, workplace climate, Panel III, leadership quality, and Panel IV Covid-19 related well-being. Columns 1-2 provide estimated treatment effects using the full sample, columns 3-4, subordinate sample, and columns 5-6 leader sample. Regressions control for Ravens score, Eye Test score, gender, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization).

Table A.9: Heterogeneous Treatment Effects on Turnover and Promotion: Gender

Panel I: Male only	Implementation Period (November 2020-June 2021)		Post-Firing Ban (July 2021-November 2021)	
	Turnover	Promotion	Turnover	Promotion
Treatment	-0.02**	0.01	-0.04**	-0.05*
	(0.01)	(0.03)	(0.01)	(0.03)
Wild Bootstrap P-value	0.05	0.79	0.09	0.19
Control Mean	0.05	0.07	0.07	0.09
N	2111	2111	1831	1831
Panel II: Female Only				
Treatment	-0.02*	0.00	-0.00	-0.07
	(0.01)	(0.02)	(0.02)	(0.05)
Wild Bootstrap P-value	0.10	0.92	0.96	0.42
Male = Female	0.61	0.62	0.16	0.56
Control Mean	0.07	0.07	0.06	0.08
N	965	965	706	706

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects for male participants, Panel II, female participants. Regressions control for Ravens score, Eye Test score, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table A.10: Heterogeneous Treatment Effects on Pro and Anti-Social Behavior: Gender

Panel I: Male only	Sabotage	Trust	Reciprocity	Ultimatum Offer	Min. Accepted
Treatment	-3.74***	2.21*	0.03**	6.44***	1.50
	(0.87)	(1.18)	(0.01)	(2.25)	(2.30)
Wild Bootstrap P-value	0.03	0.13	0.05	0.02	0.54
Control Mean	23.95	53.90	0.39	100.00	96.97
N	1564	1564	1564	1564	1564
Panel II: Female only					
Treatment	-1.27	-1.65	0.05**	-3.16	-5.52
	(0.84)	(3.28)	(0.02)	(4.81)	(3.97)
Wild Bootstrap P-value	0.18	0.75	0.03	0.66	0.34
Male = Female	0.09	0.22	0.27	0.07	0.16
Control Mean	20.95	47.51	0.33	104.16	100.61
N	669	669	669	669	669

Reported estimates are obtained from ordinary least squares (OLS) regressions. The dependent variables are: Sabotage: the amount of sabotage endowment used, Trust: the amount of money sent to the anonymous receiver, Reciprocity: average fraction sent back to the sender, Ultimatum offered: the amount offered by the proposer, and Min. Acceptable: the minimum acceptable offer reported. Panel I provides estimated treatment effects for male participants, Panel II, female participants. Regressions control for Ravens score, Eye Test score, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table A.11: Heterogeneous Treatment Effects on Workplace Climate: Gender

Panel I: Male Only	Workplace Quality		Relational Atmosphere		
	Workplace S.	Metirocratic Values	Collegial Dept.	Behavioral Norms	Prescriptive Norms
Treatment	0.23*	0.22*	0.18*	0.07	0.09
	(0.12)	(0.11)	(0.10)	(0.08)	(0.07)
Wild Bootstrap P-value	0.15	0.12	0.16	0.47	0.35
Control Mean (Normalized)	0.05	0.03	0.05	-0.00	0.08
N	1516	1516	1547	1538	1530
Panel II: Female Only					
Treatment	0.30*	0.27*	0.29	0.19	0.24
	(0.15)	(0.14)	(0.17)	(0.18)	(0.18)
Wild Bootstrap P-value	0.18	0.22	0.23	0.46	0.32
Male = Female	0.62	0.72	0.55	0.48	0.25
Control Mean (Normalized)	-0.13	-0.09	-0.13	0.01	-0.21
N	639	639	647	645	644

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects for male participants, Panel II, female participants. Regressions control for Ravens score, Eye Test score, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Table A.12: Heterogeneous Treatment Effects on COVID-19 Related Well-Being: Gender

Panel I: Male Only	Prefer to Work at Home	Feel Lonely	Not Connected to Colleagues	Not Connected to Leader	Increased Vice Consumption
Treatment	-0.07***	-0.03	0.03	-0.01	0.01*
	(0.02)	(0.02)	(0.03)	(0.02)	(0.00)
Wild Bootstrap P-value	0.01	0.33	0.48	0.65	0.17
Control Mean (Normalized)	0.56	0.43	0.34	0.35	0.01
N	1512	1512	1512	1512	3521
Panel II: Female Only					
Treatment	-0.02	0.05	-0.04	-0.10***	-0.01
	(0.04)	(0.03)	(0.03)	(0.03)	(0.01)
Wild Bootstrap P-value	0.67	0.35	0.38	0.03	0.43
Male = Female	0.20	0.00	0.00	0.03	0.05
Control Mean (Normalized)	0.76	0.48	0.39	0.39	0.01
N	638	638	638	638	1434

Reported estimates are obtained from ordinary least squares (OLS) regressions. Panel I provides estimated treatment effects for male participants, Panel II, female participants. Regressions control for Ravens score, Eye Test score, age, marital status, number of children, tenure, department size, the share of males in the department, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization) and wild bootstrapped p-values, adjusted for small sample, are provided.

