The Impact of COVID-19 on the Willingness to Work in Teams *

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Abstract

This paper studies the impact of the COVID-19 pandemic on individuals' willingness to work in teams, using an online experiment. We implement a setup where individuals can choose to work on a real effort task either individually or together with a partner through online interaction. We find that although working in a team is more profitable and participants also expect this, a large fraction makes a financially costly decision by shying away from teamwork. Moreover, participants primed with COVID-19 are less likely to self-select into teamwork. We find that in addition to COVID-19 salience, social confidence, the willingness to socialize, and prior exposure to teamwork are significant predictors of the decision to avoid socially interactive work environments. Our findings provide insights into the potential impact of the pandemic on social interactions in a work setting.

Keywords: Teamwork, COVID-19, incentives, preferences, experiment, priming

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1 Introduction

The COVID-19 pandemic has profoundly affected our lives and imposed restrictions on our social relations. After the recognition of COVID-19 by the World Health Organization as a pandemic (WHO, 2020), many countries went into lockdown or strongly recommended their citizens to practice social distancing. In the ensuing period, many social interactions including those within departmental teams in organizations, study groups in schools and interactions between extended family members were disrupted, and people had to largely stay at home for long periods of time, interacting with other people much less than they did before the pandemic.

The experience of distancing and social isolation could be expected to change individuals' attitudes toward socialization with others. If, for example, individuals realize that they can derive sufficient enjoyment from solitary activities or get used to an individualistic lifestyle, their desire to spend time with others might decrease. Previous studies from the psychology literature support the malleability of extroversion, and document that experiencing external shocks such as natural disasters or involuntary job loss could cause changes in the demand for social interactions (Anger et al., 2017; Mehra et al., 2019). In the context of COVID-19, Lee and Tipoe (2021) shows that Covid-induced lockdowns in the UK led individuals to spend more time doing leisure activities alone, with a consequent decrease in face-to-face interactions. Similarly, Giuntella et al. (2021) document a considerable decrease in the number of hours spent socializing during the pandemic among college students, going from spending approximately 1.5 hours per day with their friends at the beginning of 2020 to less than 30 minutes per day at the end of April.

In this paper, we study self-selection into a social (as opposed to individual) work environment, and the impact COVID-19 may have had on this type of choice. To the extent that the valuation of social interactions matters for behaviors at the workplace or the choice of employment, potential changes to preferences for interacting with others brought about by COVID-19 would have implications for choices and outcomes at the workplace and in the labor market. Supporting this view are studies establishing a relationship between the desire to socialize and self-selection into different types of work. For instance, Krueger and Schkade (2008) find that sociable individuals who spend more time with their friends out of work are more likely to sort into jobs that offer more interaction with colleagues. Studying a factory that switched from piece-rate to team incentives, Hamilton et al. (2003) also find evidence for nonpecuniary benefits from socialization, as high-productivity workers join teams first despite the potential loss of earnings. Our paper builds on this background, and poses the question of whether the external shock of COVID-19, which could plausibly change the preferences for socialization, would affect the decision to work in teams or individually. Given the increasing trend towards team production in organizations (Bandiera et al., 2013; Lazear and Shaw, 2007; Wuchty et al., 2007) and increasingly high returns to social skills in

the labor market (Deming, 2017), a preference shift toward individual work could also bring about potential payoff losses. Studying efficiency consequences is therefore a major focus in the current paper.

To be able to study attitudes towards socially interactive work, we create an online experimental setup with a dynamic real effort task, where teamwork is likely to generate higher payoffs than working alone. We use a priming instrument to identify the causal effects of the COVID-19 pandemic on attitudes towards teamwork. Specifically, we prime a random group of our participants to think about COVID-19 (as opposed to a neutral prime), and elicit their willingness to work in teams, along with a rich set of related behavioral and belief measures.[1] The backbone of our design involves two team selection choices: We first have participants choose whether they would like to work on a real effort task individually, or together with another person, camera and microphone on, in a Zoom breakout room. The type of teamwork we induce involves communication and interaction in addition to common payoffs, as we hypothesize that it is the preferences for this type of interactive work that COVID-19 may have affected. In order to study the effects of exogenous exposure to and experience with teamwork on choices, we then assign a random fraction of the participants to a (forced) team. After the experience of this first round, we again ask participants whether they would like to work on the same task individually or in a team in a second stage. Our main objective is to understand i) whether increasing the salience of the COVID-19 pandemic affects individuals' willingness to work in a team, ii) whether this is costly from an economic perspective. In addition, our two-period design and rich set of covariates allow us to put forward novel evidence on the determinants of the willingness to work in teams and the efficiency costs of working alone, as well as to explore the mechanisms of any treatment effects from COVID-19 priming.

Our results show that although a large majority of participants correctly expect that they would do better in a team than individually, less than half join teams in each round. Participants primed to think about COVID-19 are even less likely to select into teams than those in the control condition; the effect is larger and significant at the 5 percent level for the second round of selection into teamwork. This avoidance of teamwork is costly and leads to significant payoff losses in the whole sample; however, subjects reminded of COVID-19 incur larger costs than those in the control group. An exploratory analysis rules out several potential mechanisms, and highlights beliefs about the effectiveness of teamwork as one factor that partially mediates the treatment effect. The negative effect of COVID-19 salience on team selection is also corroborated when we use self-

[1] Priming is one of the main methods used in studying the impact of COVID-19 on behaviors, when clean before- and after- measures or valid instruments for identification are not available (Bartos et al., 2020; Cappelen et al., 2021). Priming has also been used in other contexts in economics, to identify the effects, for example, of identity and religiosity on economic preferences and behavior (Benjamin et al., 2010, 2016; Cohn et al., 2014; Shariff and Norenzayan, 2007).

reports, with participants who feel more affected by the pandemic being less willing to join a team. Finally, having a close elderly relative, which we interpret as an exogenous proxy for the impact of COVID-19 on the individual, also leads to lower self-selection into teams. In correlational analyses on the whole sample, the unwillingness to socialize and the unwillingness to engage in public performance emerge as significant predictors of the tendency to shy away from teamwork. Utilizing our two-period design, we also show that by exposing individuals to teamwork exogenously, it is possible to increase sorting into teamwork, although this turns out not to be effective in the Covid-primed group.

In the broader context of the current paper, that is, the effects of COVID-19 on behaviors and outcomes in the labor market and in education, a notable line of studies have focused on the inequality in the impact of the pandemic across gender (Adams-Prassl et al., 2020; Albanesi and Kim, 2021), labor reallocation and remote work (Carrillo-Tudela et al., 2021; Hensvik et al., 2021; McDermott and Hansen, 2021) and the impact of remote education on academic performance (Chen et al., 2022; Eyles et al., 2020). Studying the effects of the COVID-19 pandemic on preferences has also drawn considerable interest, adding to the literature on the effects of exposure to exogenous shocks such as natural disasters or violence on preferences (for an overview, see Ertac (2020)). While it seems that risk and time preferences have remained largely stable during the pandemic (Angrisani et al., 2020; Drichoutis and Nayga, 2020), the findings are mixed for social preferences. Lohmann et al. (2020), by exploiting the variation in the intensity of the pandemic across different cities of China, document that people who have been more intensely exposed to COVID-19 display more anti-social behaviors. Bartos et al. (2020) utilize a priming instrument to study the impact of the pandemic on attitudes towards outgroups, and find that participants primed with COVID-19 display more hostile behaviors against foreigners. In contrast, Cappelen et al. (2021) report a positive treatment effect on solidarity and fairness of priming with COVID-19. Terrier et al. (2021) report a heterogeneous effect of the pandemic on prosociality: having an infected relative increases the prosociality gap between low- and high-SES students in France.

Another related line of research to the current paper is the literature on teamwork, and particularly self-selection into teams. While self-selection into competitive incentive schemes has received a lot of attention, especially along the gender aspect, the literature on self-selection into teamwork is smaller. Previous studies have identified gender and ability as main predictors of self-selection into teams. Kuhn and Villeval (2015) report that women are more likely to join a team than men in a setting where teamwork is defined as having a common payoff based on the average output of team members. While they document adverse selection into teamwork, other studies have produced conflicting results on the relationship between ability and sorting into teams (Cooper et al., 2021; Hamilton et al., 2003).

