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Improving Workplace Climate in Large Corporations:

A Clustered Randomized Intervention*

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Abstract

We evaluate the impact of a program aiming at improving the workplace climate in corporations. The program is implemented via a clustered randomized design and evaluated with respect to the prevalence of support networks, antisocial behavior, perceived relational atmosphere, and turnover rate. We find that professionals 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 atmosphere. Treated firms have fewer socially isolated individuals and a lower employee turnover. The program's success in improving leader-subordinate relationships emerges as a likely mechanism to explain these results.

JEL Codes: C93, M14, M53

Keywords: Workplace climate; relational dynamics; leadership quality, RCT

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1 Introduction

Workplace climate, referring to the quality of the workplace and the relational atmosphere perceived by employees, is key to 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. At the individual level, these benefits span psychological well-being, employee engagement, and motivation, which ultimately reflect on performance (Ostroff, 1992; Judge et al., 2001; Srivastava et al., 2018; Guadalupe, Kinias and Schloderer, 2020). At the firm level, 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 large 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 the workplace relationships. Toxicity in relational dynamics in the workplace is typically characterized as antisocial and sometimes unethical behavior such as bullying, mobbing, gossiping, and slandering. 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 large corporations (Van den Steen, 2010; Inceoglu et al., 2018; Hoffman and Tadelis, 2021). This is, for instance, clearly indicated in the 2019 report of to 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

[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).

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

This paper evaluates one such action, a unique workplace improvement program, offered to white-collar professionals in large corporations in Turkey. The program aims to improve workplace climate and relational atmosphere by encouraging prosociality in professional relationships, focusing primarily on improving leader-subordinate relations. 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 recently launched a movement to change the toxic relational environment in 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 unique program using a sample of 20 large corporations operating in the energy, chemistry, defense, finance, construction, and textile sectors. Some of our participating corporations are multinationals operating in Turkey, all 20 of them are major players in their respective sectors, and 9 of them are publicly held[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 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 between Fall 2019 and Spring 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

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

in Summer 2021. The total number of professionals involved in the evaluation is over 2,300, 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 use 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 then elicited social networks to measure social isolation and social connectedness at the department level. For this, we asked all employees to nominate colleagues from whom they receive (i) professional (work-related) help and (ii) help 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. Because the program implementation and endline unintentionally coincided with the COVID-19 pandemic where many firms switched to working from home or made hybrid arrangements, we also measured pandemic-induced social isolation feelings at endline.

We 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 8%) than the professionals in the control firms. The program's effect on prosocial behavior is similar for subordinates and those in leadership positions.

We then show that the program is highly successful in improving perceived workplace quality and relational atmosphere within departments. We find that the program improved workplace satisfaction by 0.28 standard deviations and perceived meritocratic values by 0.25 standard deviations for the full sample. These improvements become stronger (0.35 and 0.31 standard deviations) when we restrict our sample to subordinates. We also estimate a large and statistically significant improvement in the perceived collegiality in treated departments (0.25 standard deviations). While positive, the estimated effects on descriptive and prescriptive behavioral 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.

At the departmental level, we find that the program lowers the proportion of socially isolated employees by about 50%. The program has a remarkable impact on within-department network density, almost doubling the network density index. We find that the program is also effective in easing the COVID-19 related social isolation feelings. We find that treated employees are 6 percentage points less likely to report losing connection with their leaders during the pandemic, representing a 16% decline relative to the control group. The program also has a substantial impact on the firms' turnover rate with no impact on promotions. The proportion of employees who quit their jobs within the implementation period is quite low due to the firing ban imposed by the Turkish government during the pandemic. Only 5% of employees in control firms left their firms within this period, and we find that the intervention almost entirely eliminated these voluntary quits.

We show that the program's positive effects likely stem from its success in improving leader-subordinate relationships. We find that the treated subordinates report 0.25 standard deviations higher professionalism and 0.28 standard deviations higher empathy of their leaders. Consistent with these results, treated employees are also 10 percentage points more likely to nominate their leader as their primary professional help provider, representing a 16% increase relative to the control group. Overall, our results suggest that a targeted intensive training program that focuses on prosociality in professional interactions can improve the relational atmosphere in large and highly competitive corporations. Our results also suggest that changing the behavior of leaders of all ranks is key to improving subordinates' perceived workplace quality and departmental collegiality.

Our paper offers two main contributions. First, we conduct the first clustered randomized controlled trial targeting relational culture in large corporations. We provide rigorous evidence on the effectiveness of an innovative training program, focusing exclusively on improving the quality of professional interactions in highly competitive corporations.[4] The second contribution pertains to the toolkit we use to evaluate this program. We designed a rich inventory to measure outcomes that characterize the workplace climate in a firm. We

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

collect previously unavailable data from a large number of corporate professionals across different firms and sectors and use them as outcomes to evaluate a unique training 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 and highly focused interventions can go a long way to build a more positive relational environment in workplaces and eliminate antisocial interactions.

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 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

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

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 looking for another job. We followed this up and conducted a more formal qualitative study to gain a deeper understanding of these relational issues and how they affect these highly-educated professionals. For this, 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 professionals placed "toxic relationships and antisocial behavior" in the top 3 problems they face (faced). About 47% placed "difficult leaders", 43% 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

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

Online Appendix E; See Figure E.1.

Motivated by these results, we reached out to 30 large corporations operating in defense, chemistry, energy, finance, construction, and textile sectors in Turkey. We enlisted 20 of them to implement a workplace improvement program.[7] 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 is a significant player in its sector in terms of market share and has centralized and transparent HR practices. 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 was 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 program was offered only to the employees working in company headquarters. The participation in the study was voluntary and about 71% of white-collar employees in company headquarters signed up for the study, with 69% and 73% in treatment and control firms, respectively. 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 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 (often several times), 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 individ-

[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.

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

ual consents.[9] We first played incentivized games to elicit social and economic preferences (lab-in-the-field experiments). Then, we conducted three major 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, using different meeting rooms. Participants used their smartphones to enter into 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 right after the baseline (in Fall 2019). This plan was disrupted by the COVID-19 pandemic. After waiting until Fall 2020, in hope 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. We collected endline data from 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. Because many new professionals joined the firms between our initial baseline and Fall 2020, we had to re-do the baseline for newcomers (demographics and cognition tests) before implementing the program. Figure 1 provides the timeline of the trial. In what follows, we provide information on the content of the program.

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

[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.

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 to conduct a randomized evaluation of their training program and agreed to provide training to all 20 firms within a schedule that we determined.

The training program focuses on the following themes: 1) Effective communication with colleagues, subordinates, and leaders, by exerting deliberate effort to eliminate toxic and condescending language. 2) Teamwork and cooperation. 3) Understanding the others' points of view and tolerating the differences in opinions. 4) 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. We define the term "leader" broadly in this study. In our study, anybody who is responsible for leading a group of professionals is considered a leader. Since most corporations have a hierarchical management structure, our leaders have leaders, too.

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 are randomly allocated to groups mixed in terms of departments and rank. In one session, group activities include 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 involve 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.

[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.

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 "prosociality" project. The core theme of these projects was "teamwork and cooperation using professional and peaceful language." 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 collecting feedback from their colleagues. 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. Note also that the team leaders were also heavily involved in this process, often as project team members. All groups, in the end, presented their projects to each other and to their higher executives (CEOs, CFOs and COOs) in the presence of the implementing partner. See Appendix B for more information on the module's content and some snapshots of actual training sessions. There, we also provide some exemplary projects developed by some participants. About 38% of the professionals in treated headquarters took part in the training program, 53% of the leaders, and 35% of subordinates. Figure 2 presents the evaluation design and how we estimate intention to treat effects in visual clarity.

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 leader-subordinate relations, will improve social skills, workplace climate, and relational dynamics through improving leadership quality from the perspective of subordinates. We also expect a decline in the employee turnover rate. 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 3. In the next section, we will explain in detail how we measure these indicators using a comprehensive toolkit.

3 Outcomes

We used four measurement tools to evaluate the program. The first of these was a set of incentivized games to measure social skills. The second comprised standard item-response survey questions to construct measures of perceived workplace quality and relational atmosphere. Our third tool was a template to elicit social (support) networks within firms. Finally, we had access to administrative data on turnover and promotions covering the program's implementation period. In what follows, we will explain each of these tools and how we used them to construct our outcomes.

3.1 Experimental Outcomes: Prosocial and Antisocial Behavior

We played several incentivized games to measure individual and social skills. At baseline, we elicited risk aversion, competitiveness, and cooperation between department colleagues. We explain these games in the Online Appendix C. At endline, we gave the participants three new incentivized games to measure prosocial and antisocial behavior. Specifically, we programmed 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 also 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 as a gift card from a major supermarket chain in Turkey, mailed to the participants one week after the session. We exercised utmost care in making sure that the participants' anonymity was preserved and companies could not learn about employees' choices, behavior, and outcomes.

3.1.1 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 a hostile 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) 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 (about 20 US dollars) 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 antisocial behavior, i.e., to decrease the amount of sabotage endowment used.[12]

3.1.2 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

[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).

of the money they had received they wanted to send back to their anonymous colleague. 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.

3.1.3 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.

[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)).

3.2 Workplace Climate: Perceived Workplace Quality and Relational Atmosphere

We measured workplace climate 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 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 descriptive 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. 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, which we explain in the next subsection, 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 D.

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. We are particularly interested in professional support that flows from leaders to subordinates and from more experienced employees to the less experienced ones. To elicit networks, we asked each participant to list up to three of their colleagues in the firm, not necessarily in their department, from whom they received regular professional help in work-related matters. Then, we asked them to list up to three colleagues from whom they received regular help in personal matters. 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 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 constructed three department-level outcomes that we expected the treatment to influence: (i) the proportion of isolated individuals in the department, (ii) department network density, and (iii) cohort segregation. We constructed 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. 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. The cohort segregation index is constructed following Schelling (1969). 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:

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

In this study, we are interested in cohort segregation. We define the groups as millennial and younger cohort (below 40) vs. 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. We expect the treatment to lower the proportion of isolated individuals and cohort segregation and to increase department network density.[14]

3.4 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, and it is plausible that these effects were felt differently across firms and possibly across employees within firms. About 15% of our companies imposed a "work at home" mandate, and 40% adopted a hybrid mode where they diluted the number of employees in workspaces based on a rotating schedule. These corporate-level choices were made before the program implementation. Therefore, they are independent of the firms' treatment status (joint p-value for pandemic working mode is 0.58). Overall, the experiences

[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).

of pandemic-related changes are likely to diminish working people's morale and increase the feelings of isolation.