Figure A.1: Depicted Theory of Change

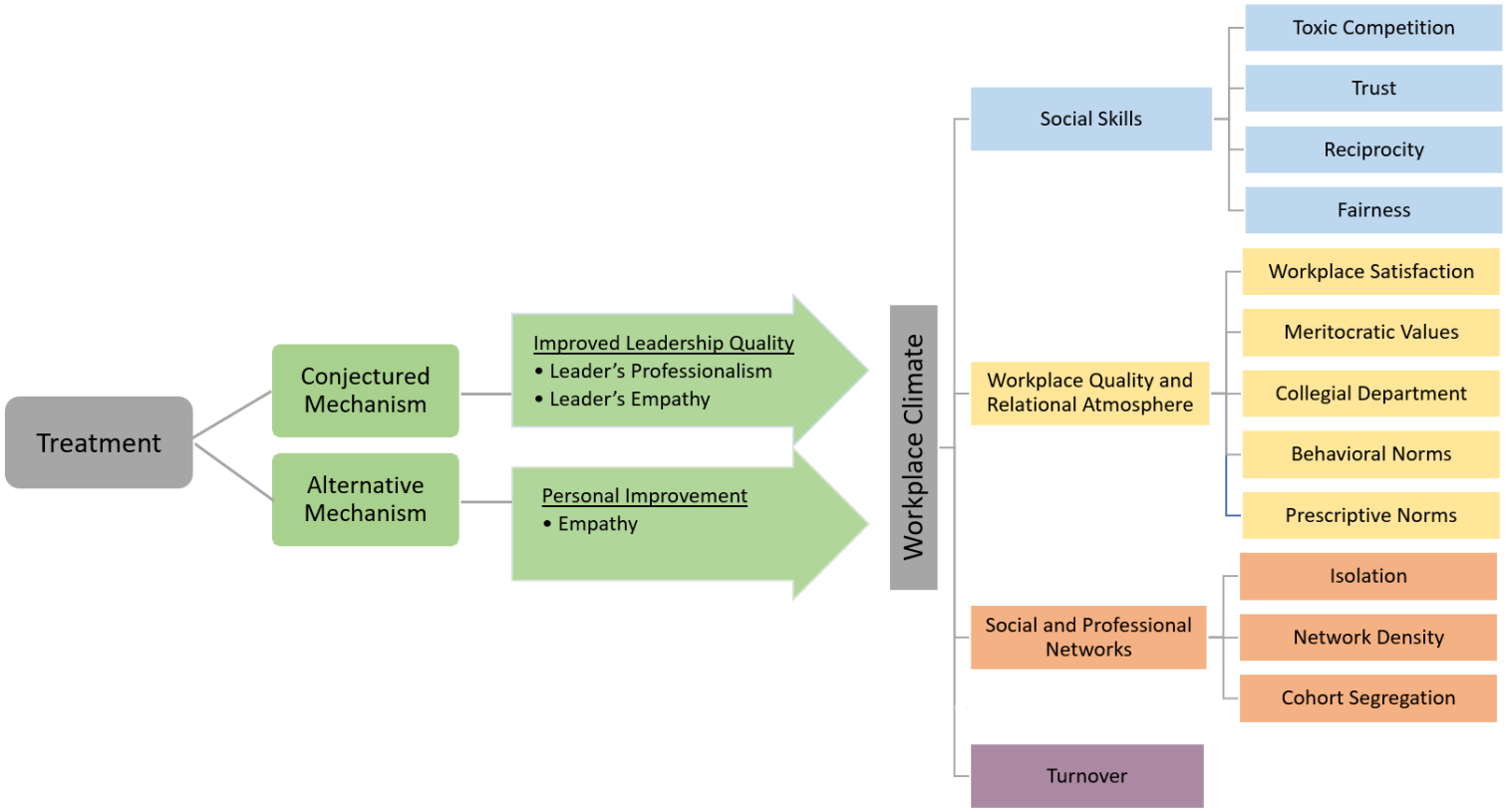
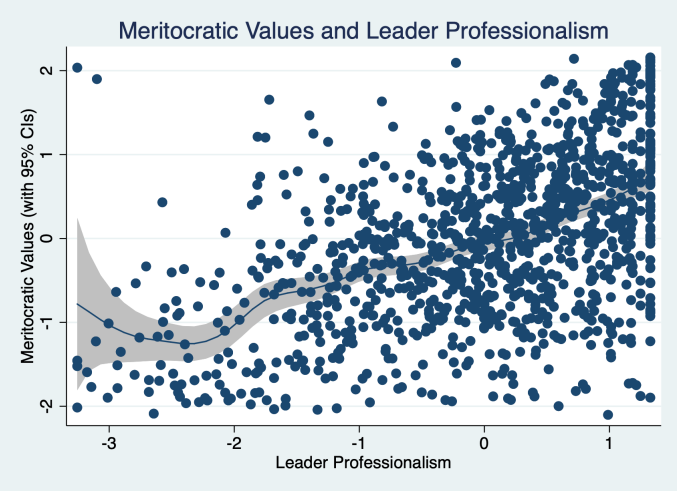
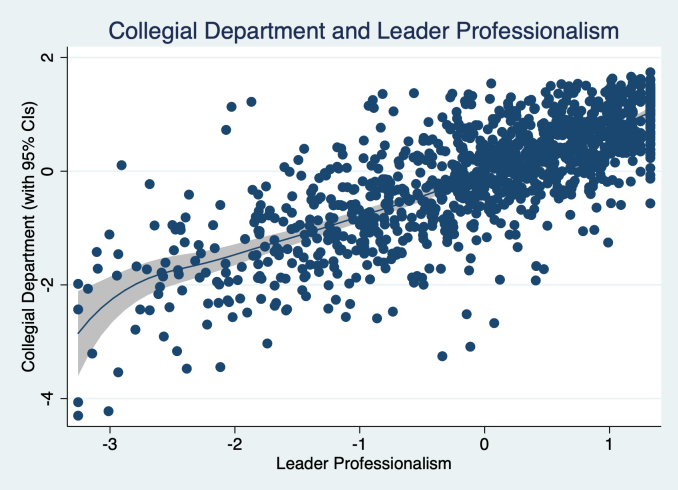
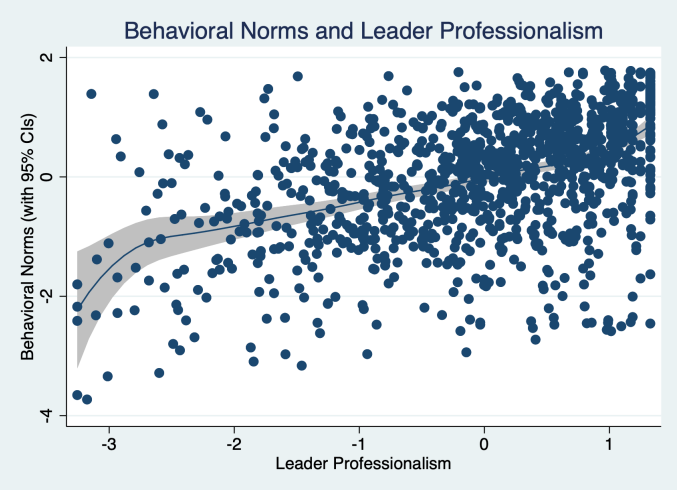
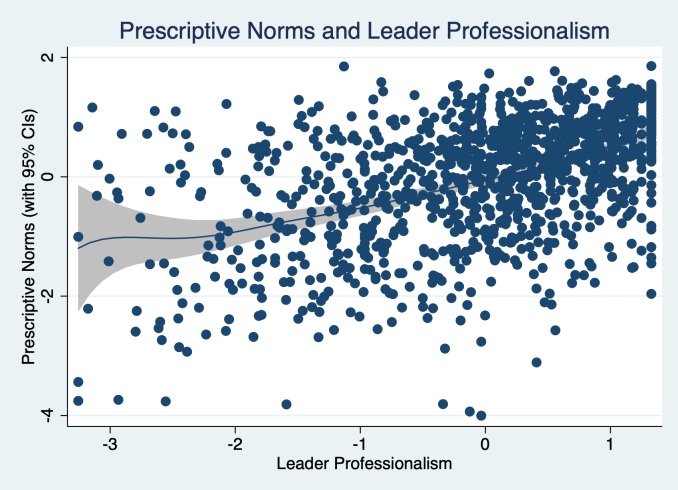