In light of the existing literature, the contribution of this paper is twofold: First, we document

that increasing the salience of COVID-19 leads individuals to shy away from interactive work environments. This, to our knowledge, is the first insight on the potential effects of COVID-19 on behavior in a real-effort work context, which could have significant implications for organizations. Second, we identify a setting where a significant fraction of individuals, primed and not, make a suboptimal choice by not self-selecting into teamwork. With teamwork gaining prevalence in the workplace and being a team player being touted as a "st century skill" (Rotherham and Willingham, 2010), it is particularly important to understand what derives the willingness to work in teams. The fact that many people who believe that teamwork would be more profitable still choose to work individually, suggests that there are factors that make it costly to perform in a social environment. Implementing a team setting that involves not only payoff dependency but also communication and face-to-face interaction, and collecting a rich set of control variables, we are able to study potential determinants of attitudes toward teamwork that have not been studied before.

Our results suggest that exposing workers or students to teamwork (through company- or school-wide programs involving team performance activities), and improving social confidence either through directed interventions or by creating friendly, non-judgmental work environments may be key for improving efficiency. Such policies may be particularly helpful to revert negative attitudes towards social interaction as the world recovers from the COVID-19 pandemic.

The rest of the paper is structured as follows: Section 2 describes our the experimental design and procedures, Section 3 presents the results, and Section 4 concludes with a discussion.

2 Experimental Design and Data

Our design consists of three main parts: priming task, three rounds of real effort task, and additional experimental games eliciting various economic and social preferences. Figure 1 presents the timeline of the experiment, and we explain the details of each part below.[2]

2.1 Priming Task

To prime participants to think about COVID-19, we use an adjusted version of the sentence-unscrambling task used by Shariff and Norenzayan (2007) in studying the effect of priming religious concepts on prosocial behavior. In our version of the task, subjects are asked to drop the irrelevant word in a six-word group and rearrange the remainder to form a five-word sentence. For example, *"cause hearing coronavirus car can loss"* becomes *"coronavirus can cause hearing loss"*. Subjects are asked to unscramble ten sentences. The sentences differ depending on whether

[2]Ethics board approval was obtained from the Koc University Committee on Human Research. Instructions for the main body of the experiment are provided in the Appendix.

the subject is in the COVID-19-salient or control condition. Five of the sentences unscrambled in the COVID-19-salient group are related to the pandemic, while none of the sentences contain any content related to coronavirus in the control condition but still include negative connotations such as decreasing water supply in dams, health problems such as cancer, traffic accidents, and terrorist attacks. Appendix C presents the list of all the scrambled sentences in the priming task.

After participants complete the priming task, we conduct a manipulation check exercise in which we ask participants to convert word fragments into meaningful words to understand whether the treatment increases the salience of COVID-19. For example, the word fragment *"_ask"* can be completed with the pandemic-related word *"mask"* or an unrelated word such as *"task"*. Details of the task can be found in Appendix B.[3] Both tasks are incentivized, with participants paid 3 Turkish Liras (TL) per correct answer if the task is chosen for payment at the end of the experiment.

2.2 Self-Selection into Teams

2.2.1 Eliciting the Willingness to Work in Teams

In the second part of the experiment, participants are asked to perform a real effort task in which they work either individually or in pairs. To create an environment where teams would be expected to perform better than individuals, we use the "Remote Associates Test" developed by Mednick (1962) and adapted to Turkish by (Özen et al., 2015). This task measures convergent thinking, a dimension of creativity in which there is a single solution to a problem.[4] In the task, subjects are given sets of three seemingly unrelated words. Each set of words can be combined with a single word that connects them, and participants are asked to find that word. For instance, when participants see the following three words: "*rat*, *blue*, *cottage*", the correct answer is *"cheese"* since the following word pairs are meaningful: *"rat-cheese"*, *"blue-cheese"*, and *"cottage-cheese"*.

We hypothesize that working in a team could be more advantageous than working alone in this task because each person can find different associations and consequently, submit more correct answers in the case of successful communication.[5] Note that we give subjects several examples and sufficient time to understand the rules before the game starts. In addition, they are asked to solve four quiz questions about the rules after the instruction page and get feedback about their answers.

Participants do this task for three rounds. Each round has a different set of questions. In the

[3]Table A3 in the Appendix shows that primed participants submit a higher number of COVID-19 related answers in this exercise.

[4]The other dimension of creativity is divergent thinking. In divergent thinking, there can be multiple solutions to a single problem (Torrance, 1966).

[5]Note that this induces a "maximum" or "best-shot" production function, which is common to teamwork especially in creative or problem-solving environments.

first, individual round, there are ten questions, and all subjects solve the test individually for four minutes, providing us with a measure of task-specific ability. In each of the next two rounds, participants have eight minutes to solve twenty questions. In the beginning of these rounds, participants decide which type of compensation scheme they would like to work under: individual or team-based pay. In the former, subjects work alone in a zoom-break-out room and try to solve twenty questions in eight minutes. In the latter, subjects are randomly matched with another participant from the same session, put in the same zoom-breakout room, and given eight minutes to solve twenty questions. To give subjects the opportunity to think about the questions without any disruption, in the first three minutes, team members are encouraged to work individually whereas, in the last five minutes, they are asked to go over the questions together with the camera and microphone on. Team members submit their answers individually, but they are paid based on the average performance of the team, at a piece-rate that is the same as in individual work.

In order to get a measure of exposure to teams that is largely free of selection, we incentivize the decision to join a team in the following way: either subjects' own choice is implemented, or the computer randomly assigns the subject to a payment scheme. This also allows us to observe how costly a decision to avoid teams is. Participants are informed of this process as well as the rules of the different working environments.

2.2.2 Elicitation of Beliefs

In each round, after making their decision on compensation schemes, participants are also asked to guess (1) how many correct answers they will have if they work individually in that round, (2) how many correct answers a randomly selected participant will have if he/she works individually in that round and (3) how many correct answers they would have if they work together with a randomly chosen participant as part of a team in that round. Participants are informed that one of their guesses will be chosen at the end of the experiment and if their guess is correct, they will be paid an extra 2 TL in addition to their earnings from the experiment.

2.3 Additional Measures

To understand the correlates of self-selection into teams and identify the potential mechanism behind the impact of priming COVID-19 on the willingness to work in teams, we collect the following additional variables: the pure willingness to socialize, social confidence, demand for autonomy, and the desire to avoid responsibility. We make sure that these variables are collected in such a way that would not confound the primary team choice and belief variables.

To elicit the pure willingness to socialize with others, after the priming task, we ask participants to choose between two options in case they need to wait during the experiment: they can either join

a chat in a Zoom-breakout room with other participants or wait in a silent Zoom-breakout-room, alone.[6] This measure can be considered as a behavioral measure of sociability, which has been previously studied in the literature through self-reports.

Because working in teams requires performance in a social environment, factors such as performance anxiety, fear of scrutiny by others or embarrassment could be factors in the decision to choose or avoid teamwork. To measure this, we use a similar method as in Alan et al. (2020), which elicits the willingness to perform an ability-related task in public. Specifically, after the first round of the task and before the decision of joining a team, participants are asked whether they would be willing to solve three similar questions in front of other participants at the end of the experiment. They are informed that one of the volunteers will be randomly chosen and perform the task with her microphone and camera on, and earn 5 TL per correct answer (a higher piece-rate than in the normal rounds) in addition to her earnings from the experiment. Not being willing to do this task, which is clearly profitable in expectation, indicates non-pecuniary costs to performing in public, which we call (low) "social confidence" in what follows.

Working in a team also involves relinquishing some autonomy to, and partly taking the responsibility of another person. We therefore also elicit the demand for autonomy and the desire to avoid responsibility, which have been shown to be major determinants of willingness to make a risky decision on behalf of others/leadership (Ertac et al., 2020). To study the predictive power of these constructs in joining a team, we measure the willingness to pay to determine own payoff by own performance (demand for autonomy), and the willingness to avoid determining others' payoff by own performance (desire to avoid responsibility), adapting the methodology in Ertac et al. (2020) to a performance context. The details of these tasks, which are implemented after all team decisions are made, are available upon request.[7]

2.4 Post-Experiment Survey

At the end of the experiment, subjects answer a post-experiment questionnaire collecting standard demographic information and information about their experiences during the pandemic. To capture how salient COVID-19 has been in participants' daily lives, we collect data on the level of precautions participants take, how their lives and social interactions were affected and how worried they are about the pandemic. Using these, we construct a subjective measure of the salience of COVID-19 outside of the experiment. Also, we ask whether the participant has a close elderly

[6]Participants did not need to wait in most of the sessions; however, when they needed to wait, they had already decided to work individually or in a team for both rounds, so this experience does not confound our team measures.