Given that the pandemic changed the context in which we executed this study, we decided that it would be informative to assess the effect of our training program on the psychological well-being of the employees. Because the program was highly interactive, including a monitored follow-up that enforces teamwork, we conjectured that it would help employees to 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 explicit reference to the pandemic. In particular, we asked respondents whether they (i) think working at home is more enjoyable than working 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, we conjectured that, by connecting colleagues and leaders in these difficult times via an interactive training platform, the program would help employees to cope with social isolation imposed by the pandemic response measures.

3.5 Employee Turnover and Promotion

We requested and were granted access to administrative records of quits and promotions within the implementation period (November 2020) up until 1 July 2021. The reason for this end date is that the government of Turkey imposed a nationwide ban on dismissing employees at the beginning of the pandemic. This ban has been lifted on 1 July 2021. Therefore, throughout our implementation and endline period, employee turnover refers to voluntary job separations and retirement decisions, which we believe is of primary relevance to our study. While we do not have a priori conjecture regarding the program's effect on promotions, we expect the program to lower the propensity to quit.

4 Results

4.1 Internal Validity

We collected our baseline data in Fall 2019 by visiting the headquarters of all firms in person. 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 new employees had joined the firms and expressed their willingness to participate in the program, both in treatment and control firms. We conducted swift baseline data collection for these new employees, a shorter version of our initial baseline, before the implementation. These new employees comprise 41% of our evaluation sample and their distribution across treatment status is balanced (p-value=0.61). Our attrition rate, calculated based on those who were at baseline, but not at endline, is about 22%, and this attrition is balanced across treatment status (p-value=0.87). Note that we measured this attrition before the program implementation, so it is entirely unrelated to the treatment. Table 1 presents all variables in our data. Columns indicate whether they were collected at baseline in Fall 2019, baseline in Fall 2020, and endline.

We collected data on individual characteristics, including demographics, education, and tenure. At baseline, we implemented two cognitive tests, as we believe they are predictive of the outcomes concerned in this study. These are (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 show our initial baseline balance, first using Fall 2019 data, then restricting Fall 2019 data to those present both at baseline and endline. We also provide the balance checks of baseline 2020. Table 2 presents the balance of the unrestricted baseline sample. 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 over 30 variables to check our randomization balance and, as can be seen in the table, we observe no imbalance in individual-level outcomes. However, we observe some imbalance in department-level outcomes. These are (i) the department-level isolation measure for professional networks and (ii) department density, all significant at the 10% level. The variable turnover refers to the department level turnover rate between 1 January and 1 November 2019. The presented firm sizes give the number of white-collar employees in the firm and that of white collar-employees in the headquarters, both in logs. The participation rate refers to the proportion of invited employees who signed up for the study within the chosen location. Note that this participation figure is slightly higher (78%) than reported in Figure 2, which is 71%, because Table 2 considers participants at baseline only.

Tables A.1 and A.2 in the Online Appendix A present the balance for the restricted Fall 2019 sample, and the Fall 2020 sample (short baseline), respectively. Because we conducted our analyses separately for subordinates and leaders as well, we provide balance within these subgroups in the Online Appendix A, Table A.3.

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 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, firm f that are potentially predictive of the outcome y. These include age, gender, marital status, number of children, and baseline cognitive and sociocognitive skills (Raven's score and Eyes test score). We also control for department and firm size. δ_s indicates strata (sector) fixed effects. We also provide all our main results without covariates in the Online Appendix A.

Recall that 38% of all participating professionals took part in the training program, 53% of the leaders, and 35% of subordinates. Therefore, the estimated $\hat{\alpha}_1$ should be considered as the intent-to-treat effect (ITT); see 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 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.7 in the Online Appendix A.

4.3 Treatment Effect on Prosocial and Antisocial Behavior

Table 3 presents the estimated treatment effects on experimentally elicited social skills. Panel I presents the effects on the full sample, panel II the effects on the subordinates, and panel III the effects on the leaders. Note first that about 23TL of 50TL sabotage endowment was used on average to destroy an opponent's performance in the control group. Employees in the treatment firms spent on average 2.70TL less for sabotage activity, and this 12% effect is statistically significant at the 1% level. The effects for subordinates and leaders are similar: 11% for subordinates and 18% for leaders. We do not detect any statistically different effect in this outcome across the two groups (p-value=0.39).

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 3 percentage points (about 8%) 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 does not reach statistical significance for the leaders, although we cannot reject the equality of coefficient estimates across the two groups (p-value=0.54).

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, an we reject the equality across the two groups (p-value=0.08). We find no effect on the minimum acceptable offer, neither for the full sample nor for the subgroups.

4.4 Treatment Effect on Workplace Climate

Table 4 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 full 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 0.28 standard deviations higher workplace satisfaction and 0.25 standard deviations higher meritocratic values. In terms of the relational atmosphere, treated professionals report 0.25 standard deviations higher collegial behavior in their department, 0.12 and 0.18 standard deviations better behavioral and prescriptive norms, although the last two effects do not reach statistical significance. The results on the subordinates are even stronger. Here, we estimate 0.35 standard deviations higher workplace satisfaction and 0.31 standard deviation higher meritocratic values in the treatment group, both significant at the 1% level. We also estimate 0.28 standard deviations higher collegial behavior, and again, despite being positive, the effects on behavioral and prescriptive norms do not reach statistical significance 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, and collegial department measures.

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 and did not nominate a colleague in a given category), 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.[15] Table 5 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 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.

Looking at Panel I, first, we note that, on average, 10% (20%) of employees report that they do not receive professional (personal) help from anyone in their firm. While we estimate a 3 (5) percentage points decline in professional and personal isolation in treated departments, these effects are statistically weak. However, looking only at the subordinates, we see large and statistically significant treatment effects on the proportion of isolated employees. The effect sizes are large. We estimate a 57% reduction for professional isolation and a 50% reduction for personal isolation. Consistent with isolation results, we estimate a significant increase in departmental network density measures for professional and personal networks. These effects are also substantial, with treatment essentially doubling the network density index in both cases. We do not estimate a treatment effect on cohort segregation, neither for the full sample nor for the subordinate sample.

[15]This is because most departments have only one or two leaders. However, we do estimate the effect of the intervention on isolation, using the leader sample, and find no significant effect.

4.6 Treatment Effect on COVID-19-induced Feelings of Isolation

Figure 4 presents the estimated treatment effects on our five COVID-19 related outcomes for the entire sample as well as for the subgroups. Employees in treated firms are 6 percentage points less likely to desire to work at home and this difference is statistically significant. This result is fully consistent with our workplace climate results. What is striking here is that employees in treated firms are 6 percentage points less likely to report losing connection with their leaders during the pandemic. The point estimate is the same for subordinates and leaders, although it is only significant for the former, but does not reach statistical significance for the latter, perhaps for power reasons. We find no evidence of loss of connection to colleagues, neither for subordinates nor leaders. We also estimate null effects on feeling lonely and on the probability of increasing alcohol and cigarette consumption.

4.7 Treatment Effect on Turnover and Promotion

In Summer 2021, we received information on whether an employee had quit their job at the firm. We also received information on whether an employee had got promoted within the firm. It is important to note that we conducted our study when employee turnover was unusually low due to the government-imposed firing ban, which was lifted on 1 July 2021. Therefore, our data on turnover reflects quits and possibly retirements only. Table 6 presents the treatment effect on the probability of quitting between the start of the program implementation (November 2020) and July 1, 2021. Not surprisingly, the proportion of employees who quit their jobs within this period is quite low in the control group (about 5%), relative to the 2019 baseline turnover rate of 13.8% presented in Table 2. We estimate a substantial decline in this important outcome. Employees in treated firms are about 5 percentage points less likely to quit their jobs in this period, meaning that the intervention virtually eliminated voluntary resignations during this period. Our estimates are similar for subordinates and leaders. We do not estimate any effect on employees' promotion probabilities for subordinates or leaders.

Because we have turnover and promotion data on all headquarter employees, we can also investigate whether the treatment effects on quits and promotions spilled over to nonparticipants. As can be seen in Panel IV of Table 6, we find no evidence of spillover effects of the treatment on nonparticipants. One reason for this could be that the most non-participation was at the departmental level. Recall that 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 all training activities targeted departmental relationships and were implemented at the department level, the likelihood of spillovers from participants to nonparticipants was expected to be low by design.

4.8 Heterogeneity in Treatment Effects

All in all, it appears that the program was remarkably successful in improving the social skills of both subordinates and their leaders. It also significantly improved perceived workplace climate and relational indicators for the subordinates. The program also had a strong positive effect on the network structure within departments, particularly on social isolation and, relatedly, on network density, consistent with the workplace climate and relational dynamics results. The program also significantly lowered employee turnover.

Besides the subgroups we examine above, 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 and 8 present our full sample results for employees with immediate male leader and female leader. While we estimate no significant heterogeneity in this dimension (expect for the reciprocity effect being stronger under female leaders), we estimate significant heterogeneity of the climate and relationships indicators. As can be seen in Table 8, the effects on workplace satisfaction and meritocratic values are much larger for employees with female leaders. Interestingly, however, while treated employees under male leaders are less likely to prefer to work at home and feel more connected to their leaders, these effects are null for those under female leaders; see Figure 5. In terms of turnover and promotions, we detect no difference in treatment effects between male and female leaders (see Table 9). We also explored whether the effects are different for male and female employees, and we did not find any noteworthy systematic differences; see Tables 10, 11, 12 and Figure 6. We provide further results in the Online Appendix A.

5 Potential Mechanisms

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 improving 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.

Figures 7 and 8 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 all our treatment effect estimations. In both figures, the relationships are unambiguously positive. The higher the leader professionalism (empathy), the better the perceived workplace quality and relational dynamics in the department. While only representing correlations, these positive associations set the stage for our mechanism explorations. If the program's positive effects on prosocial behaviors and workplace climate indicators stem from improving leader-subordinate relationships, we must see significant treatment effects in reported leader quality by the employees.