Figure A.2: Associations between Leader Professionalism and Workplace Climate/Relational Dynamics, Control Only Sample



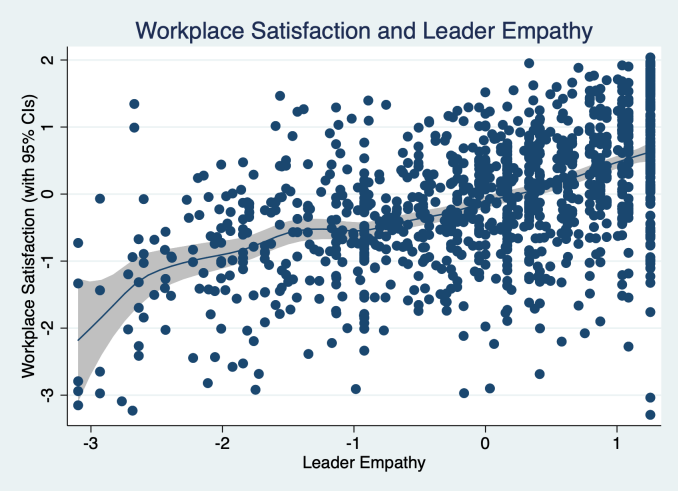


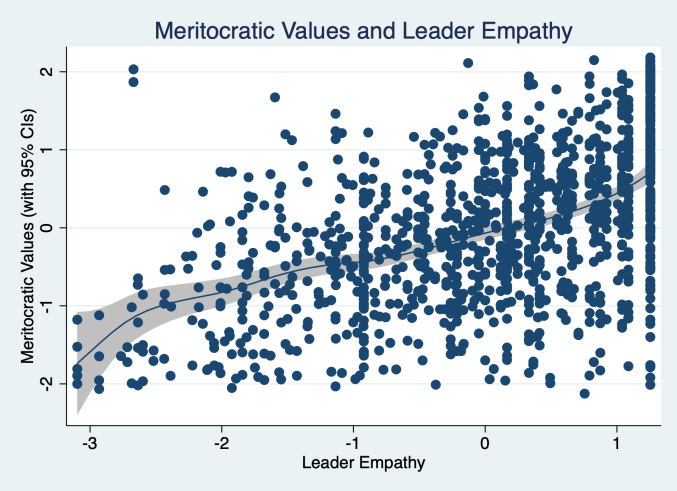


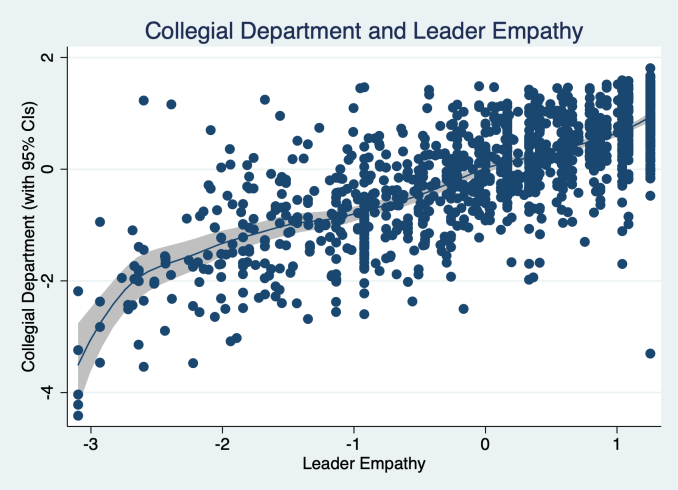


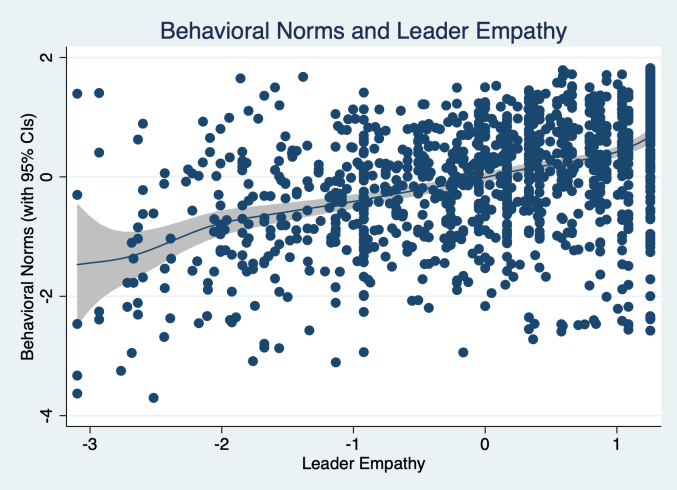
Figures plot the non-parametric estimates (and 95% confidence bands) of the associations between leader professionalism reported by subordinates and workplace satisfaction, perceived meritocratic values, collegiality of the department, descriptive and prescriptive behavioral norms. Ravens score, Eye Test score, gender, age, marital status, number of children, department size, the share of males in the department, firm size and sector dummies enter the model linearly. Shaded areas represent 95% confidence intervals.