[7]At the end of all the tasks hypothesized to be relevant to the current paper, we also elicited attitudes towards competition, risk attitudes and altruism from the participants, via games commonly used in the literature. These variables were collected to study an independent research question, and will be the focus of another paper.

family member or lives in a high-risk location, so that we could exploit the variation in these potentially exogenous variables to identify the impact of the pandemic on the willingness to work in teams beyond our experimental manipulation. All questions are given in the Appendix B.3

2.5 Data and Procedures

The experimental tasks were programmed using o-Tree (Chen et al., 2016) and sessions were conducted through Zoom. Sessions were conducted between January 19 and March 14, 2021. Subjects received a Zoom meeting link on the day of the registered session and were redirected to the website describing the general experiment guidelines upon joining a Zoom session. All the decision-making and real effort tasks, economic games, and surveys were conducted on that website sequentially, with instructions provided on arrival at each task. Subjects were provided with a sound recording of the instructions as well as the text.[8] After instructions about the real effort and decision-making tasks, participants were asked to answer five questions about the rules of the task. If they answered any question incorrectly, they were asked to read instructions again. Moreover, participants were able to contact the experimenter via Zoom during the course of a session in case of any questions.

During the experiment, when participants would work in a team with a randomly assigned participant, the experimenter assigned each pair to a Zoom break-out room and asked them to turn on their microphones and cameras to interact with their teammate. When the task time ran out, breakout rooms were closed, and participants were sent back to the main room.

After completing all the experimental tasks and survey questions, participants were informed about their performance and earnings in a randomly chosen experimental period. Sessions lasted 65-70 minutes on average and the average payment was 45 TL, including a participation fee of 10 TL. 286 undergraduate students from Koc University participated, 56% of whom are female.

3 Results

We start by reporting some summary statistics on performance and the choice of selecting teamwork in the full sample. Teamwork involves a type of "best-shot" technology in our setup and could be expected to lead to higher productivity. Indeed, when we compare teamwork with individual work, we find that our randomly formed teams have higher performance than individuals.[9] Specifically, subjects working in a team solve on average 2 (1.6) more questions in Round 1 (Round 2)

[8] Voice recordings were generated using the text to speech software Voiser Studio (www.voiser.net)

[9] Recall that we assign subjects a random incentive scheme with probability 0.95 or their preferred compensation scheme with probability 0.05. This design allows us to study the causal impact of working in teams on performance (almost) irrespective of the chosen payment scheme.

than those who work individually (Figure 2).

When we look at self-selection into teamwork or individual work, we see that in the first round, only 27% percent of participants choose to join a team. In the second round, after many subjects experience teamwork through random exogenous assignment, this fraction rises to 43%. Given the productivity advantage of teamwork, these figures are quite low. An interesting observation to note here is that most of the subjects correctly expect that they would perform better in a team, while their preferences for teamwork (on average) are not consistent with these beliefs. For the first round, 74% of participants in the whole sample believe that they would perform better in a team; however, only 27% of participants choose teamwork. In the second round, the gap between beliefs and choices is smaller than the first round but still substantial, with 83% of subjects expecting to do better in a team, and 43% choosing to join a team. This discrepancy suggests that there may be significant non-pecuniary costs of team interactions, which may bring about efficiency losses. In what follows, we will investigate the effect of making the pandemic salient on participants' team selection choices, as well as any economic costs this may have.

3.1 COVID-19 Salience and Preferences for Teamwork

In this section, we investigate the effect of priming participants with the pandemic on self-selection into teams. We start by presenting a balance table to ensure that the randomization was successful (Appendix Table A1). The sample is balanced across the control and treatment conditions in terms of observable factors such as gender, age, year in school, major, task-related ability, and session size.

Looking at the decisions to join a team, we see that in Round 1, about 29% of the participants in the control group choose to work in a team, while 25% in the priming treatment group do so ($p = 0.49$, Mann-Whitney test). In Round 2, 50% choose teamwork in the control group, while 36% choose teamwork among the primed participants. This difference is significant at the 5 percent level ($p = 0.02$, Mann-Whitney test).

In Table 1, we present results from logistic regressions where the dependent variable is whether the participant chooses teamwork rather than working alone in Round 1 (columns 1 and 2) and Round 2 (columns 3 and 4). Priming participants with COVID-19 decreases the likelihood of choosing to work in a team in both rounds (columns 1 and 3). The effect is about 11 percentage points for the second round and significant at the 5 percent level, but smaller and imprecisely estimated for the first round. These results are robust to the inclusion of participants' demographics (gender, seniority and major) and session size. Also note that participants' assignment to one of the incentive schemes in the first round is near-random and experiencing teamwork could be expected to change participants' attitudes toward teamwork in the second round. When we include

this variable in the 2nd period choice regression, we find that it is indeed significantly positively associated with self-selection into teams. We will come back to this finding when we analyze the determinants of team selection.

The negative effects of COVID-19 salience on self-selection into teams are corroborated in Table 2, where we test whether priming COVID-19 affects the number of times a participant chooses to work in a team during the whole experiment. Primed participants are about 12 percentage points more likely to avoid teamwork in both of the rounds, and 10 percentage points less likely to choose teamwork once. We do not observe a significant treatment effect on the propensity to select teamwork in both of the two rounds, which suggests that these participants could be highly extroverted individuals who have a stable preference for socially interactive work.

Overall, these results suggest that priming participants to think about COVID-19 makes them less likely to join a team. In the next section, we focus on the question of whether this has economic costs.

3.2 Economic Costs of Avoiding Teamwork

Since teamwork generates better performance outcomes, the negative effect of COVID-19 salience on selecting into teamwork may lead to payoff losses. We now investigate this in more detail. In Table 3, we first present the effect of being (exogenously) assigned to teamwork on performance, separately for Round 1 and Round 2. Working in a team significantly improves performance, even after controlling for treatment status, gender and task-related ability.[10] The productivity difference between the two work settings is also reflected in experimental earnings. Subjects working in randomly formed teams earn 5.9 (4.7) Turkish Liras more than those who work individually in the first (second) round of RAT on average ($p < 0.0001$, Mann-Whithey test). This corresponds to about 13 (10.4) percent higher earnings for those who worked in teams in Round 1 (Round 2).

To study the payoff consequences of decisions and the magnitude of the cost related to COVID-19 salience, we first calculate the cost associated with the choice of individual work over teamwork at the individual level. We focus on Round 2, as this is where we observe a robust treatment effect on choices. In calculating costs from the chosen incentive scheme, we form a counterfactual in the following way: For participants who worked in a team in Round 2, we predict what their individual performance would have been, based on their available individual performance data in previous rounds. For those working alone in Round 2, we predict their expected performance under team-based pay by simulating all the possible pairings with participants in their respective

[10]Note that COVID-19 priming does not significantly affect performance for any round. Results are similar when we run regressions separately for the treatment and control group, and the difference in coefficients of having played in a team on second period performance is not significant across treatment and control (see Table A2 in Appendix).

treatment group.[11] For each possible team, we then calculate the team performance by taking the maximum of the individual performances (either realized or predicted) of team members.[12] Then, for each subject, we calculate team performance by taking the average of the performances of their possible hypothetical teams. Given these potential earnings in the two incentive schemes, the expected cost of a choice is defined as the difference between the expected payoffs under the alternative and the chosen option.

Primed participants make significantly more costly decisions (about 0.23 standard deviations) compared to those in the control group ($p = 0.0095$, Mann-Whitney test). Figure 3 presents the kernel density plots for standardized individual costs in Round 2 for the primed and control group. A Kolmogorov-Smirnov test confirms that the distribution of the primed and control group's costs are different ($p = 0.000$).

It is important to note here that the magnitude of the cost depends on the assumptions we make. However, our estimate is likely to be conservative since simulated team payoffs turn out to be significantly lower than the realized ones (Wilcoxon signed-rank test, $p = 0.0012$), whereas there is no significant difference between realized individual performances (Wilcoxon signed-rank test, $p = 0.9486$). This suggests that either team members individually solve different questions and provide more correct answers as a team by sharing their solutions with each other or teams are able to solve more questions by thinking together, making our simulated team payoffs an underestimate. Either way, not joining teams is likely to be a costly decision from a payoff perspective. In the next section, we study the correlates of this decision.