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 generate binary indicators of whether a participant nominated her leader as a professional and personal help provider. We consider nominating one's leader as a professional and personal support provider to indicate high-quality leadership.

Figure 9 plots the estimated treatment effects on leader professionalism, leader empathy, whether the employee nominated their leader as a professional and personal help provider 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 0.23 and 0.25 standard deviations, respectively, for the full sample. The point estimates are similar for the subordinate sample and positive, but not significant, for the leader sample. Consistent with this, we estimate that treated professionals are about 5 percentage points more likely to nominate their leaders as a professional help provider, and this value is 10

percentage points for the subordinate sample. We find no statistically significant effect on the probability of nominating leaders as personal help providers.

Interestingly, we estimate negative treatment effects on nominations for the leader sample. The treated leaders are 16 (14) percentage points less likely to nominate their leaders as professional (personal) help 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 16 and 7 percentage points, respectively. These effects are statistically significant at 5 and 10 percent levels, respectively. We also find suggestive evidence that the negative treatment effects we report in Figure 9 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 help provider is 36 percentage points lower than the same probability in the control if the upper-level leaders did not participate in the program. We find no difference between treatment and control in this respect if the upper-level leaders did participate in the program. All these findings further support our claim that the program generated its positive effects by significantly strengthening leader-subordinate bonds[16].

While we conjecture that the main mechanism may be through changes in leader-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 9, 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.

[16]The participation rate of the leaders of leaders is about 57% and balanced across treatment status (p-value=0.87)

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 evaluated 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: Surveys, Tests, and Incentivized Games at Baseline and Endline

Measure	Baseline, Fall 2019	Baseline, Fall 2020	Endline, Summer 2021
Demographics	✓	✓	✗
Raven Test	✓	✓	✗
Eyes Test	✓	✓	✗
Risk Tolerance	✓	✗	✗
Competitiveness	✓	✗	✗
Cooperation (Public Good)	✓	✗	✗
Sabotage (Sabotage Game)	✗	✗	✓
Trust and Reciprocity	✗	✗	✓
Fairness (Ultimatum Game)	✗	✗	✓
Workplace Satisfaction	✓	✗	✓
Meritocratic Values	✓	✗	✓
Collegial Department	✓	✗	✓
Behavioral Norms	✗	✗	✓
Prescriptive Norms	✗	✗	✓
Leader Quality	✓	✗	✓
Social Networks	✓	✗	✓
COVID-19-related Social Isolation	✗	✗	✓
Turnover	✗	✗	✓
Promotion	✗	✗	✓

The table indicates whether the respective variable or variables used for constructing the respective index were collected at (i) baseline (Fall 2019), (ii) baseline (Fall 2020), and (iii) endline (Summer 2021).

Table 2: Balance (Full Baseline Sample)

Panel I: Individual Characteristics

	Control Mean	Treatment Mean	P-value of Difference
Male	0.63	0.58	0.23
Age	36.15	35.97	0.56
Married	0.69	0.63	0.15
Tenure (yearly)	7.56	7.89	0.59
Leader Age	42.51	42.42	0.89
Under Male Leader	0.75	0.72	0.35
Holding Leadership Position	0.18	0.19	0.12
Raven Score	0.00	0.07	0.87
Eyes Score	-0.00	-0.22	0.29
Risk	0.00	-0.02	0.15
Choice of Tournament over Piece Rate	0.50	0.49	0.75
Contribution in Public Goods	-0.00	0.07	0.45
Workplace Satisfaction	-0.00	0.14	0.17
Collegial Department	-0.00	-0.10	0.38
Meritocratic Values	0.00	0.09	0.11
Behavioral Norms	-0.00	0.00	0.54
Prescriptive Norms	-0.00	0.02	0.52
Leader Quality	-0.00	-0.00	0.54
Nominated Leader as Professional Help	0.52	0.59	0.27
Nominated Leader as Personal Help	0.41	0.43	0.43

Panel II: Department Characteristics

Log Department Size	3.13	2.67	0.12
Male Share	0.70	0.63	0.31
Proportion of Isolated Nodes (Professional Network)	0.13	0.18	0.08*
Proportion of Isolated Nodes (Personal Network)	0.08	0.14	0.11
Cohort Segregation Coefficient (Professional Network)	0.01	-0.02	0.12
Cohort Segregation Coefficient (Personal Network)	0.05	0.02	0.11
Density of the Department (Personal Network)	0.04	0.06	0.07*
Density of the Department (Professional Network)	0.03	0.05	0.08*
Turnover	13.81	15.18	0.73

Panel III: Firm Characteristics

Log of Firm Size	6.60	6.27	0.78
Log of Firm Size (Headquarters)	5.28	5.05	0.54
Participation Rate	0.77	0.77	0.85

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 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 3: Treatment Effects on Experimentally Elicited Social Skills

Panel I: Full sample	Sabotage	Trust	Reciprocity	Ultimatum Offer	Min. Accepted
Treatment	-2.70***	-0.00	0.03***	2.81	-1.55
	(0.43)	(1.52)	(0.01)	(2.29)	(1.57)
Wild Bootstrap P-value	0.00	1.00	0.02	0.31	0.39
Control Mean	23.13	52.15	0.37	101.15	101.15
N	2233	2233	2233	2233	2233
Panel II: Subordinates only					
Treatment	-2.56***	-1.01	0.04**	2.02	-2.54
	(0.51)	(1.36)	(0.01)	(2.46)	(1.78)
Wild Bootstrap P-value	0.00	0.61	0.01	0.51	0.29
Control Mean	22.58	51.56	0.36	101.16	101.16
N	1825	1825	1825	1825	1825
Panel III: Leaders only					
Treatment	-4.60**	2.32	0.02	5.60***	3.15
	(2.16)	(2.55)	(0.02)	(1.85)	(4.40)
Wild Bootstrap P-value	0.18	0.45	0.43	0.01	0.60
Subordinate = Leader	0.39	0.11	0.54	0.08	0.24
Control Mean	25.66	54.87	0.41	101.06	101.06
N	408	408	408	408	408

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, 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 4: Treatment Effects on Workplace Climate

Panel I: Full sample	Workplace Quality		Relational Atmosphere		
	Workplace S.	Meritocratic Values	Collegial Dept.	Behavioral Norms	Prescriptive Norms
Treatment	0.28**	0.25**	0.25**	0.12	0.18
	(0.11)	(0.11)	(0.10)	(0.10)	(0.11)
Wild Bootstrap P-value	0.04	0.09	0.07	0.36	0.24
Control Mean (Normalized)	-0.00	-0.00	0.00	-0.00	0.00
N	2155	2155	2194	2183	2174
Panel II: Subordinates only					
Treatment	0.35***	0.31***	0.28***	0.13	0.21*
	(0.10)	(0.10)	(0.09)	(0.09)	(0.11)
Wild Bootstrap P-value	0.01	0.02	0.03	0.27	0.14
Control Mean (Normalized)	-0.06	-0.06	-0.03	0.00	-0.03
N	1757	1757	1789	1781	1774
Panel III: Leaders only					
Treatment	-0.03	-0.01	0.10	0.06	0.03
	(0.16)	(0.13)	(0.13)	(0.13)	(0.14)
Wild Bootstrap P-value	0.90	0.97	0.55	0.77	0.89
Subordinate = Leader	0.00	0.00	0.04	0.37	0.08
Control Mean (Normalized)	0.26	0.26	0.15	-0.00	0.15
N	398	398	405	402	400

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, 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 5: Treatment Effects on Department Network Structure

Panel I: Full sample	Proportion Isolated		Department Density		Cohort Segregation	
	Professional H.	Personal H.	Professional H.	Personal H.	Professional H.	Personal H.
Treatment	-0.03	-0.05*	0.04**	0.04**	-0.00	0.03
	(0.03)	(0.03)	(0.02)	(0.01)	(0.03)	(0.03)
Wild Bootstrap P-value	0.58	0.17	0.07	0.08	0.93	0.41
Control Mean	0.10	0.20	0.05	0.04	0.04	0.03
N	163	163	156	153	110	111
Panel II: Subordinates only						
Treatment	-0.04*	-0.06***	0.04**	0.04**	0.02	0.07
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)
Wild Bootstrap P-value	0.18	0.02	0.10	0.08	0.58	0.25
Control Mean	0.07	0.12	0.04	0.03	0.06	0.07
N	161	161	156	153	108	108

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, the share of males in the department and sector dummies. Standard errors are clustered at the firm level (unit of randomization).

Table 6: Treatment Effects on the Probability of Quitting and Promotion

Panel I: Full sample	Probability of Quitting	Probability of Promotion
Treatment	-0.05***	-0.00
	(0.01)	(0.02)
Wild Bootstrap P-value	0.01	0.97
Control Mean	0.05	0.07
N	2326	2326
Panel II: Subordinates only		
Treatment	-0.05***	-0.01
	(0.01)	(0.03)
Wild Bootstrap P-value	0.02	0.84
Control Mean	0.06	0.07
N	1901	1901
Panel III: Leaders only		
Treatment	-0.05*	0.03
	(0.03)	(0.03)
Wild Bootstrap P-value	0.05	0.42
Subordinate = Leader	0.86	0.39
Control Mean	0.05	0.07
N	425	425
Panel IV: Non-participant sample		
Treatment	-0.01	0.04*
	(0.02)	(0.02)
Wild Bootstrap P-value	0.75	0.33
Control Mean	0.07	0.03
N	1173	1173

Reported estimates are obtained from ordinary least squares (OLS) regressions. 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, department size, the share of males in the department, firm size and sector dummies. Non-participant sample regressions control for gender, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization).