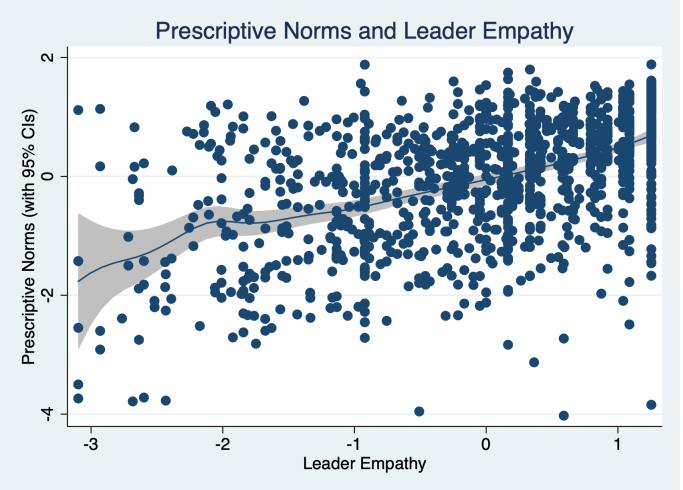
Figure A.3: Associations between Leader Empathy and Workplace Climate/Relational Dynamics, Control Only Sample











Figures plot the non-parametric estimates (and 95% confidence bands) of the associations between leader empathy reported by subordinates and workplace satisfaction, perceived meritocratic values, collegiality of the department, descriptive and prescriptive behavioral norms. Ravens score, Eye Test score, gender, age, marital status, number of children, department size, the share of males in the department, firm size and sector dummies enter the model linearly. Shaded areas represent 95% confidence intervals.

B Qualitative Analysis

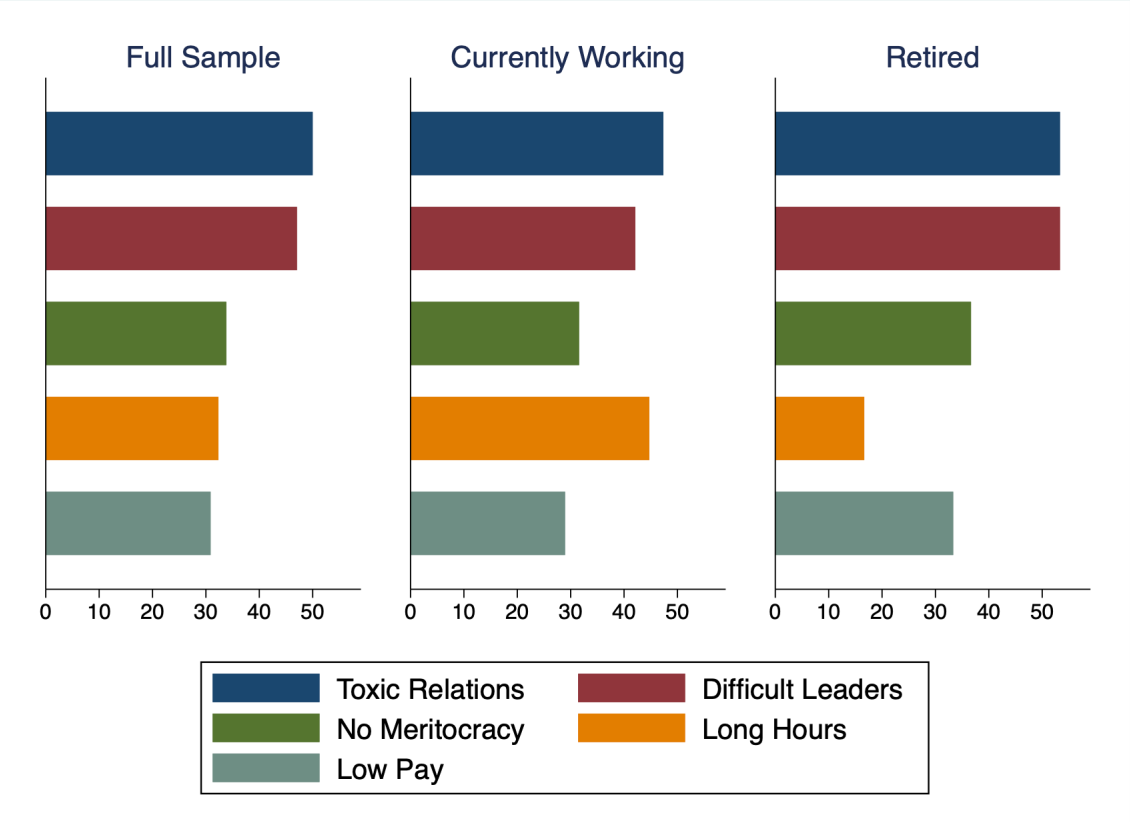
After some informal conversations with a number of currently working and retired professionals about the difficulties of corporate life, we decided to run a simple survey using a professional network. We sent out a short survey to 80 professionals. We received responses from 68 of them, 30 of whom no longer work in the corporate sector. The question was worded in the following way:

We would like to know the most important challenges one faces when working in corporate sector as a white-collar professional. Please rank the following options from 1 to 9, with the most commonly observed challenge taking the value 1, and the least taking the value 9.

1. Long working hours, heavy workload
2. Low pay
3. Lack of meritocracy
4. Hypercompetition
5. Gossip, poor quality in human relations
6. Feeling unappreciated
7. Language used by leaders
8. Unappreciative leaders
9. Bullying and mobbing by leaders

We then grouped items 4-6 as "toxic relations", 7-9 as "difficult leaders". We then calculated the proportion of people who stated these as top 3 challenges faced in the corporate life. Figure B.1 presents the results for the full sample (68 professionals), currently working professionals (38) and retired professionals (30).