3.3 Correlates of the Willingness to Work in Teams

In addition to studying the impact of the pandemic, our behavioral and belief measures allow us to comprehensively study the determinants of self-selection into teams. Here, we hypothesize the effects of four different types of variables: 1) beliefs (expectations about own individual performance, others' performance, and team performance), 2) preferences (sociability, social confidence, attitudes towards autonomy and responsibility), 3) demographics (gender), 4) structural variables (prior exposure). Table 4 presents the correlates of the willingness to join a team in each round.

An important first finding here is that social confidence is a strong predictor of the willingness

[11] We assume that being able to affect another participant's payoff in a team does not change individual performance, and this is backed by our data on team performance. Recall that in the first three minutes of RAT, both the subjects assigned to individual work and teamwork are encouraged to work alone. The number of questions submitted in that period does not differ across compensation schemes in Round 2 ($p = 0.44$, Mann-Whitney test).

[12] In our experiment, subjects are encouraged to discuss questions and come up with answers together. In taking the maximum, we assume participants can effectively communicate and share their responses with each other within the given time interval. In the post experiment survey, 97% of participants report that their teammates turned on their microphone as instructed during teamwork. Taking the maximum of the number of correct answers is likely to be a conservative estimate of team performance, since it ignores peer learning and collaboration.

to join a team for both rounds. Being willing to perform an ability-related task in public is associated with a 23 (20) percentage points increase in the likelihood of joining a team in Round 1 (Round 2). Working in a team involves facing others and being under scrutiny in an environment with joint payoffs, and those who do not shy away from this kind of pressure are more willing to work in teams.[13]

Our design also allows us to test a new hypothesis regarding the effects of prior exposure to teamwork. In our design, exposure to teamwork can be considered as a treatment variable since participants are assigned to a random compensation scheme most of the time. We find that experiencing teamwork in the first round is a major determinant of the willingness to sort into teams, and increases the likelihood of choosing teamwork in the next round by about 24 percentage points. The reason behind this finding could be that being exposed to teamwork once might reduce potential "entry costs" related to social interactions and help participants embrace the more profitable payment scheme more easily. The effect is strong and robust to the inclusion of many control variables.

Our analysis corroborates the positive relationship between sociability and sorting into socially interactive jobs reported in previous empirical studies, with new evidence from an experimental setting with a behavioral measure of sociability. Participants who would prefer to chat with others in a live chat breakout-room in case they need to wait (instead of sitting alone in a silent breakout-room) are about 19 (17) percentage points more likely to choose teamwork over individual work for Round 1 (Round 2).

We also analyze the relationship between task-related ability and the willingness to join a team. Individual performance in the initial performance round is negatively correlated with the choice of working in a team–a one standard deviation increase in individual performance decreases the likelihood of selecting teamwork by about 8 (5) percentage points in Round 1 (Round 2). After including beliefs about own individual/team performance in columns 2 and 4, the effect is still significant for the first round but loses its significance for the second round. Performance expectations also seem to play an important role in the decision of joining a team. Controlling for actual pre-performance, a participant who expects to have a one-question-higher individual performance is about 5 percentage points less likely to choose to work in a team in both Round 1 and Round 2, and this is significant at the 1 percent level. These results are consistent with previous studies documenting adverse selection into teamwork (Bäker and Pull, 2017; Kuhn and Villeval, 2015). In contrast, participants' guesses about their performance in teams is positively related to self-selection into teams as expected; the size of the effect is around 3 percentage points for Round 1 and 4 percentage points for Round 2.

[13]This interpretation is consistent with (Alan et al., 2020), who report a strong link between social confidence and the willingness to be a leader in a decision environment with common payoffs.

Our analysis of the determinants of selection into teamwork also yields some null results. Before conducting the experiment, we hypothesized that the demand for autonomy and the desire to avoid responsibility could have explanatory power for the choice of teamwork, since working in a team creates a setup where team members influence each other's payoffs. However, we do not observe any association between self selection into teams and the demand for autonomy or the desire to avoid responsibility. The reason behind this could be the bilateral nature of teamwork: both subjects affect the other's payoff in a team, and in the presence of communication, both players can react when another player makes an undesired move. Therefore, participants might not feel like they are taking full responsibility or completely losing autonomy when they work in a team. Also, gender is not significantly related to the willingness to work in teams in our sample.

A potential cause for concern here is multiple hypothesis testing, as we are studying the effects of several variables on team selection. We provide both the original and adjusted p-values based on the Romano-Wolf multiple hypothesis correction (Clarke et al., 2020) in Table 9. The results remain largely similar after adjustment for multiple hypothesis testing. Beliefs about team performance loses significance for Round 1 and becomes significant at the 10 rather than 5 percent level for Round 2, and the willingness to socialize variable becomes significant at the 5 rather than the 1 percent level for both of the rounds.

3.4 Potential Mechanisms of the Treatment Effect

We now turn to exploring why COVID-19 priming may have affected attitudes toward teamwork. The first observation to note here is that, interestingly, none of the behavioral measures that were shown to predict the decision to join a team in Section 3.3 is significantly affected by the treatment (See Figure 4). That is, these variables do not seem to mediate the effect.

A potential channel through which COVID-19 priming may affect self-selection into teams is expectations, that is, how optimistic the individual is about his/her performance in different work environments. As described in Section 2, we elicit a subject's expectation of i) her own performance if she works alone, ii) a randomly chosen participant's performance if he/she works alone, and iii) her performance in a team, if she works with a randomly matched participant.

Table 5 shows that the primed group has more pessimistic expectations of their performance in a team in Round 2 compared to the control group, although assigned teammates' performance in the initial performance round is not different in the treatment and control conditions ($p = 0.76$, Mann-Whitney test).

To investigate to what extent differences in beliefs mediate the effect, we carry out a causal mediation model where all variables which are shown to be a correlate of the decision of joining a team in Section 3.3 can be a potential mediator. We restrict our attention to Round 2, since we

have a sizable and significant treatment effect in the second round. The results in Table 6 show that beliefs about team performance mediate 15.4 percent of the effect of priming COVID-19. That is, while beliefs can explain part of the change, there are likely unobserved factors that the effect goes through. Although this discussion is bound to be speculative, these may include the unobserved cost or fatigue from socialization and the need for solitary activities in introverted individuals, which has been documented in the educational psychology literature especially as it relates to group work (Tuovinen et al., 2020). That is, there might be unobserved costs of interactions with others, and these costs might be higher for the participants primed with COVID-19 after a round of teamwork. Assuming that the prime evokes introversion and introverted individuals have a tendency to need alone time after social interaction, this would manifest in our data as a difference between primed and not-primed participants to revert to individual work after teamwork. This is indeed the case: Among those who do not select but are exogenously assigned to a team in the first round, the propensity to select teamwork in the second round is lower in the primed group (32 percent vs. 51 percent, and this difference is significant at the 5 percent level in a test of proportions ($p = 0.024$). Table 7 also shows that participants who would like to work individually in the first round are 12 percentage points less likely to switch into teamwork in the second round if they are primed with the COVID-19 pandemic (column 1), controlling for the implemented payment scheme in the first round. On the other hand, those who chose to join a team in the first round do not seem to be responsive to COVID-19 priming.

3.5 Using Survey Responses Rather than the Prime

Priming increases the salience of COVID-19 in our virtual lab environment and therefore helps us understand the potential impact of the COVID-19 pandemic on individuals' attitudes towards teamwork. In addition to manipulating the salience of the pandemic within the experiment, we also collect supplementary data on the salience of COVID-19 outside of the experiment. To this end, we ask a set of questions to participants regarding their response to the pandemic (e.g. how strongly the pandemic affected their daily lives and social relations, the level of precautions they took, and how worried they are about COVID-19). We then construct a summary score that captures the self-reported salience of the COVID-19 pandemic (c-alpha=0.71). The first point to note here is that the self-reported salience of COVID-19 does not differ between treatment and control ($p = 0.92$, Mann Whitney test), reassuring us that these survey responses do reflect actual behavior and were not affected by the prime. The measure negatively predicts team selection for both Round 1 and Round 2 (See Table 8, columns 2 and 4). Although not causal, this result is interesting because it shows that the salience of the pandemic for an individual is associated with negative attitudes towards teamwork, consistently with the starting point of this paper.