Table 7: Heterogeneous Treatment Effects on Social Skills: Leader Gender

Panel I: Have Male Leader	Sabotage	Trust	Reciprocity	Ultimatum Offer	Min. Accepted
Treatment	-3.24***	-0.62	0.03**	3.58	-0.87
	(0.49)	(1.60)	(0.01)	(2.53)	(2.15)
Wild Bootstrap P-value	0.00	0.75	0.04	0.28	0.72
Control Mean	23.65	53.05	0.38	101.04	101.04
N	1689	1689	1689	1689	1689
Panel II: Have Female Leader					
Treatment	-2.98*	-0.83	0.09***	-1.39	-4.89
	(1.61)	(2.08)	(0.01)	(3.05)	(4.30)
Wild Bootstrap P-value	0.10	0.70	0.00	0.69	0.35
Male leader = Female leader	0.88	0.92	0.00	0.17	0.48
Control Mean	21.85	50.67	0.33	105.16	105.16
N	421	421	421	421	421

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, 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 8: Heterogeneous Treatment Effects on Workplace Climate: Leader Gender

Panel I: Have Male Leader	Workplace Quality		Relational Atmosphere		
	Workplace S.	Meritocratic Values	Collegial Dept.	Behavioral Norms	Prescriptive Norms
Treatment	0.22*	0.19*	0.21**	0.11	0.16
	(0.11)	(0.10)	(0.10)	(0.10)	(0.10)
Wild Bootstrap P-value	0.12	0.14	0.13	0.41	0.23
Control Mean (Normalized)	0.04	0.02	0.04	0.00	0.01
N	1729	1729	1761	1753	1744
Panel II: Have Female Leader					
Treatment	0.59***	0.53**	0.46**	0.13	0.27
	(0.21)	(0.19)	(0.21)	(0.14)	(0.19)
Wild Bootstrap P-value	0.12	0.14	0.14	0.41	0.32
Male leader = Female leader	0.02	0.03	0.17	0.89	0.43
Control Mean (Normalized)	-0.20	-0.11	-0.20	-0.00	-0.06
N	426	426	433	430	430

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, 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 9: Heterogeneous Treatment Effects on Probability of Quitting and Promotion: Leader Gender

Panel I: Have Male Leader	Probability of Quitting	Probability of Promotion
Treatment	-0.04**	0.01
	(0.02)	(0.02)
Wild Bootstrap P-value	0.06	0.61
Control Mean	0.05	0.07
N	1766	1766
Panel II: Have Female Leader		
Treatment	-0.04**	0.04*
	(0.01)	(0.02)
Wild Bootstrap P-value	0.05	0.22
Male leader = Female leader	0.90	0.21
Control Mean	0.08	0.07
N	436	436

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, 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 10: Heterogeneous Treatment Effects on Social Skills: Gender

Panel I: Male only	Sabotage	Trust	Reciprocity	Ultimatum Offer	Min. Accepted
Treatment	-3.79***	1.53	0.03**	5.86**	0.97
	(0.68)	(1.26)	(0.01)	(2.26)	(2.20)
Wild Bootstrap P-value	0.00	0.39	0.05	0.05	0.74
Control Mean	23.95	53.90	0.39	100.00	100.00
N	1564	1564	1564	1564	1564
Panel II: Female only					
Treatment	-1.36	-3.21	0.05*	-4.00	-6.50*
	(1.22)	(3.48)	(0.02)	(4.41)	(3.68)
Wild Bootstrap P-value	0.36	0.55	0.09	0.56	0.16
Male = Female	0.14	0.14	0.35	0.05	0.07
Control Mean	20.95	47.51	0.33	104.16	104.16
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, 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 11: Heterogeneous Treatment Effects on Workplace Climate: Gender

Panel I: Male Only	Workplace Quality		Relational Atmosphere		
	Workplace S.	Meritocratic Values	Collegial Dept.	Behavioral Norms	Prescriptive Norms
Treatment	0.24**	0.21*	0.21**	0.09	0.11
	(0.11)	(0.10)	(0.09)	(0.09)	(0.08)
Wild Bootstrap P-value	0.10	0.12	0.10	0.42	0.29
Control Mean (Normalized)	0.05	0.03	0.05	-0.00	0.08
N	1516	1516	1547	1538	1530
Panel II: Female Only					
Treatment	0.31*	0.26	0.30	0.17	0.27
	(0.17)	(0.17)	(0.21)	(0.21)	(0.23)
Wild Bootstrap P-value	0.19	0.27	0.31	0.56	0.42
Male = Female	0.59	0.76	0.64	0.68	0.39
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, 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 12: Heterogeneous Treatment Effects on Probability of Quitting and Promotion: Gender

Panel I: Male Only	Probability of Quitting	Probability of Promotion
Treatment	-0.05***	0.01
	(0.01)	(0.02)
Wild Bootstrap P-value	0.01	0.70
Control Mean	0.05	0.06
N	1646	1646
Panel II: Female Only		
Treatment	-0.05***	-0.03
	(0.02)	(0.02)
Wild Bootstrap P-value	0.02	0.39
Male = Female	0.66	0.09
Control Mean	0.07	0.07
N	680	680

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, 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).

8 Figures

Figure 1: Timeline of the Trial

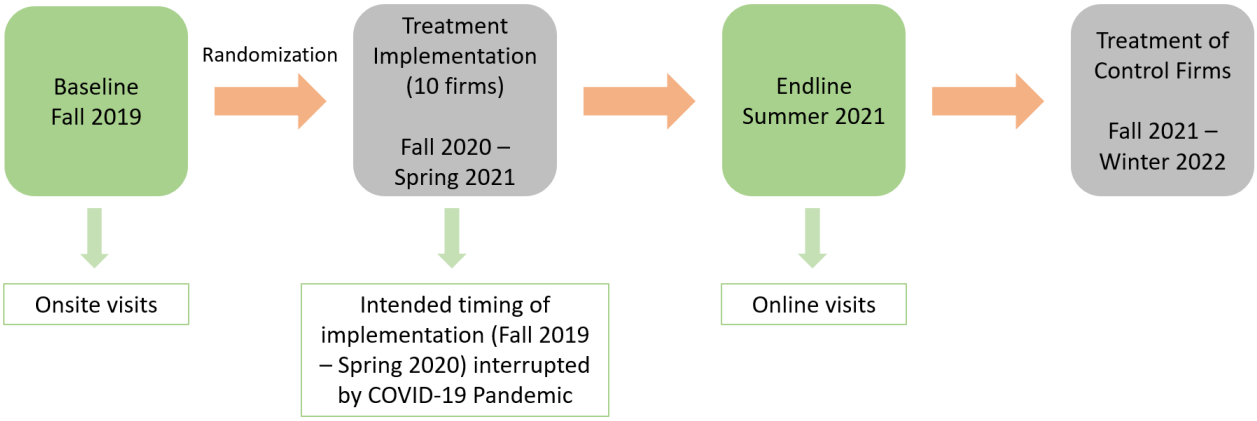

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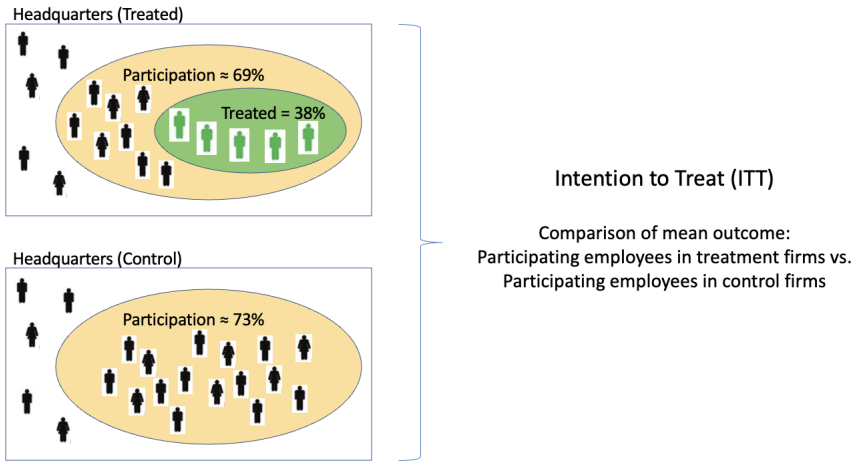
Figure 2: Evaluation Design: ITT