Figure B.1: Qualitative Evidence



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C Intervention Content and Example Activities

C.1 Module 1: Online Workshops

Below we present an outline of the content covered in the online training sessions.

Session 1: Time-travel to the company's future

- Short presentation by the trainer on the importance of workplace culture, cultural transformation and shifting workplace paradigms.
- Group activity: *Close your eyes and imagine your aspired workplace in 2040. Describe the workplace climate and the relational atmosphere. Then discuss the obstacles in your current working environment to achieving this ideal environment.*
- Sharing and openly debating each group's output.

- Brain storming activity: *What can be done in the current workplace to improve: appreciation, feedback provision, communication, reception of innovative ideas, respectful treatment of one another, and good leadership practices?*

Session 2: Understanding each other

- Short presentation by the trainer on empathy.
- Group activity: *Participants are randomly assigned to groups of leaders and subordinates, where they switch roles. They form gossip circles and openly criticize the other group in this role-playing exercise with respect to complaints, expectations, and vulnerabilities.*
- The critiques are then shared with and discussed among the entire group.

Session 3: Good leadership practices

- Interactive survey: *Rank the most important qualities of a good leader.*
- Short presentation by the trainer on good leadership including anecdotes and case studies.
- Discussion of survey results in the context of the current company.

Session 4: Relying on each other

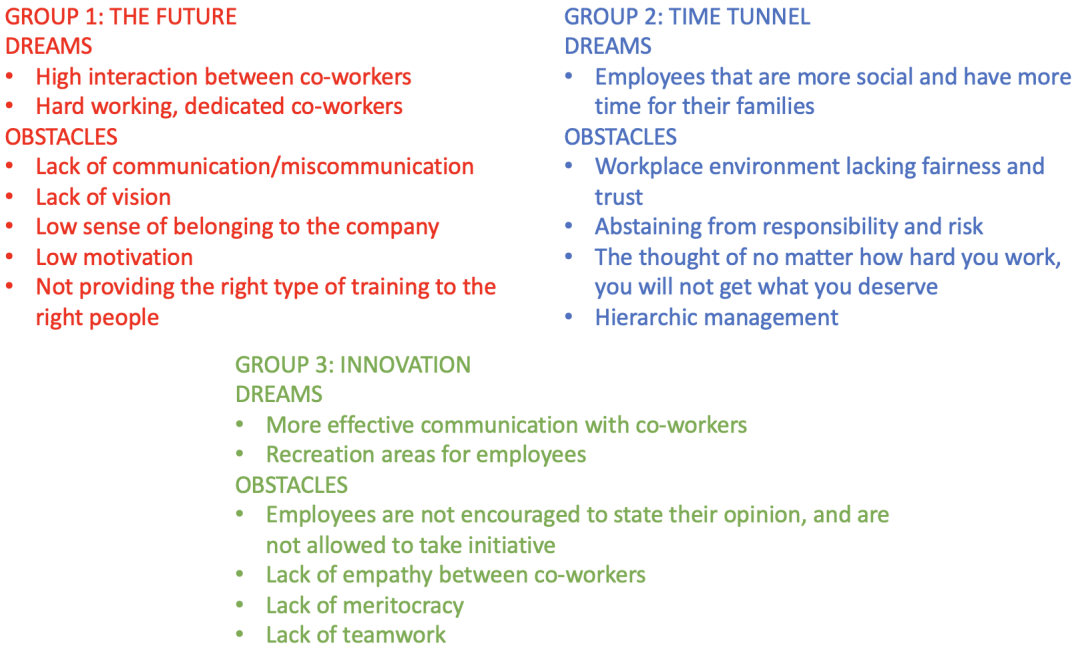
- Demonstrations of proactive and reactive behavior in the workplace using creative drama.
- Group activity: *Each group performs a sculpture, expressing one of the following themes: cooperation, leadership, employee engagement, effective communication, positive behavior and trust. The other groups try to guess the exhibited concept.*
- Sharing anecdotes from the current workplace related to these themes.

Session 5: Respectful and peaceful communication

- Short presentation by the trainer on respectful and peaceful communication.
- Demonstrations of toxic language in the workplace using creative drama.
- Group activity: *In groups, employees complete the following sentences: "The most influential phrase I have heard on communication is ...", "I would trust my department colleagues more, if ...", "I would trust my leaders more, if ...", "I would trust my subordinates more, if ..."*

C.2 Snapshots of Online Workshops

Figure C.1: Session 1: Time-travel to the company's future



In randomly formed groups, participants described their imagined future workplace and list obstacles in achieving this ideal environment. Exact translations from Turkish.

Figure C.2: Session 2: Role-playing exercises

EMPLOYEES

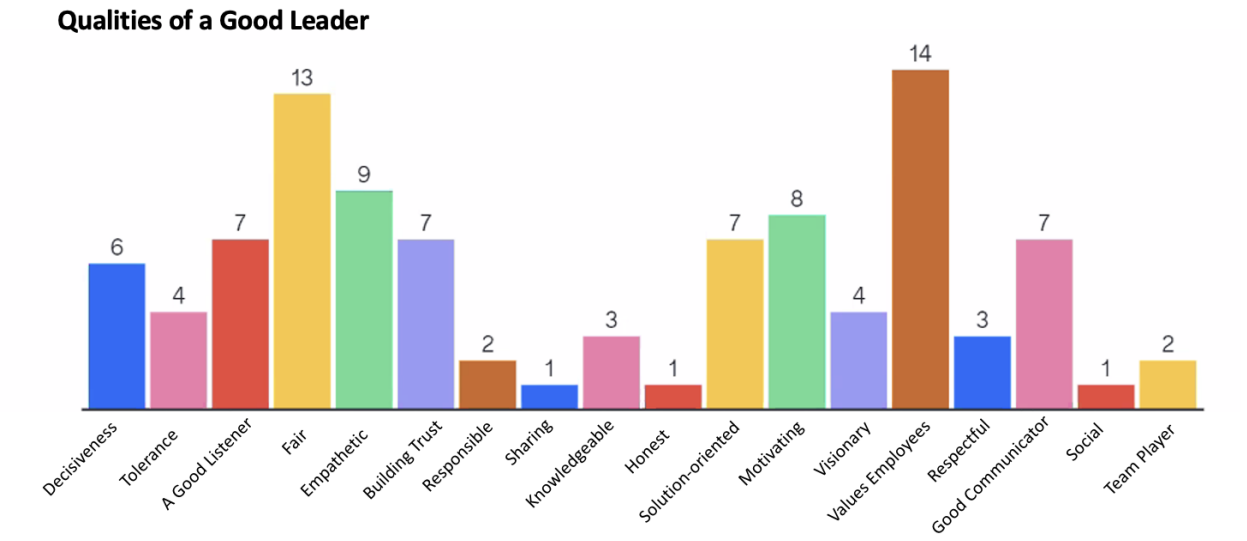
- Our work is neither appreciated nor rewarded.
- Performance criteria are not transparent.
- My team leader does not know me well enough, and does not consider my opinion.
- My team leader does not communicate my problems to senior management.
- My team leader is imprudent and constantly changes his/her mind.
- My team leader attributes mistakes arising from his/her own wrong decisions to his/her team, but takes credit for success.