We then look at whether we can establish a causal link between pandemic salience and teamwork through something other than the prime. As a plausibly exogenous proxy for the impact of the pandemic on an individual, we study the effect of having a close elderly relative on preferences for teamwork.[14] Our analysis shows that having a close elderly relative is associated with a roughly 11 percentage point decrease in the likelihood of team selection in Round 2 (column 4).[15] Another variable that could affect the salience of the pandemic is the risk level of the location where the participant was living at the time of the experiment. This self-reported (and possibly endogenous) risk measure does not seem to be related to self-selection into teams. Finally, we should also note that even after controlling for the salience of the pandemic outside of the experiment through these variables, we still have a significant impact of priming on team selection in Round 2.

4 Discussion and Concluding Remarks

Understanding the impact of the COVID-19 pandemic on health and economic outcomes has attracted great attention among researchers. In this study, we manipulate the salience of the pandemic in an online experiment to provide causal evidence regarding its effect on the willingness to work in teams. Our experimental design creates an environment where working in a team is more advantageous in terms of productivity, which most of the participants correctly anticipate. Controlling for demographic and session-level controls, we show that participants who are reminded of COVID-19 are more likely to prefer working alone to working in teams. This effect is significant at the 5 percent level for the second round of team choice.

The COVID-19 pandemic is salient at least some of the time to almost everyone; wearing masks, seeing others wear masks, COVID-19 news or precautionary policies regularly make the pandemic salient. How "top-of-mind" COVID-19 is can change from day to day, with fluctuations in numbers of cases, COVID-19 related news, cases among friends and family etc. Experimental salience manipulations could allow us to measure how economic decision-making is likely to be influenced by the pandemic during times with high salience, and might provide some suggestion as to what direction the effects may go in, if COVID-19 has led to more permanent changes in preferences. In the context of our research question, self-reports and the proxy measure of elderly relatives on the impact of COVID-19 provide supporting evidence (in addition to the treatment effect of priming) that COVID-19 may have negatively affected preferences towards socially interactive work environments. Note that during the course of our experimental sessions, the number of cases was relatively high in Turkey (with daily cases ranging from 5.277 to 15.082), restaurants

[14] This analysis assumes that the willingness to work in a team is unlikely to be affected by how old one's relatives are, or whether they are close to them.

[15] As expected, the relationship between having a close elderly relative and the self-reported impact of COVID-19 is positive and significant ($p < 0.10$).

were only open for delivery and takeout, face-to-face instruction in K-12 schools and universities was suspended, and curfews were imposed after 9 pm on weekdays and for the whole day on weekends in major cities. This likely makes our estimates conservative, as many of our participants might already have the pandemic in their mind. The high salience of COVID-19 outside of the experiment could also be responsible for the low willingness to join a team in the whole sample in the first round, and therefore the imprecisely estimated treatment effect for the first round.

In addition to putting forward the effects of COVID-19, the results also highlight an inefficiency in terms of the low willingness to engage in teamwork overall. In our analysis of the determinants of the team selection decision, prior exposure to teamwork emerges as a major factor that leads people to work in teams. Consistently with this, it may be that the less interactive learning environment brought about by online teaching due to COVID-19 at universities (e.g. lower levels of team activities in classes, less peer-to-peer learning and studying) (Agostinelli et al., 2022; Werner and Woessmann, 2021) have led students to be less comfortable with teamwork and more comfortable working alone.[16] Whether such shifts in preferences towards individual work would be long-lasting is an interesting question for future research.

The results also suggest that the pandemic may have payoff and efficiency consequences. In particular, a higher salience of the COVID-19 pandemic could lead people to shy away from tasks or even jobs that involve socially interactive work, to the detriment of performance or promotions, as teamwork tends to be very common in work environments and being a team player is a coveted skill. Similarly, to the extent that teamwork and team incentives are beneficial for learning and student outcomes (Babcock et al., 2015; Maciejovsky et al., 2013; Michaelsen et al., 1989), shifting preferences towards individual work may have efficiency consequences in educational settings as well. In terms of how to mitigate such inefficiencies, our results suggest the simple policy implication of implementing compulsory team activities, which could potentially bring down the costs of interacting with others in future team contexts. Given that social confidence is also a major predictor of self-selection into teams, policies or programs that lead employees/students to develop public performance skills or reduce social performance anxiety could also lead to a higher willingness to engage in teamwork. Such policies may be particularly effective to restore efficiency as COVID-19 gradually loses salience and the world recovers from the pandemic.

[16] During the period when we collected the data for this paper, social interactions among Koc University students were very limited: all courses were fully online and students were not allowed to enter the campus for any personal reason, including group study.

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Tables

TABLE 1: TREATMENT EFFECT ON THE WILLINGNESS TO WORK IN A TEAM

	Team selection (Round 1)		Team selection (Round 2)	
	(1)	(2)	(3)	(4)
COVID-19 priming	-0.036	-0.038	-0.107**	-0.122**
	(0.07)	(0.06)	(0.05)	(0.05)
Female		-0.037		0.001
		(0.06)		(0.06)
Assigned to a team (R1)			0.287***	0.295***
			(0.04)	(0.04)
Session level and demographic controls	×	✓	×	✓
Control mean	0.29	0.29	0.50	0.50
N	286	285	286	285

The table reports marginal effects from logistic regressions. The dependent variable is a binary indicator of selecting teamwork in Round 1 (columns 1-2) or Round 2 (columns 3-4). Demographic controls include university major and year. Session level controls include session size. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

TABLE 2: TREATMENT EFFECT ON THE NUMBER OF TIMES TEAMWORK IS SELECTED

	Never		Once		Twice	
	(1)	(2)	(3)	(4)	(5)	(6)
COVID-19 priming	0.121**	0.131**	-0.104**	-0.104**	-0.018	-0.025
	(0.06)	(0.06)	(0.05)	(0.05)	(0.06)	(0.06)
Assigned to a team (R1)	-0.239***	-0.247***	0.174***	0.178***	0.081	0.081*
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Female		0.010		0.020		-0.029
		(0.06)		(0.04)		(0.05)
Session level and demographic controls	×	✓	×	✓	×	✓
Control mean	0.46	0.46	0.29	0.29	0.25	0.25
N	286	285	286	285	286	285

The table reports marginal effects from logistic regressions. The dependent variable in column 1-2 (3-4, 5-6) is the binary indicator of selecting teamwork never (once, twice) in the two rounds. Demographic controls include university major and year. Session level controls include session size. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

TABLE 3: THE IMPACT OF WORKING IN A TEAM ON PERFORMANCE

	Performance (round 1)		Performance(round 2)	
	(1)	(2)	(3)	(4)
Assigned to a team (R1)	1.997***	2.064***		
	(0.39)	(0.36)		
Assigned to a team (R2)			1.548***	1.561***
			(0.35)	(0.35)
COVID-19 priming	0.233	0.230	-0.247	-0.257
	(0.40)	(0.39)	(0.29)	(0.29)
Female		-0.475		-0.134
		(0.33)		(0.27)
Individual Performance (Std)		0.587***		0.335**
		(0.16)		(0.15)
Individual mean	14.97	14.97	14.93	14.93
N	286	286	286	286

Coefficient estimates reported are from OLS regressions where the dependent variable is the number of correct answers submitted in Round 1 (columns 1-2) or Round 2 (columns 3-4). Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

TABLE 4: CORRELATES OF THE WILLINGNESS TO WORK IN TEAMS

	Round 1		Round 2	
	(1)	(2)	(3)	(4)
Female	-0.007	-0.025	0.011	-0.011
	(0.05)	(0.05)	(0.05)	(0.05)
Individual Performance (Std)	-0.079***	-0.043**	-0.047**	-0.025
	(0.02)	(0.02)	(0.02)	(0.02)
Willing to socialize	0.167***	0.194***	0.182***	0.173***
	(0.06)	(0.06)	(0.06)	(0.05)
Social confidence	0.227***	0.231***	0.173***	0.200***
	(0.05)	(0.05)	(0.06)	(0.06)
Desire to avoid responsibility	-0.002	-0.004	-0.004	-0.011
	(0.01)	(0.01)	(0.01)	(0.01)
Demand for autonomy	-0.018	-0.013	-0.008	-0.001
	(0.01)	(0.01)	(0.01)	(0.01)
Guess-own performance (R1)		-0.045***		
		(0.01)		
Guess-team performance (R1)		0.029**		
		(0.01)		
Guess-own performance (R2)				-0.046***
				(0.01)
Guess-team performance (R2)				0.038**
				(0.02)
COVID-19 priming	-0.037	-0.024	-0.108**	-0.101**
	(0.06)	(0.06)	(0.05)	(0.05)
Assigned to a team (R1)			0.296***	0.244***
			(0.05)	(0.05)
Session level and demographic controls	✓	✓	✓	✓
N	256	256	256	256