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: Depicted Theory of Change

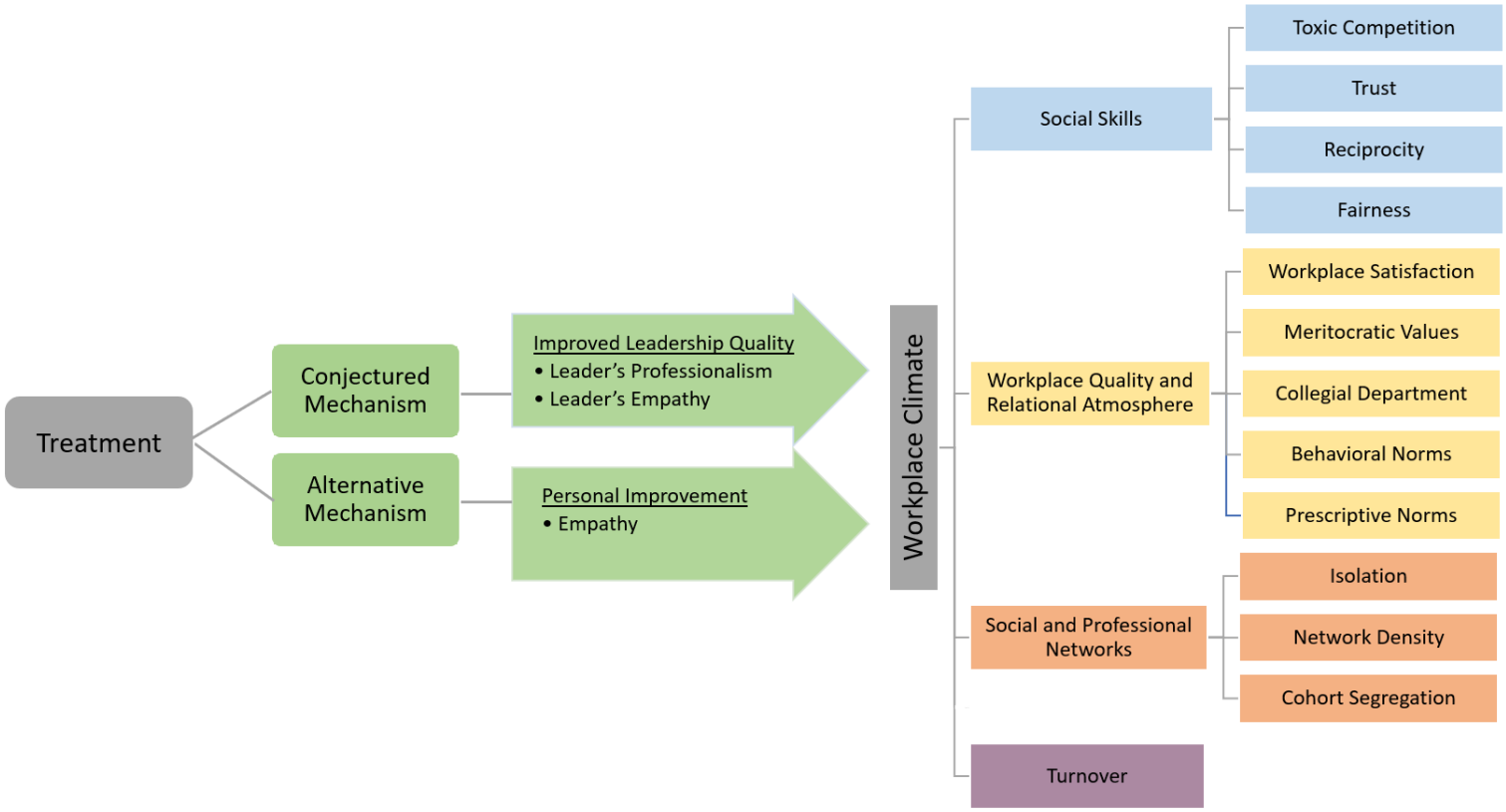
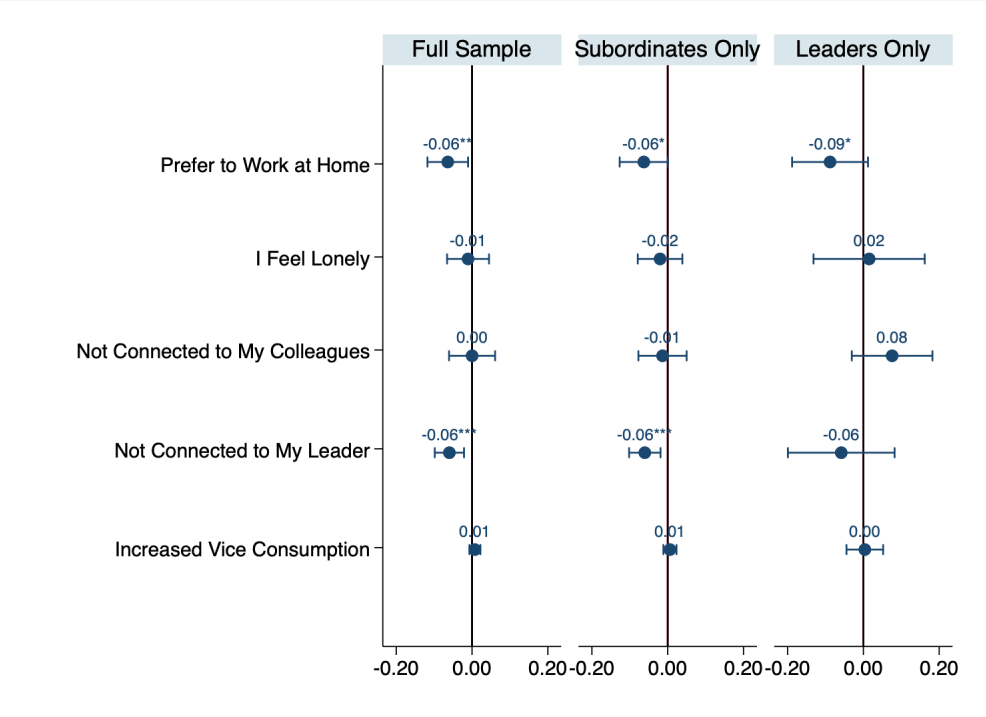
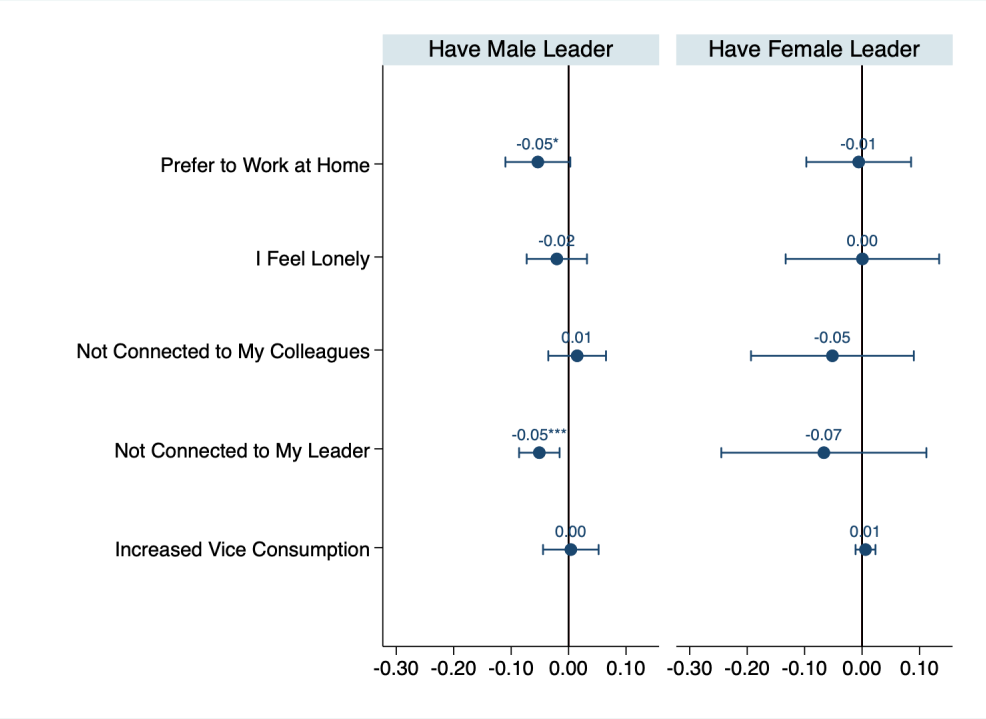


Figure 4: COVID-19 Related Well-Being



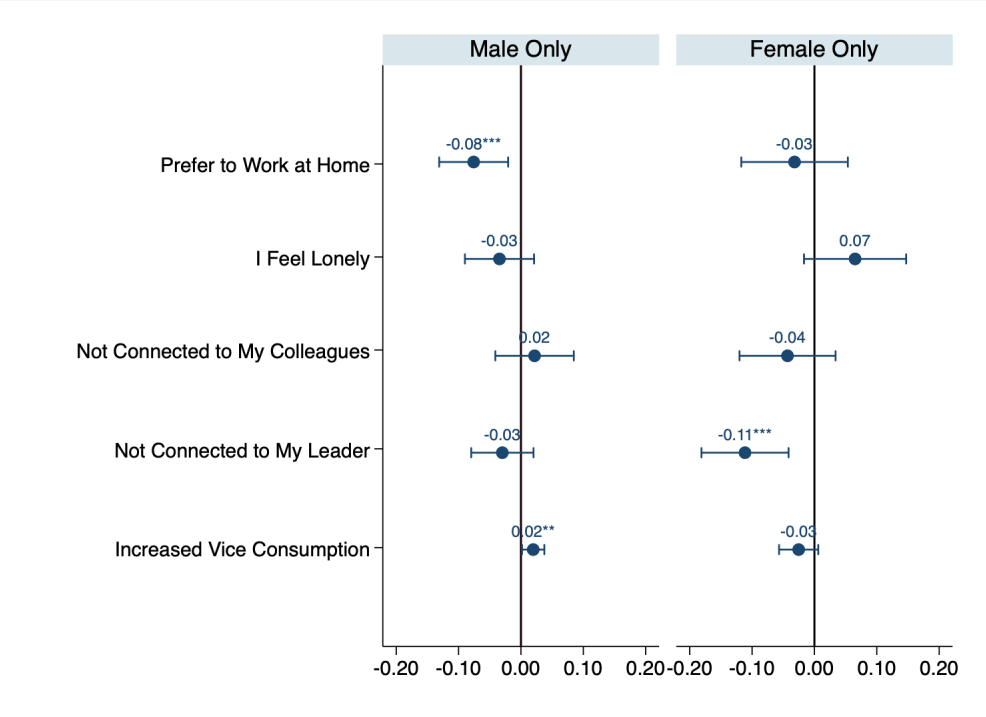
The figure depicts the estimated treatment effects on COVID-19 related feelings of social isolation indicators (binary). All regressions use a linear probability model and control for Ravens score, Eye Test score, gender, age, marital status, number of children, department size, the share of males in the department, firm size and sector dummies. 95% confidence intervals are based on standard errors clustered at the firm level. The vertical line indicates an effect of zero.