LEADERS

- Lack of meritocracy.
- Employees are constantly spending time on their personal mobile phones (chatting, messaging, whatsapp'ing).
- Employees are constantly whining and are never satisfied.
- Employees are looking for sympathy rather than empathy.
- Employees are very opinionated.
- Employees demand very high pay.

In groups, participants assumed different roles as leaders and subordinates, and stated their complaints and expectations. Exact translations from Turkish.

Figure C.3: Session 3: Good leadership practices



In an interactive survey, participants ranked qualities that a good leader must possess. The bars represent the number of participants that voted for a given option. Exact translations from Turkish.

Figure C.4: Session 4: Relying on each other

C.3 Module 2: Follow-up Projects

Below we list a selection of the projects developed and proposed during the follow-up phase.

1. One-on-one meetings with leader: Receiving regular feedback from team leaders.

2. Supporting areas of development: A platform in which employees can demand training in areas of development leading to their professional goals.

3. Mentoring program: A program in which subordinates choose a leader-manager mentor whose expertise they trust and whom they feel comfortable working with. Subordinates will develop and lead their projects to success with their mentors.

4. Project evaluation committee: Setting up a project evaluation committee to which the employees can propose feasible projects they have developed to improve workplace climate.

5. Monthly inter-departmental visits: Each month, one employee from each department will visit another department for a full day. Visits will be exchanged between co-working departments with different functions. This project is aimed to improve inter-departmental communication and empathy through first-hand experience of each other's work processes.

Figure C.5: Presentations of follow-up projects by team representatives

D Experimental Instructions and Implementation of Games

D.1 Endline Games

You are going to play three games today. You will be able to earn a monetary reward in each game, which will be determined by your decision, luck, and, in some cases the decisions of your department colleagues. One of the games will be selected randomly at the end of the session, and you will be paid the monetary reward in that selected game. Therefore, it is important that you pay equal attention to each game. We will send your monetary rewards in a week in the form of grocery cards.

During the event, please make your own decisions without communicating with your colleagues. Your personal information and decisions in these games will be anonymous. You will log in with your unique ID number that was sent to you personally.

If your screen freezes or crashes, please refresh the page. If you cannot refresh the page, please log in again from the main website. You will continue where you left off. If you are ready, please press the Proceed button.

D.1.1 Ultimatum Game

Game 1

At the beginning of this game, groups of two will be randomly formed within your department, and you will not know who your partner is. One of you will randomly become the *Sender*; the other, the *Receiver*. You will not know what role you have been assigned to.

The *Sender* will have 200 Turkish Liras (TL), and he/she will choose how much of the 200 TL he/she wants to offer to his/her match, i.e., the *Receiver*. The *Receiver*, on the other hand, will evaluate the offer he received from the *Sender*, and decide whether to accept or reject the offer. If the *Receiver* accepts the offer, he/she will receive the offered amount. The *Sender* will receive the rest of 200 TL. If the *Receiver* does not accept the offer, both of you will receive 0 TL.

At the beginning of the game, everyone will decide how much of the 200 TL they want to offer if they are the *Sender*, and which offers they would accept if they are the *Receiver*. Then, the computer will randomly assign one person as the *Sender* and the other as the *Receiver*. The amount of the offer will be determined according to the decision of the *Sender*. We

will consider the *Receiver*'s decision to see if they would be willing to accept this offer. The payoffs will be determined by the decisions of the two matched persons in the same group.

Please indicate the amounts you would offer and accept for both the *Sender* and *Receiver* roles. Remember that, in this game, it is possible for you to be selected as a *Sender* or a *Receiver*. In addition, the amounts mentioned are actual monetary rewards. At the end of the games, if this game is selected, you will receive your payoff from this game. Please note that the amount you win from these games will be paid to you. Now, if you have understood clearly, please press the Proceed button and indicate your decisions.

D.1.2 Sabotage game

Game 2

In this game, we will first ask you to carry out a task that lasts two minutes, for which you will have a chance to earn money. You will be shown letter-number combinations of four characters. Please try to type the same combination in the space provided below, paying attention to capitalization. The more correct answers you give in two minutes, the higher your chances are of winning money.

At the end of two minutes, you will be randomly matched with a co-worker from within your department. You will not know who your match is, but you will see a representative picture. *(They were shown a representative avatar, indicating the gender of the randomly matched partner.)* If you can give more correct answers than your matched colleague, you will earn 150 TL; and 0 TL otherwise. At the end of the games, if this game is drawn, you will get your payoff from this particular game.

Now, we will ask you an additional question. At this stage, either you or your matched colleague will have the right to reduce the performance of the other person. This person will be determined randomly. You need to pay 10 TL in order to reduce the performance of your match by 1 correct answer. You will have 50 TL, which we will endow you with additionally, to be used only for this decision. We will then ask you how much of the 50 TL you would like to use to reduce your partner's performance. We will translate this amount to correct answers and deduct it from your partner's total correct answers. The amount you do not use for this decision (rest of the 50 TL) will remain in your pocket and will be paid to you at the end of the game. Your decision can change your performance ranking and therefore your earnings from the first stage. Please enter a number between 0 and 50 in the text box

provided.