The table reports marginal effects from logistic regressions where the dependent variable is a binary indicator of selecting teamwork in Round 1 (columns 1-2) or Round 2 (columns 3-4). Demographic controls include university major and year. Session level controls include session size. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

TABLE 5: BELIEFS AS POTENTIAL MECHANISMS

	Round 1			Round 2		
	(1)	(2)	(3)	(4)	(5)	(6)
	Own	Other	Team	Own	Other	Team
COVID-19 priming	0.370	0.295	0.398	-0.532	-0.554	-0.896***
	(0.37)	(0.26)	(0.34)	(0.45)	(0.36)	(0.27)
Female	-0.572	-0.516	-0.355	-0.649	0.410	-0.083
	(0.43)	(0.39)	(0.34)	(0.49)	(0.43)	(0.36)
Assigned to a team (R1)				-0.979**	-0.206	0.162
				(0.37)	(0.36)	(0.27)
Constant	13.517***	13.555***	15.795***	14.909***	14.855***	16.095***
	(0.86)	(0.56)	(0.66)	(0.87)	(0.91)	(0.53)
Session level and demographic controls	✓	✓	✓	✓	✓	✓
Control mean	15.07	14.69	16.75	14.59	15.31	17.45
N	285	285	285	285	285	285

The table presents results from OLS regressions where the dependent variable is the participant's expectation of own individual performance, a randomly chosen participant's performance and (own) team performance in Round 1 (columns 1-3) or Round 2 (columns 4-6). Demographic controls include university major and year. Session level controls include session size. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

TABLE 6: CAUSAL MEDIATION ANALYSIS (ROUND 2)

	Guess, Own	**Guess, Other**	**Guess, Team**
ACME	-0.0056	-0.0007	**-0.0147**
	[-.029,.011]	[-.009, .005]	**[-.039 -.0005]**
ADE	-0.087	-0.085	-0.081
	[-.185, -.0114]	[-.183, -.0098]	[-.180, -.0062]
TOTAL	-0.093	-0.086	-0.095
	[-.172, -.022]	[-.182, -.010]	[-.216 -.007]
Percentage Mediated	5.98 %	0.8%	**15.4%**

This table presents the results of the mediation analysis. Potential mediators are subject's expectation of i) her own performance if she works alone, ii) a randomly chosen participant's performance if he/she works alone, and iii) her performance in a team. ACME: Average causal mediation effect, ADE: Average direct effect. The number of simulations is 1000.

TABLE 7: HETEROGENEOUS TREATMENT EFFECTS BY PREFERENCE FOR TEAMWORK IN ROUND 1

	Team selection (Round 2)			
	(1)	(2)	(3)	(4)
	Select Ind (R1)	Select Ind (R1)	Select Team (R1)	Select Team (R1)
COVID-19 priming	-0.124**	-0.129***	0.024	0.122
	(0.05)	(0.05)	(0.07)	(0.14)
Assigned to a team (R1)	0.313***	0.311***	0.236**	0.479***
	(0.05)	(0.05)	(0.11)	(0.11)
Female		0.026		-0.107
		(0.05)		(0.09)
Session level and demographic controls	×	✓	×	✓
Control mean	0.35	0.35	0.35	0.35
N	209	208	77	46

This table reports marginal effects from logistic regressions where the dependent variable is a binary indicator of selecting teamwork in Round 2. Demographic controls include university major and year. Session level controls include session size. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

TABLE 8: ALTERNATIVE MEASURES OF SALIENCE OF THE COVID-19 PANDEMIC

	Team selection (Round 1)		Team selection (Round 2)	
	(1)	(2)	(3)	(4)
COVID-19 priming	-0.038	-0.046	-0.122**	-0.123**
	(0.06)	(0.06)	(0.05)	(0.05)
Female	-0.037	-0.008	0.001	0.031
	(0.06)	(0.06)	(0.06)	(0.06)
Self reported impact of Covid-19		-0.185***		-0.125**
		(0.05)		(0.05)
Having an elderly relative		-0.047		-0.113***
		(0.05)		(0.04)
High-risk neighborhood		0.008		-0.036
		(0.08)		(0.07)
Medium-risk neighborhood		-0.053		-0.011
		(0.07)		(0.07)
Assigned to a team (R1)			0.295***	0.294***
			(0.04)	(0.04)
Session level and demographic controls	✓	✓	✓	✓
Control mean	0.29	0.29	0.50	0.50
N	285	285	285	285

This table reports marginal effects from logistic regressions. The dependent variable is a binary indicator of selecting teamwork in Round 1 (columns 1-2) or Round 2 (columns 3-4). Self reported impact of COVID-19 is the summary score generated from participants' answers to survey questions. Demographic controls include university major and year. Session level controls include session size. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

TABLE 9: ORIGINAL AND ROMANO-WOLF P-VALUES

	Original p-value	Romano-Wolf p-value
Round 1:		
Female	0.6282	0.8964
Ind. perf. (std)	0.1297	0.4582
Willing to socialize	0.0002***	0.0120**
Social confidence	0.0000***	0.0040***
Demand for autonomy	0.7756	0.8964
Desire to avoid responsibility	0.2756	0.7012
Guess-own performance (R1)	0.0001***	0.0080***
Guess-team performance (R1)	0.0203**	0.1554
Round 2:		
Female	0.8526	0.9801
Ind. perf. (std)	0.3970	0.8327
Willing to socialize	0.0045***	0.0319**
Social confidence	0.0009***	0.0040***
Demand for autonomy	0.4499	0.8327
Desire to avoid responsibility	0.9183	0.9801
Assigned to a team (R1)	0.0000***	0.0040***
Guess-own performance (R2)	0.0013***	0.0080***
Guess-team performance (R2)	0.0234**	0.0797*

This table reports the multiple comparisons adjusted p-values for the coefficients in Table 4 (columns 2 and 4).