Figure 5: COVID-19 Related Well-Being: Leader Gender



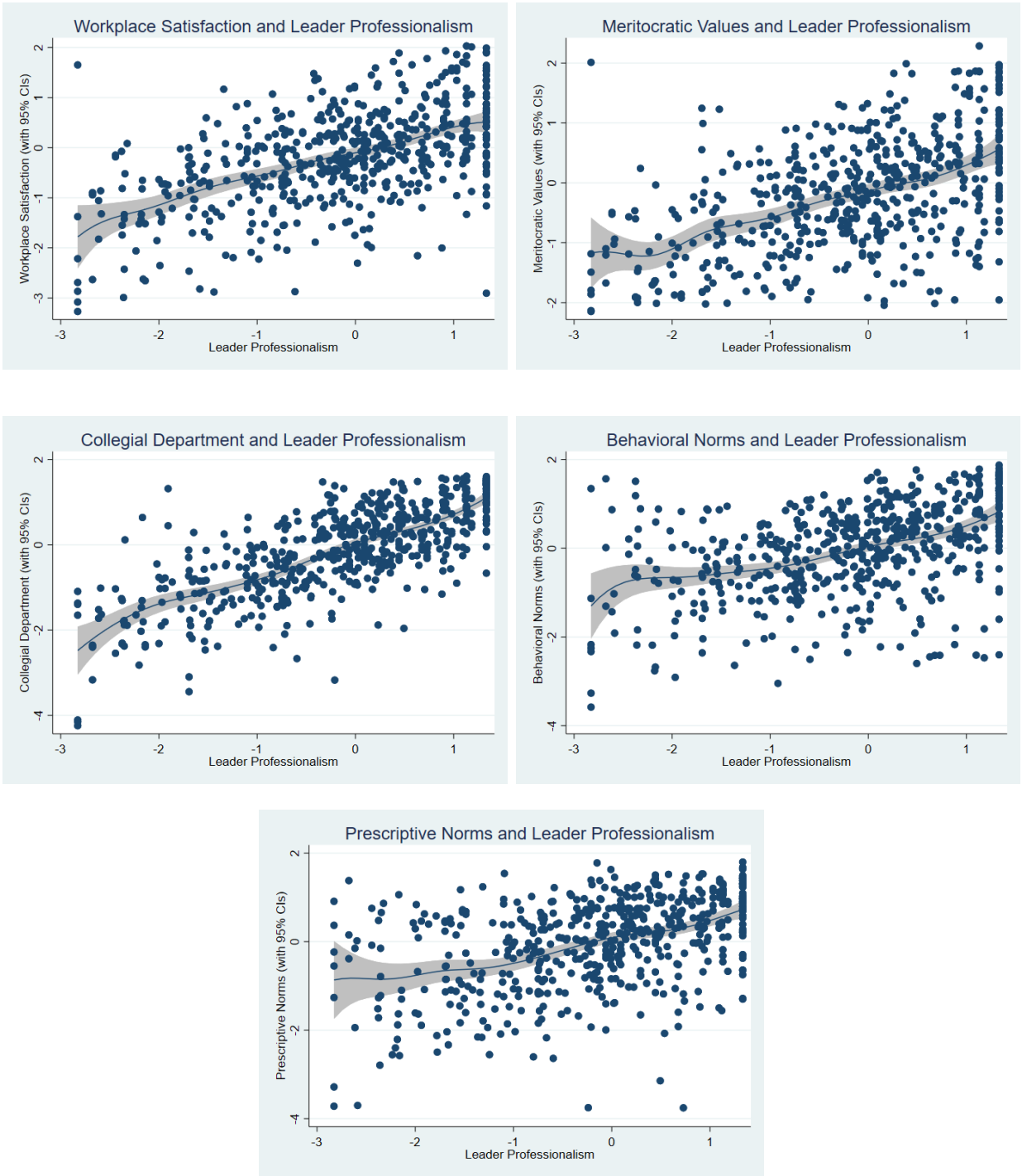
The figure depicts the estimated treatment effects on COVID-19 related feelings of social isolation indicators (binary). All regressions use a linear probability model and control for Ravens score, Eye Test score, gender, age, marital status, number of children, department size, the share of males in the department, firm size and sector dummies. 95% confidence intervals are based on standard errors clustered at the firm level. The vertical line indicates an effect of zero.

Figure 6: COVID-19 Related Well-Being: Gender



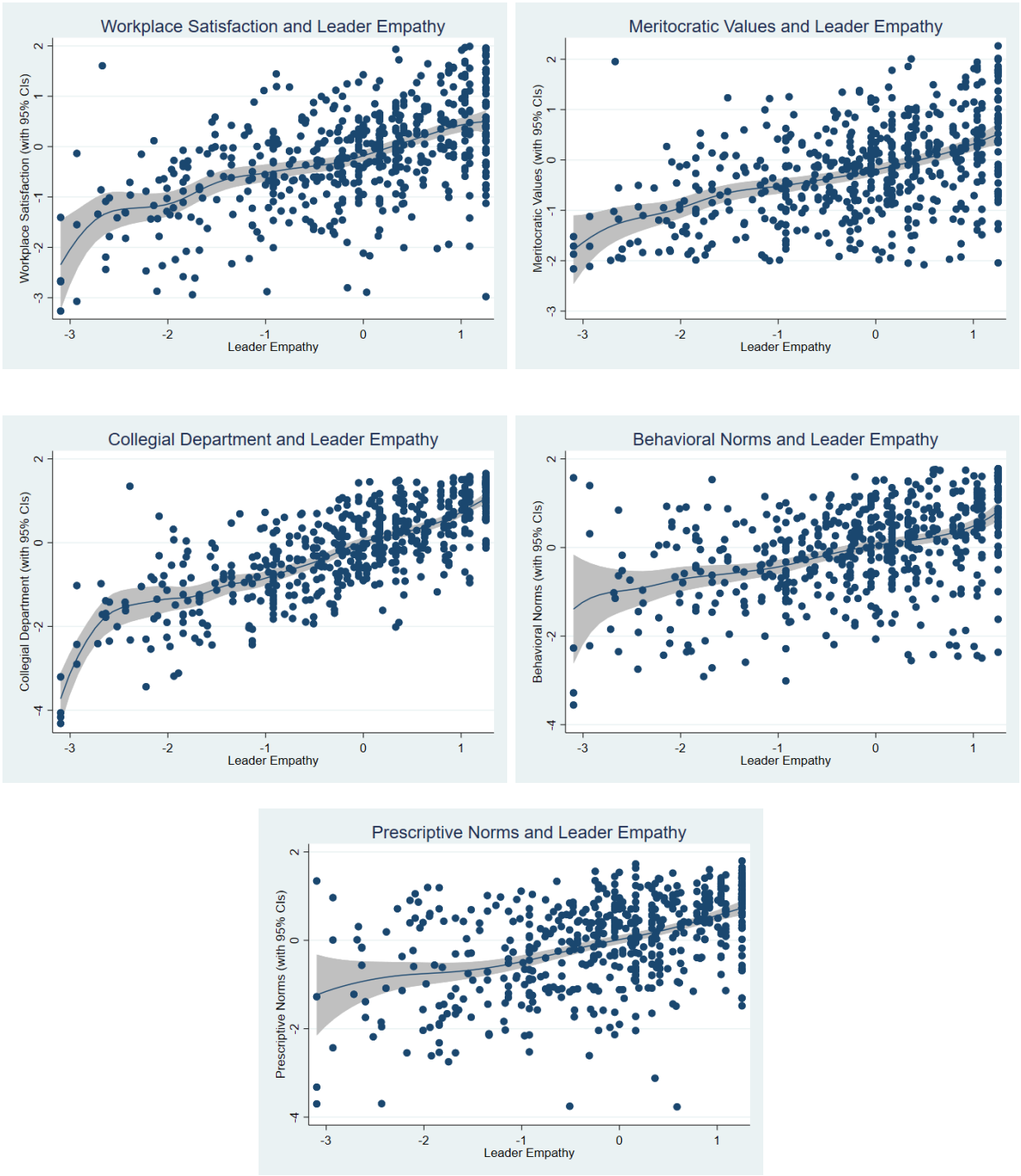
The figure depicts the estimated treatment effects on COVID-19 related feelings of social isolation indicators (binary). All regressions use a linear probability model and control for Ravens score, Eye Test score, gender, age, marital status, number of children, department size, the share of males in the department, firm size and sector dummies. 95% confidence intervals are based on standard errors clustered at the firm level. The vertical line indicates an effect of zero.

Figure 7: Associations between Leader Professionalism and Workplace Climate/Relational Dynamics at Baseline



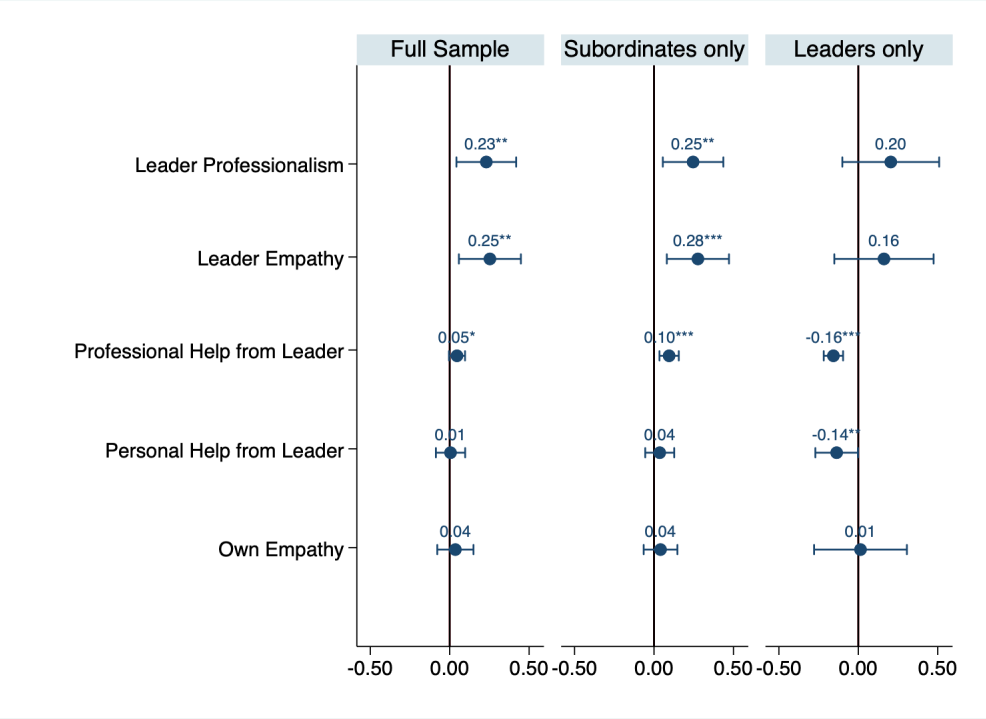
Figures plot the non-parametric estimates (and 95% confidence bands) of the associations between leader professionalism reported by subordinates and workplace satisfaction, perceived meritocratic values, collegiality of the department, descriptive and prescriptive behavioral norms. Ravens score, Eye 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 8: Associations between Leader Empathy and Workplace Climate/Relational Dynamics at Baseline



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.

