# Pre-analysis Plan for "Improving Workplace Climate: A Randomized Intervention on Large Corporations"

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May 2021

## 1  Introduction

Effective communication skills are essential ingredients for a healthy and cohesive work environment. This study aims to test whether reinforcing these skills via a creative training program offered to white-collar professionals improves workplace climate and enables better social interactions in large corporations. The evaluation sample contains white-collar professionals of all ranks from 20 large corporations in Turkey representing the chemistry, defense, construction, textiles, energy, and finance sectors.

The intervention involves a series of workshops where a professional implementing partner uses unique interactive methods, including creative drama and role-playing, to improve social and interpersonal skills. A critical component of the intervention is a series of team exercises following workshop sessions, lasting over eight weeks, managed and monitored by the implementing partner. While the intervention targets all white-collar workers from all ranks, team and department leaders are particularly encouraged to attend.

We performed the randomization after collecting baseline data from all 20 corporations in Fall 2019, assigning 10 firms to treatment, 10 to control. The Covid-19 disruptions made it impossible to implement the training program in the initially intended period of Spring 2020. Therefore, the intervention's implementation in 10 treatment firms was re-scheduled for November 2020-April 2021. The intervention is currently ongoing using online platforms. Endline fieldwork is planned for Summer 2021. This is a phase-in design where control firms will be scheduled to receive the training program after the completion of endline.

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## 2 Outcomes and Hypotheses

We designed a wide range of outcomes to test the effectiveness of the training program. To construct our outcomes, we use three main data collection tools:

- Survey questions

- Incentivized experiments

- Social networks

Our primary outcomes of interest can be grouped into three categories.

- Perceived workplace climate indicators. Using a large numbers of item-response questions and we will construct following indices:

    - Behavioral (descriptive) norms

    - Workplace satisfaction

    - Meritocratic values of the firm

    - Occupational satisfaction

    - Within-department cooperation

- Social Skills (measured via incentivized games)

    - Trust

    - Reciprocity

    - Sabotaging behavior

    - Inequality acceptance

- Social Networks (Departmental Level Network Structure)

    - Professional and personal support links with colleagues
        * Closeness index
        * Density index
        * Share of isolated individuals in the department

Our secondary outcomes are:

- Leaders' quality (from the viewpoint of subordinates)

- Leaders' ability to take perspective (from the viewpoint of subordinates)

- Prescriptive norms

- Receiving professional support from the leader (networks)

- Receiving personal support from the leader (networks)

Our central hypothesis is that the training program will improve the aforementioned workplace climate indicators, improve social skills and strengthen social bonding between colleagues (all primary outcomes). We conjecture that the main mechanism will be improved leader-subordinate relationships. We will test the latter using our secondary outcomes.

# 3 Empirical Models

Below, we lay out the empirical specification that we will use to estimate the effect of the intervention.

## 3.1 Benchmark Model

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:

$$y_{is} = \alpha_0 + \alpha_1 T_s + X'_{is}\gamma + Other_{is} + \delta_b + \varepsilon_{is}$$

where $T_s$ is a dummy variable which equals 1 if firm $s$ is in the treatment group and zero otherwise, and $X'_{is}$ is a vector of observables for worker $i$ in firm $s$ that are potentially predictive of the outcome $y$. These include firm and department size, demographics, baseline cognitive and sociocognitive skills, IQ (measured by Raven's Progressive Matrices, Theory-of-Mind, convergent thinking, and outcome variables collected at baseline. $Other_{is}$ captures other variables (for particular outcomes) that might be added for specific regressions, and $\delta_b$ are strata (sector) fixed effects. Because we do not expect all white-collars in treatment firms to participate in the training program, the estimated $\hat{\alpha}_1$ is likely to be the intent-to-treat effect (ITT).

Because the sample contains a small number of clusters (20 corporations), we will use wild bootstrap method to obtain standard errors and report them in addition to asymptotic cluster-robust standard errors. We will also make multiple hypotheses testing adjustments.

## 3.2 Local Average Treatment Effects

We do not expect all white-collar workers to participate in all workshops. We will keep track of participation for each worker and estimate treatment effects on the treated.

For this, we will estimate the following empirical specification:

$$y_{is} = \alpha_0 + \alpha_1 T_{is} + X'_{is}\gamma + Other_{is} + \delta_b + \varepsilon_{is}$$

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where $T_{is}$ is now a dummy variable which equals 1 if the individual $i$ in firm $s$ actually participated in training workshops, and zero otherwise. Note that this variable takes the value zero for all individuals in the control firms since we do not have spillovers. The variable can be zero for some individuals in the treatment firms as we expect some individuals not to participate in training sessions. We then instrument this binary variable with the binary indicator of treatment to identify the LATEs.

## 4 Heterogeneous Treatment Effects

We will explore several dimensions of treatment effect heterogeneity listed below:

- Gender

    - Subordinate and leader gender
    - Gender composition of the department