Finally, you will try to guess how much your partner spent to reduce your correct answers. If your guess is within 10 TL of your partner's true decision, you will earn an extra 10 TL for your correct guess. Please enter a number between 0 and 50 in the text box provided.

D.1.3 Trust game

Game 3

In this game, groups of two within departments will be randomly formed, but you will be re-matched. As before, you will not know who your partner is. *(A randomly selected half of the participants were shown the following sentence, the others were shown nothing of the sort.)* **It is also possible that you are matched with your department leader!**

One of you will be the *Sender* and one of you the *Receiver*. The roles will be randomly determined by the computer. Each of you is initially endowed with 100 TL. The *Sender* will decide how much of his 100 TL he/she wants to send to the *Receiver*. He/she may choose to send nothing at all, all of his/her endowment, or some portion of it. The amount determined by the *Sender* will be tripled and sent to the *Receiver*. The *Receiver* will decide how much of this amount he/she wants to send back to the *Sender*. He/she may choose not to return at all, return all of the amount, or a portion of it. The exact amount returned by the *Receiver* will be forwarded to the *Sender*.

Payoffs will be computed in the following fashion. When computing the *Sender*'s payoff, we will deduct the amount he/she sent from the initial endowment 100 TL, and add the amount the *Receiver* sent back. The *Receiver*, on the other hand, will receive three times the amount sent by the *Sender*, in addition to the initial endowment of 100 TL, minus the amount he/she sends back to the *Sender*. In this game, you might be assigned to the role of the *Sender* or the *Receiver*, but you will not know your role.

First, we would like you to make the following decision: If you become the *Sender* in this game, how much of your 100 TL would you send to the *Receiver*? If you are randomly assigned to the role of *Sender* by the computer, this decision will be valid and your earnings will be determined with respect to this decision. Remember that, in this game, you might be selected as the *Sender* or the *Receiver*.

We now ask you to indicate your decision if you are chosen as a *Receiver*. For each

possible indicated amount the *Sender* may send you, you will choose how much you want to send back to him/her. If you are randomly selected to be a *Receiver*, your decisions will apply, and your earnings will be determined based on your decisions. Remember that, in this game, you might be selected as the *Sender* or the *Receiver*.

D.2 Baseline Games

You are going to play three games today. You will able to earn a monetary reward in each game, which will be determined by your decision, luck, and, in some cases, the decisions of your department colleagues. One of the games will be selected randomly at the end of the session, and you will be paid the monetary reward in that selected game. Therefore, it is important that you pay equal attention to each game. We will send your monetary rewards in a week in the form of grocery cards.

During the event, please make your own decisions without communicating with your colleagues. Your personal information and decisions in these games will be anonymous. You will log in with your unique ID number that was sent to you personally.

D.2.1 Competition Game

Game 1

This game consists of three periods. You will earn different amounts of monetary rewards in each period. If this game is randomly selected for payment at the end, one of the three periods will be selected randomly and you will receive your earnings from the selected period. Each period will last 2 minutes.

Period 1

In this period, you will be asked to calculate the sum of three two-digit numbers in 2 minutes. You will earn 3 TL for every correct answer you give. The more correct answers you give, the more you earn. You are not allowed to use pen and paper, nor a calculator. A new question will appear after you have submitted your answer. You will see the number of correct answers you have given on the screen. Please hit the Start button when ready.

26 + 36 + 53 =	

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Period 2

In this period, you will again be asked to sum 3 two-digit numbers. Groups of three will be randomly formed within your department. You will not know who your opponents are. Your payoffs in this period will be determined as follows:

- If you give more correct answers than your two department colleagues you are matched with, you will earn 9 TL for every correct answer.
- Otherwise (if you cannot give more correct answers than your opponents), you will earn 0 TL.

At the end of this period, you will be asked to guess your rank in your group. If your guess is correct, you will earn an extra 3 TL. Please hit the Start button when ready.

Period 3

You will perform the same summation task once again for two minutes. In this period, you will decide how your payoff is calculated: piece-rate (as in period 1) or tournament (as in period 2). If you pick tournament, your performance will be compared to your opponents' second-period performance. Please indicate your choice when ready.

D.2.2 Public Goods Game

Game 2

In this game, new groups of three will be randomly formed within your department. As before, you will not know who else is in your group. Each participant will be endowed with 30 TL. Using this endowment, you will have the chance to enter a project as a group. Each participant in the group will decide for himself/herself how much to contribute to the common pool (project), and each participant's decision will be confidential. Decisions will be made simultaneously.

You can contribute any amount between 0 and 30 to the common pool. Payoffs will be computed as follows:

- We will add up the total amount contributed by the three group members and double it. This will be your group's total income from the project.
- This amount will be shared equally between the three group members.

- Your payoff will equal to sum of the amount you get from the project and the remaining from your initial endowment 30 TL that you did not invest into the project. *(Display an example on the screen.)*

Please indicate how much of your 30 TL you would like to contribute to the project.

Finally, we will ask you to make a guess on the average contribution of the two other group members. If your guess is within 5 TL of the true average, you will earn an extra 10 TL. Please write down your guess.

D.2.3 Investment Game

Game 3

In this game, you will be asked to make an investment decision. You will be endowed with 30 TL from the start. You will decide how to allocate this 30 TL between a risky and a risk-free option. The money invested in the risky option has a 50% probability of either increasing by a multiple of 2.5, or being lost. The money invested in the risk-free option is always retained. Please indicate how much of the 30 TL you would invest in the risky option.