Figure 9: 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, 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

A Extra Tables and Figures

Table A.1: Balance (Restricted Baseline Sample)

	Control Mean	Treatment Mean	P-value of Difference
Male	0.68	0.63	0.16
Age	35.49	35.95	0.39
Married	0.66	0.66	0.72
Tenure (yearly)	6.47	8.30	0.11
Leader Age	42.29	42.21	0.89
Under Male Leader	0.71	0.74	0.77
Holding Leadership Position	0.16	0.18	0.17
Raven Score	0.07	0.08	0.59
Eyes Score	0.05	-0.27	0.24
Risk	0.05	-0.03	0.11
Choice of Tournament over Piece Rate	0.52	0.49	0.23
Contribution in Public Goods	0.02	0.11	0.47
Workplace Satisfaction	-0.00	0.14	0.17
Collegial Department	-0.00	-0.10	0.38
Meritocratic Values	0.00	0.09	0.11
Behavioral Norms	-0.02	-0.07	0.93
Prescriptive Norms	-0.02	-0.01	0.77
Leader Quality	-0.00	-0.00	0.54
Nominated Leader as Professional Help	0.53	0.56	0.92
Nominated Leader as Personal Help	0.44	0.39	0.51

Reported statistics use the restricted Fall 2019 baseline sample. 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 (Short Baseline Sample)

	Control Mean	Treatment mean	P-value of difference
Male	0.73	0.67	0.14
Age	36.52	35.49	0.44
Married	0.69	0.65	0.07*
Tenure (yearly)	7.72	7.42	0.57
Raven Score	0.03	0.09	0.41
Eyes Score	0.03	-0.00	0.76
Leader Age	42.29	42.21	0.89
Under Male Leader	0.71	0.74	0.77
Holding Leadership Position	0.18	0.19	0.17

Reported statistics use the Fall 2020 short baseline sample. 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.3: Balance table (unrestricted sample): Subordinates and Leaders

Panel I: Subordinates only

	Control Mean	Treatment mean	P-value of difference
Male	0.61	0.56	0.20
Age	34.91	34.66	0.73
Married	0.66	0.59	0.13
Tenure (yearly)	6.78	7.18	0.48
Leader Age	42.30	41.77	0.89
Under Male Leader	0.75	0.73	0.59
Raven Score	-0.05	0.03	0.69
Eyes Score	0.04	-0.22	0.16
Risk	-0.02	-0.03	0.20
Choice of Tournament over Piece Rate	0.49	0.46	0.41
Contribution in Public Goods	-0.03	0.04	0.54
Workplace Satisfaction	-0.09	0.09	0.11
Collegial Department	-0.05	-0.14	0.64
Meritocratic Values	-0.15	0.03	0.03**
Behavioral Norms	-0.02	-0.01	0.45
Prescriptive Norms	-0.06	-0.02	0.40
Leader Quality	-0.03	0.01	0.35
Nominated Leader as Professional Help	0.55	0.61	0.32
Nominated Leader as Personal Help	0.42	0.45	0.27

Panel II: Leaders only

Male	0.71	0.66	0.50
Age	41.60	41.52	0.96
Married	0.83	0.81	0.57
Tenure (yearly)	11.03	11.09	0.84
Leader Age	43.53	46.46	0.08*
Under Male Leader	0.78	0.69	0.23
Raven Score	0.24	0.19	0.46
Eyes Score	-0.19	-0.23	0.92
Risk	0.10	0.05	0.66
Choice of Tournament over Piece Rate	0.56	0.61	0.64
Contribution in Public Goods	0.14	0.17	0.94
Workplace Satisfaction	0.35	0.36	0.88
Collegial Department	0.21	0.04	0.04**
Meritocratic Values	0.61	0.33	0.11
Behavioral Norms	0.09	0.07	0.73
Prescriptive Norms	0.21	0.18	0.73
Leader Quality	0.12	-0.03	0.27
Nominated Leader as Professional Help	0.39	0.47	0.24
Nominated Leader as Personal Help	0.38	0.35	0.84

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 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.4: Treatment Effects on Experimentally Elicited Social Skills (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	-3.14***	-0.00	0.03***	3.01	-2.77
	(0.69)	(1.58)	(0.01)	(2.25)	(1.69)
Wild Bootstrap P-value	0.00	1.00	0.02	0.28	0.15
Control Mean	22.58	51.56	0.36	101.16	98.54
N	1825	1825	1825	1825	1825
Panel III: Leaders only					
Treatment	-4.63**	2.80	0.01	4.27	0.80
	(1.63)	(2.11)	(0.03)	(2.88)	(4.25)
Wild Bootstrap P-value	0.02	0.26	0.65	0.24	0.87
Subordinate = Leader	0.45	0.08	0.59	0.69	0.46
Control Mean	25.66	54.87	0.41	101.06	95.33
N	408	408	408	408	408

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).

Table A.5: Treatment Effects on Perceived Workplace Climate (without covariates)

Panel I: Male Only	Workplace Climate		Relational Dynamics		
	Workplace S.	Meritocratic 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	0.29**	0.27**	0.23**	0.13	0.18**
	(0.10)	(0.10)	(0.09)	(0.08)	(0.09)
Wild Bootstrap P-value	0.02	0.06	0.04	0.21	0.08
Control Mean (Normalized)	-0.06	-0.06	-0.03	0.00	-0.03
N	1757	1757	1789	1781	1774
Panel III: Leaders only					
Treatment	-0.07	-0.03	0.08	0.06	0.05
	(0.14)	(0.13)	(0.11)	(0.10)	(0.11)
Wild Bootstrap P-value	0.66	0.87	0.53	0.64	0.71
Subordinate = Leader	0.00	0.00	0.03	0.35	0.16
Control Mean (Normalized)	0.26	0.26	0.15	-0.00	0.15
N	398	398	405	402	400

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).

Table A.6: Treatment Effects on Quitting and Promotion (without covariates)

Panel I: Full sample	Probability of Quitting	Probability of Promotion
Treatment	-0.04**	0.01
	(0.01)	(0.02)
Wild Bootstrap P-value	0.03	0.54
Control Mean	0.05	0.07
N	2326	2326
Panel II: Subordinates only		
Treatment	-0.03**	0.01
	(0.01)	(0.02)
Wild Bootstrap P-value	0.06	0.69
Control Mean	0.06	0.07
N	1901	1901
Panel III: Leaders only		
Treatment	-0.04*	0.03
	(0.02)	(0.03)
Wild Bootstrap P-value	0.05	0.51
Subordinate = Leader	0.66	0.71
Control Mean	0.05	0.07
N	425	425

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. Non-participant sample regressions control for gender, firm size and sector dummies. Standard errors are clustered at the firm level (unit of randomization).

Table A.7: Correction for Multiple Hypothesis Testing: Original and Romano-Wolf p-values

Panel I: Incentivized Outcomes

	Full Sample		Subordinates Only		Leaders Only	
	Original	Romano-Wolf	Original	Romano-Wolf	Original	Romano-Wolf
Sabotage	0.00	0.05	0.00	0.04	0.05	0.13
Trust	1.00	1.00	0.47	0.73	0.37	0.75
Reciprocity	0.01	0.05	0.01	0.03	0.32	0.75
Ultimatum Offer	0.23	0.63	0.42	0.73	0.01	0.53
Min. Accepted	0.34	0.82	0.17	0.70	0.48	0.75

Panel II: Survey Outcomes

	Full Sample		Subordinates Only		Leaders Only	
	Original	Romano-Wolf	Original	Romano-Wolf	Original	Romano-Wolf
Workplace S.	0.02	0.07	0.00	0.02	0.83	0.99
Meritocratic Values	0.03	0.11	0.00	0.03	0.93	0.99
Collegial Dept.	0.02	0.11	0.01	0.06	0.44	0.95
Behavioral Norms	0.24	0.39	0.16	0.30	0.65	0.98
Prescriptive Norms	0.11	0.26	0.06	0.15	0.86	0.99
Leader Professionalism	0.02	0.13	0.01	0.08	0.18	0.70
Leader Empathy	0.01	0.11	0.01	0.06	0.29	0.78

Panel III: Network

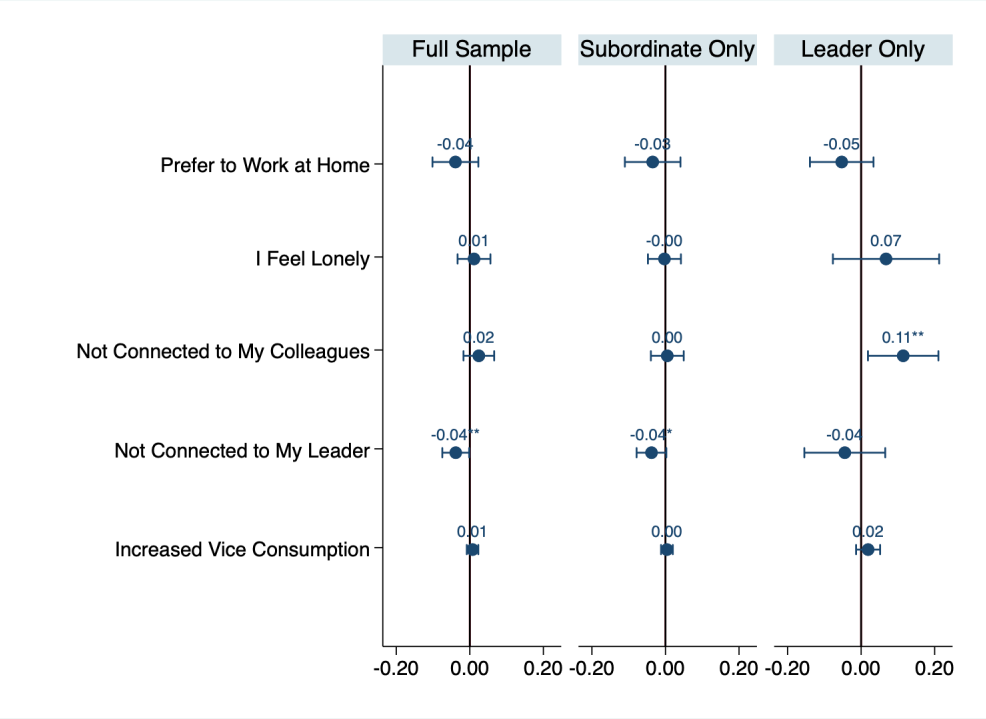
	Full Sample		Subordinates Only		Leaders Only	
	Original	Romano-Wolf	Original	Romano-Wolf	Original	Romano-Wolf
Professional Help from Leader	0.07	0.40	0.00	0.04	0.00	0.08
Personal Help from Leader	0.91	0.91	0.42	0.49	0.05	0.12

Panel IV: Covid-19 Related Well-Being

	Full Sample		Subordinates Only		Leaders Only	
	Original	Romano-Wolf	Original	Romano-Wolf	Original	Romano-Wolf
Prefer to Work at Home	0.02	0.12	0.05	0.20	0.08	0.58
I Feel Lonely	0.69	0.95	0.48	0.92	0.83	0.97
Not Connected to My Colleagues	1.00	1.00	0.66	0.92	0.15	0.68
Not Connected to My Leader	0.00	0.12	0.01	0.20	0.40	0.81
Increased Vice Consumption	0.29	0.86	0.48	0.92	0.87	0.97

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 incentivized outcomes, Panel II, survey outcomes, Panel III, leader's network position, 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, 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).