Figures

FIGURE 1: EXPERIMENTAL DESIGN

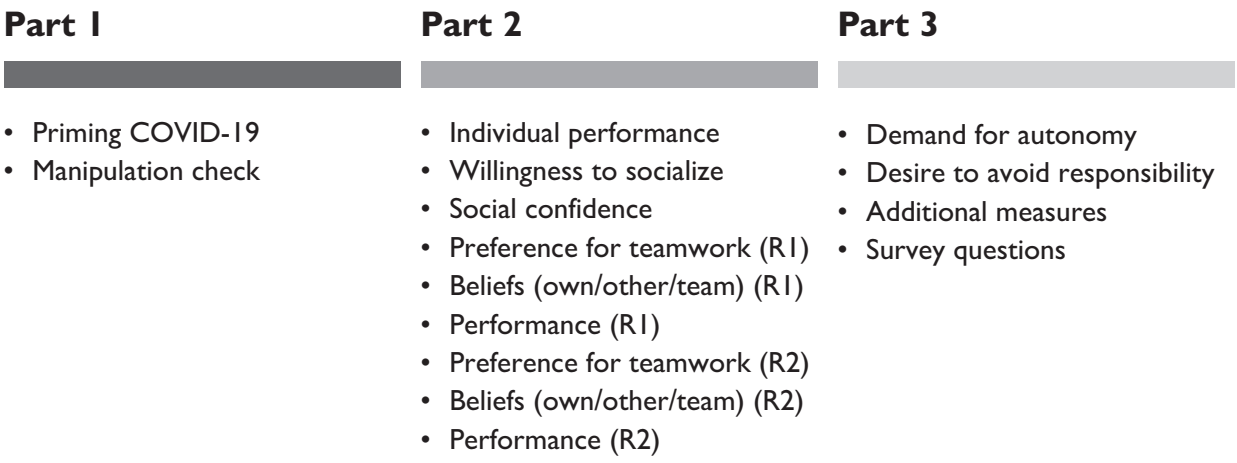
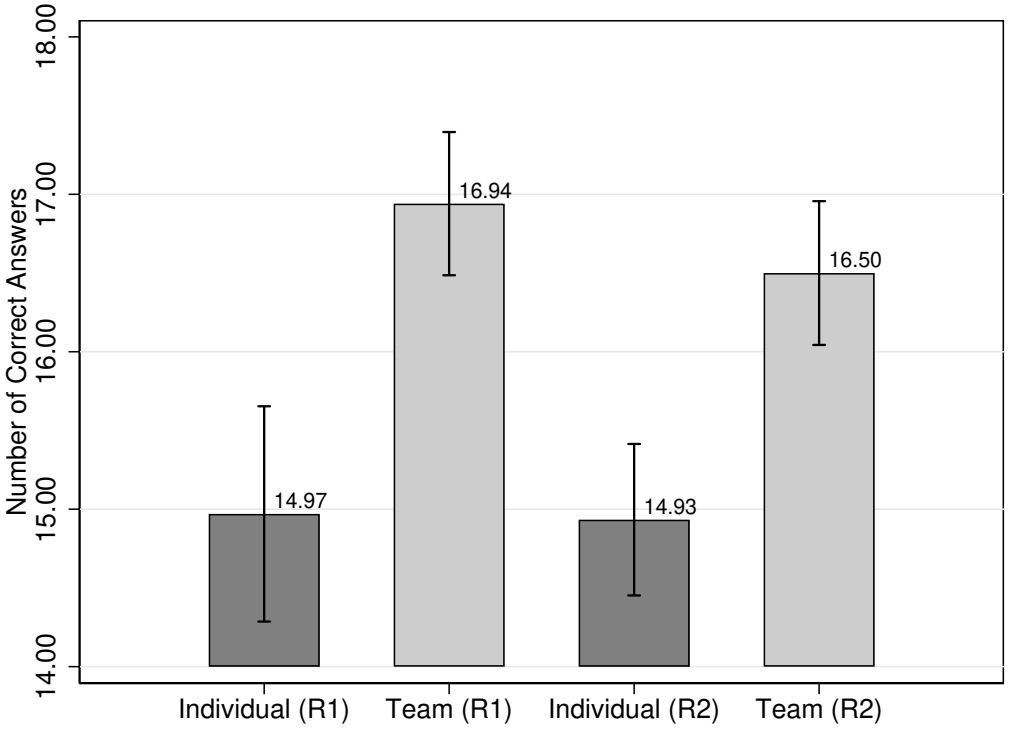
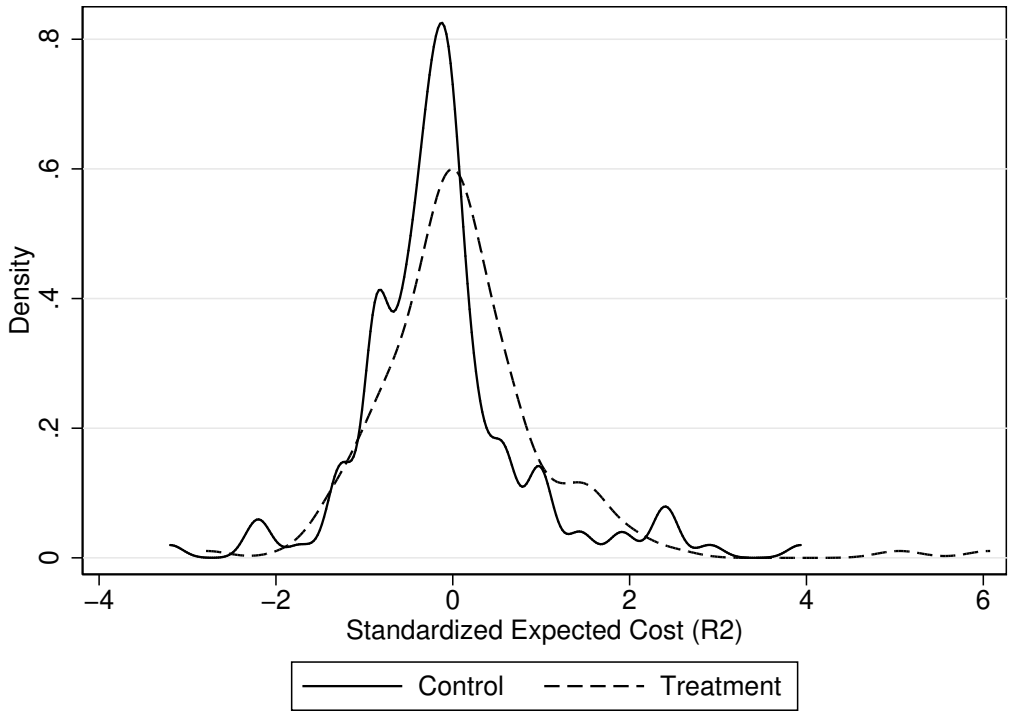


FIGURE 2: THE PRODUCTIVITY ADVANTAGE OF TEAMWORK



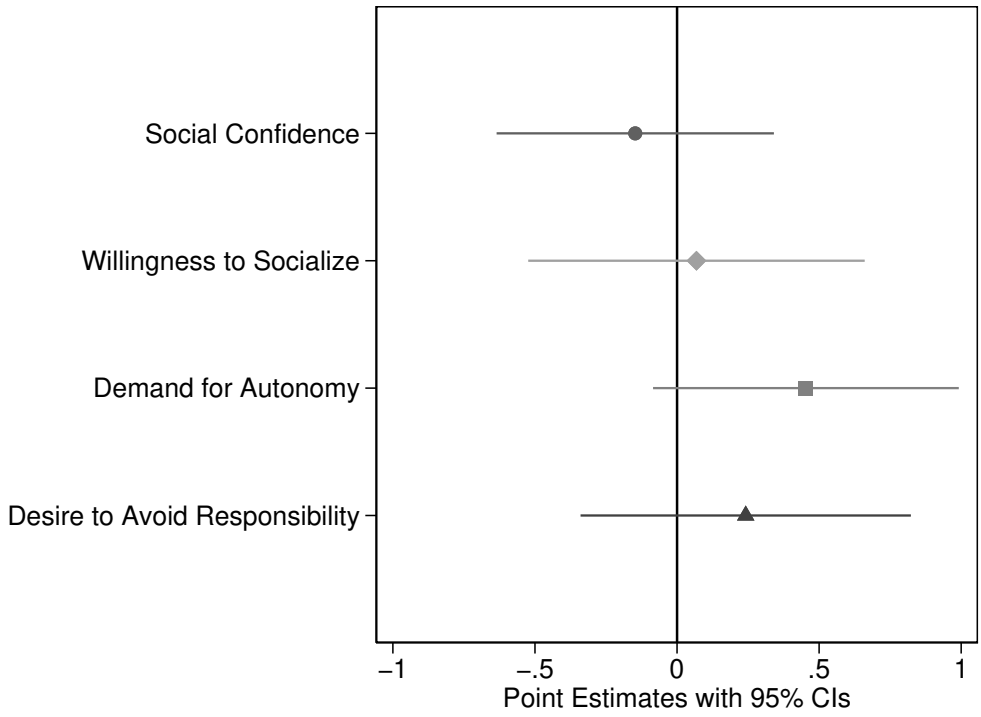
Notes: This figure shows the impact of random assignment to teamwork on performance, separately for Round 1 and 2. Error bars show 95% confidence intervals of the mean.