E Construction of Cohort Segregation Index

Consider two groups in a department. We first calculated the expected proportion of inter-group links based on the theoretical probability of randomly formed inter-group ties. Then we took the difference between these and the observed proportion of inter-group links. If all links were formed randomly, the number of links between group 1 and group 2 members would follow a hypergeometric distribution. Specifically, for a group 1 member who nominated $x \in \{1, 2, 3\}$ colleagues, the probability of forming $y \leq x$ links with group 2 members equals:

$$p_{g1}(x, y) = \frac{\binom{n_{g2}}{y}\binom{n_{g1}-1}{x-y}}{\binom{n_{g1}+n_{g2}-1}{x}},$$

where n_{g1} is the number of group 1 colleagues, and n_{g2} is the number of group 2 colleagues in a given department. The expression for $p_{g2}(x, y)$ is analogous to $p_{g1}(x, y)$.

Then, the probability of forming inter-group ties for department d under the assumption that links were formed at random can be expressed as:

$$\rho_d = \frac{\sum_{x=1}^{3}\sum_{y=1}^{x}\left[n_{g1}(x)p_{g1}(x, y)y + n_{g2}(x)p_{g2}(x, y)y\right]}{\sum_{x=1}^{3} x\left[n_{g1}(x) + n_{g2}(x)\right]},$$

where $n_{g1}(x)$ and $n_{g2}(x)$ denote, respectively, the number of group 1 and group 2 colleagues who nominated x colleagues. Then, the observed frequency of inter-group ties based on the actual nominations in department d is:

$$\tilde{\rho}_d = \frac{e_{g1g2} + e_{g2g1}}{e_{g2g1} + e_{g1g2} + e_{g2g2} + e_{g1g1}},$$

where e_{ij} denotes the number of edges from group members i to j. Our measure of group segregation GS_d in department d is:

$$GS_d = \rho_d - \tilde{\rho}_d.$$

Therefore, the definition of our segregation measure GS_d is such that higher numbers indicate higher segregation.

F Survey Items

Instrument	Items
Workplace Satisfaction	*To what extent do the following statements describe your thoughts about your company?*
	(Definitely not True-Not True-Somewhat True-True-Definitely True)
	I am not able to practice my own profession at this workplace.
	I am very pleased to have chosen to work at this company.
	Working in this company inspires me.
	I think my ideas are valued and my achievements are acknowledged here.
	Employees get unhappy here due to competition and individualization.
	I think I am not given enough initiative and decision-making authority here.
Meritocratic Values	*To what extent do the following statements describe your thoughts about your company?*
	(Definitely not True-Not True-Somewhat True-True-Definitely True)
	My chances of advancing in my profession and career are very high here.
	I believe if I work hard and perform well here, I will be promoted very quickly.
	I don't believe I'll be promoted unless I've enough connections with executives.
	Objective and transparent performance criteria are applied in this workplace.
Collegial Department	*The following statements are related to your department colleagues. Please use the following scale to state your opinion.*
	(Never-Rarely-Sometimes-Often-Always)
	My department colleagues protect each other against an outside criticism.
	Those working in this department only think of and work for themselves.
	Different ideas are discussed extensively within the department.
	Everyone's ideas are listened to and taken into consideration in our department.
	People attack others verbally and with disrespect during departmental meetings.
	Disputes within the department are resolved in a way that protects the interests of the company.
Behavioral Norms	*How often do you observe your department colleagues in the following situations?*
	(Never-Rarely-Sometimes-Often-Always)
	Gossiping
	Criticizing someone
	Helping someone
	Protecting someone else's rights
	Violating someone's rights
	Spending time on social media (during working hours on matters unrelated to work)
	Staying silent in situations of injustice
Prescriptive Norms	*In your opinion, what fraction of your department colleagues think in the following way?*
	(Almost nobody-Around 25% -Around 50%-Around 75% -Almost everybody)
	It is important to be friendly and treat others nicely.
	It is crucial to stay out of disputes and quarrels.
	It is normal to comment on others' appearance and clothing.
	It is normal to take credit for a department members success as a group.
	It is important to speak for our departments demands when needed.
	Gossiping is bad.
	We should claim collective responsibility for a group member's mistakes.
	It is crucial to trust and to be honest with each other within the department.
	It is normal and expected to compete with our department colleagues.
	It is quite normal to help each other with work.
Leader Professionalism	*The following statements are related to your your team leader. Please use the following scale to state your opinion.*
	(Never-Rarely-Sometimes-Often-Always)
	Our department leaders are good listeners.
	Our department leaders have favorites and they are given favorable treatment.
	Our department leader is modest and accepts her mistakes.
	I completely trust our department leader's professionalism.
	I receive regular and motivating feedback from my department leader.
	Our department leader claims achievements, but blames mistakes on others.
	Our department leaders serve the interests of department rather than their own.
	When we have a new idea, our department leader suggests leaving it to senior colleagues.
Leader Empathy	*The following statements are related to your your team leader. Please use the following scale to state your opinion.*
	(Never-Rarely-Sometimes-Often-Always)
	Our department leader tries to put himself in our place during disagreements.
	Our department leader intervenes when there is injustice.
	Our department leader listens my problems and approaches them understandingly.
	Our department leader takes sudden emotional decisions.
	Our department leader listens disagreements carefully and considers all angles.

Own Empathy	*To what extent do the following expressions describe you?*
	(Never-Rarely-Sometimes-Often-Always)
	Before criticizing someone, I try to think about how I would feel if I were them.
	If I am sure that I am right about something, I wouldn't waste too much time listening to other people's arguments.
	Sometimes I try to understand my friends better by imagining how things look from their perspective.
	I believe there are two sides to every problem and I try to see it from both perspectives.
	Sometimes I have a hard time seeing things from the other point of view.
	I try to see everybody's perspective, before I take a decision in a disagreement.
	When I get angry with someone, I usually try to put myself in their shoes for a while.
	When I see people being abused, I feel protective of them.
COVID-19 Related Social Isolation	*The following questions have been prepared to determine the effects of the current pandemic on us. Please pick the answer that suits you best.*
	(Strongly Disagree-Disagree-Somewhat Agree-Agree-Strongly Agree)
	I think working from home is more productive.
	Lately I feel lonelier than usual.
	I think I haven't been communicating well enough with my colleagues lately.
	I think I haven't been communicating well enough with my team leader lately.
	(Yes-No-Do not Drink/Smoke)
	Do you feel like you have increased your cigarette consumption lately?
	Do you feel like you have increased your alcohol consumption lately?