Figure A.1: COVID-19 Related Well-Being (without covariates)

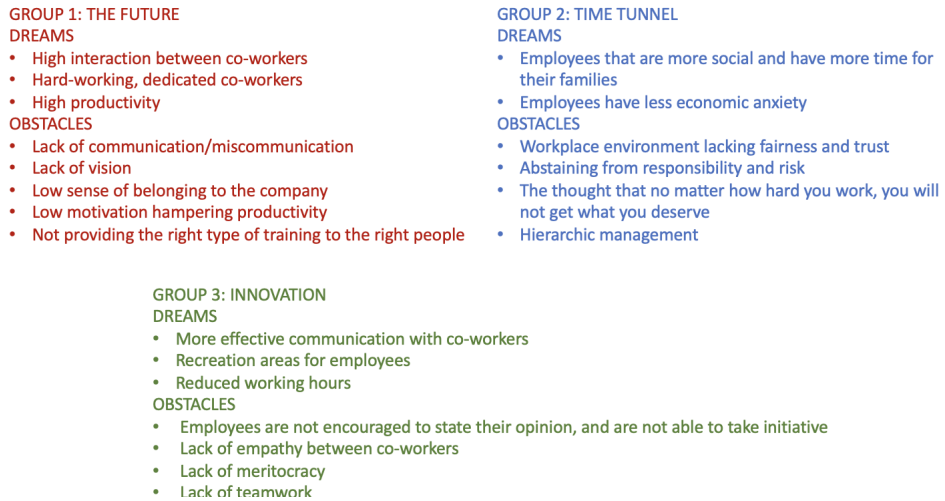


The figure depicts the estimated treatment effects on COVID-19 related feelings of social isolation indicators (binary). All regressions use a linear probability model and control for sector dummies. 95% confidence intervals are based on standard errors clustered at the firm level. The vertical line indicates an effect of zero.

B Intervention Content and Example Activities

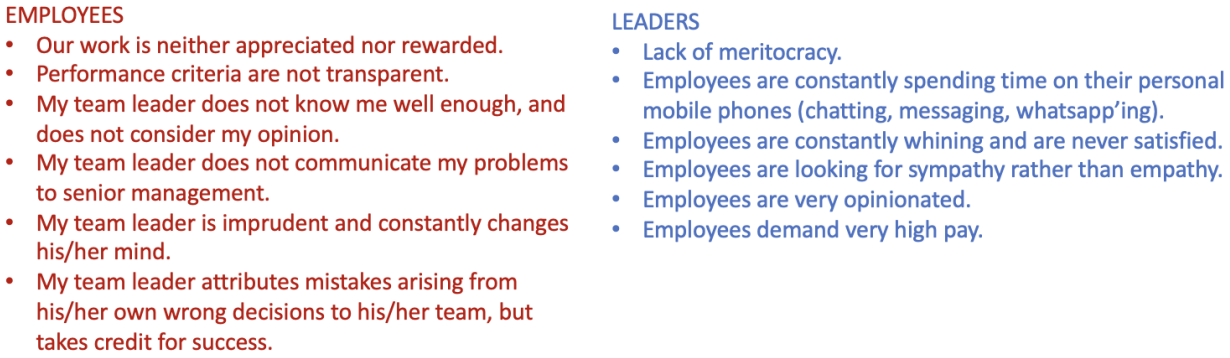
B.1 Module 1: Online Workshops

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



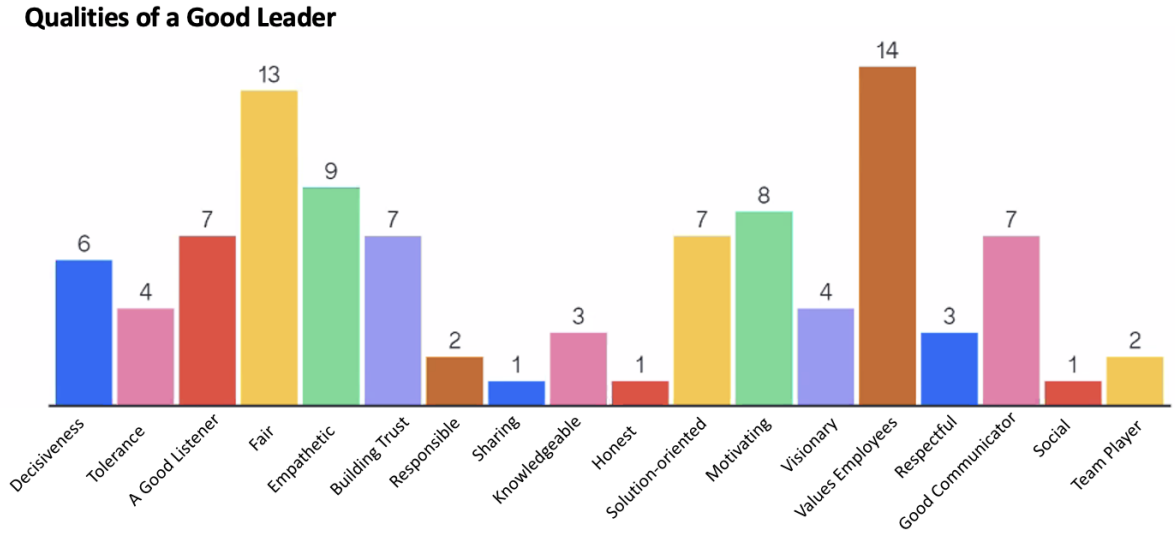
In randomly formed groups, participants described their imagined future workplace and list obstacles in achieving this ideal environment. Exact translations from Turkish.

Figure B.2: Role-playing exercises



In groups, participants assumed different roles (of executives, regular employees, customers, female emplyoees, etc..) and stated their complaints and expectations. Exact translations from Turkish.

Figure B.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 B.4: Proactive and reactive behavior in relationships using creative drama

B.2 Module 2: Follow-up Projects

Figure B.5: Screenshots of follow-up project slides presented by different teams

The top panel shows a slide explaining a project titled "We Are One". The team proposes a practice where a selected member of each department pays a daily visit to another department to foster teamwork, better communication and coordination. The bottom panel shows a SWAT analysis of communication and motivation within the company. Exact translations from Turkish.

Figure B.6: Presentations of follow-up projects by team representatives

C Experimental Instructions and Implementation of Games

C.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.

C.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.

C.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 more or less, or equal to 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.

C.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*.

C.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.

C.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.

C.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.

C.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.

D 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 Quality	*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.
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?

E Qualitative Analysis

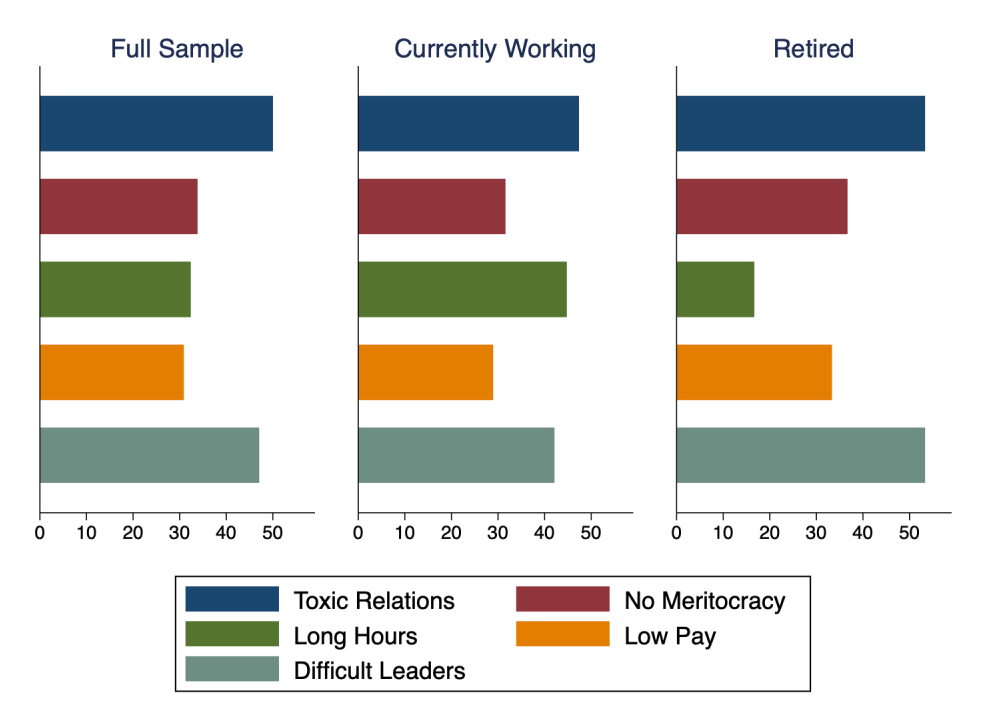
After some informal conversations with a number of currently working and retired professionals about the difficulties of corporate life, we decided to run a simple survey using a professional network. We sent out a short survey to 80 professionals. We received responses from 68 of them, 30 of whom no 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. Fear of not being promoted, not being able to progress
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 E.1 presents the results for the full sample (68 professionals), currently working professionals (38) and retired professionals (30).

Figure E.1: Qualitative Evidence



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