FIGURE 3: EXPECTED INDIVIDUAL COSTS IN ROUND 2



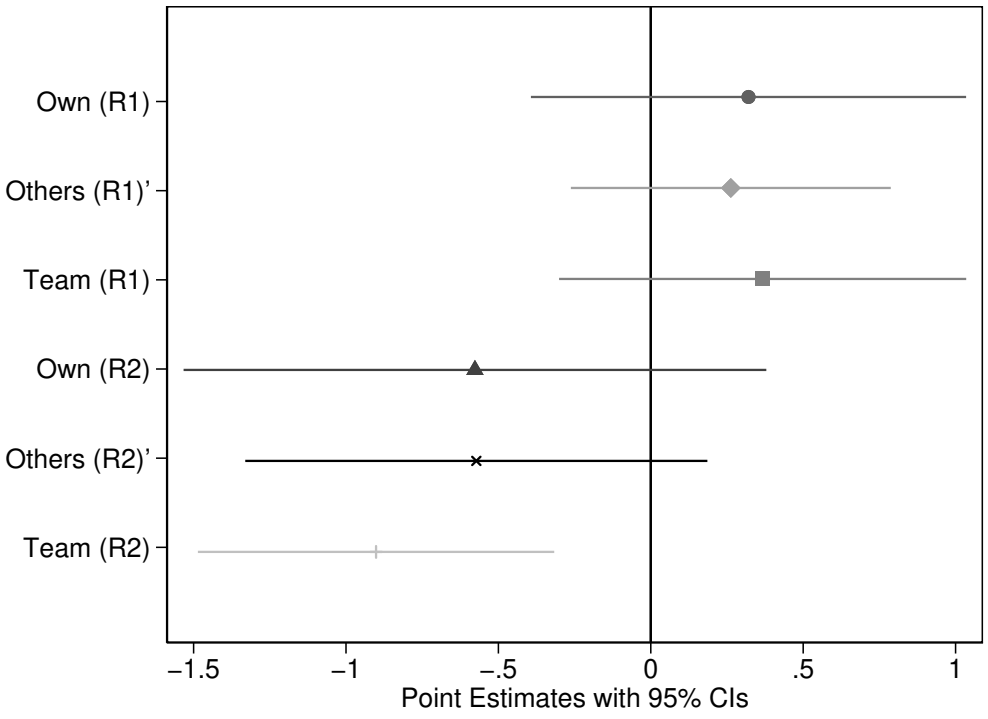
Notes: This figure shows the kernel density plots for standardized individual costs in Round 2 for the control and treatment group.

FIGURE 4: POTENTIAL MECHANISMS (BEHAVIORAL MEASURES)



Notes: This figure shows the treatment effect of priming COVID-19 on different behavioral measures. Demographic controls include university major and year. Session level controls include session size.

FIGURE 5: POTENTIAL MECHANISMS (BELIEFS)



Notes: This figure shows the treatment effect of priming COVID-19 on expectations of performances in Round 1 and 2. Demographic controls include university major and year. Session level controls include session size.

Appendix. Supplementary Materials

A Additional Analyses

TABLE A1: BALANCE TABLE

Variable	(1) Control	(2) Treatment	(3) Difference
Female	0.54	0.58	0.04
	(0.50)	(0.50)	[0.545]
Age	20.40	20.82	0.41
	(2.26)	(2.42)	[0.316]
Time spent at campus(year)	1.48	1.66	0.18
	(1.56)	(1.64)	[0.455]
Individual performance	5.53	5.62	0.09
	(1.89)	(1.87)	[0.652]
Major: Management/Economics	0.30	0.20	-0.10
	(0.46)	(0.40)	[0.113]
Major: Medicine/Nursing	0.05	0.10	0.05
	(0.22)	(0.30)	[0.240]
Major: Engineering	0.32	0.38	0.07
	(0.47)	(0.49)	[0.336]
Major: Natural Sciences	0.10	0.10	-0.00
	(0.30)	(0.30)	[0.910]
Major: Social Sciences	0.23	0.23	-0.00
	(0.42)	(0.42)	[0.915]
Session size	9.83	9.65	-0.18
	(2.85)	(3.20)	[0.861]

Standard deviations are given in parentheses. The difference coefficient in column (3) is calculated by regressing the variable of interest on the binary treatment variable, p-values are given in brackets. Standard errors are clustered at the session level. * $p<0.01$, ** $p<0.05$, *** $p<0.01$.

TABLE A2: THE IMPACT OF WORKING IN A TEAM ON PERFORMANCE (CONTROL VS. TREATMENT)

	Control				Treatment			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	R1	R1	R2	R2	R1	R1	R2	R2
Assigned to a team (R1)	2.314***	2.423***			1.706**	1.711***		
	(0.47)	(0.43)			(0.63)	(0.59)		
Assigned to a team (R2)			2.059***	1.985***			1.088*	1.147*
			(0.41)	(0.43)			(0.54)	(0.57)
Female		-0.341		-0.072		-0.563		-0.125
		(0.38)		(0.33)		(0.52)		(0.45)
Individual Performance (Std)		0.491**		0.407**		0.716**		0.223
		(0.18)		(0.19)		(0.27)		(0.26)
Individual mean	14.65	14.65	14.75	14.75	15.21	15.21	15.07	15.07
p(Control=Treatment, Assigned to a team (R1))	0.429	0.316						
p(Control=Treatment, Assigned to a team (R2))			0.145	0.228				
N	139	139	139	139	147	147	147	147

Coefficient estimates are from ordinary least square estimations in the control(columns 1-4) and treatment sample (columns 5-8). The dependent variable is the number of correct answers submitted in Round 1 (columns 1-2 and 5-6) or Round 2 (columns 3-4 and 7-8). Standard errors are clustered at the session level. * $p<0.01$, ** $p<0.05$, *** $p<0.01$.

TABLE A3: MANIPULATION CHECK

	COVID-19 related answers(standardized)	
	(1)	(2)
COVID-19 priming	0.175**	0.150*
	(0.08)	(0.08)
Constant	0.439***	-0.031
	(0.14)	(0.25)
Date	✓	✓
Session level and demographic controls	×	✓
Control mean	-0.07	-0.07
N	286	285

Coefficient estimates are from ordinary least square estimation where the dependent variable is the standardized value of the COVID-19 related answers submitted in manipulation check exercise. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

B Experimental Instructions

B.1 Priming Task

In this game, you will be given six words in each question. Please find the extraneous word and arrange the five remaining words to create a grammatically correct and meaningful five-word sentence in the "natural order". By natural order, we mean the subject of a sentence being located at the beginning of the sentence and the predicate being located at the end. Sentences must contain strictly five words, sentences with less or more than five words will be considered incorrect. Please do not write the extraneous word in the answer box and do not put any punctuation marks at the end of the sentence. Here are some examples:

Example: "the fairy tale boy fell asleep before ended" (*masal çocuk daldı karışık bitmeden uykuya* in Turkish)

Correct: "the boy fell asleep before the fairy tale ended" (*"çocuk masal bitmeden uykuya daldı"* in Turkish)

Incorrect: (*"çocuk uykuya daldı masal bitmeden"* in Turkish) – This is an incorrect answer even though the sentence is meaningful, since it is not in natural order (that is, the predicate is not at the end). [17]

B.2 The Main Body of the Experiment

Part 1: Individual Performance

This game consists of four parts. If this game is selected for calculating your final earnings at the end of the experiment, we will randomly choose one of these four parts, and your earnings in that part will determine your final payment.

In the first part, you will play a word game. You will be given three words in each question and asked to find a common word that creates a meaningful pair when put before or after each of these three words. You only need to write the word that is the common among all pairs in the answer form. You do not need to report each word pair or whether the common word comes before or after other words. Here is an example.

Example: *"cream, skating, water"*

The correct answer is *"ice"* because the words *"ice cream", "ice skating", and "ice water"* are all meaningful, when the word "ice" comes before of each of these three words. For example, the following answers would be wrong: "cold", "board", "ice cream/ice skating /ice water".

There are 10 questions in total and you have 4 minutes to complete this part. You will earn 3 TL per correct answer. If this part is selected for payment, your earnings will be equal to your earnings in this part. You can start when you are ready. When you click the "start game" button, your time will start.

Part 2: Willingness to Socialize

In the upcoming parts, there may be instances where you may need to wait for some time (3-4 minutes). If this happens, we can either:

[17] We do not provide an English translation, as the example builds on the specific sentence structure of Turkish.

1. Place you in a Zoom chat room where you can chat with other participants while waiting.

2. Place you in a Zoom silent room where you can wait alone, with camera and microphone turned off.

In case you need to wait, which type of room would you like to wait in? If there is no need for waiting, your choice will not be implemented. If there is a need for waiting, you will be informed.

[Subject makes choice, clicks to proceed.]

Part 2: Social Confidence

In this part, you will play the same game that you played in the first part (finding the word that fits the given three words), but with new questions. Before starting this part, we will ask you a question: At the end of the experiment, one participant will solve 3 questions of the same task, in front of all participants by turning on his/her camera and microphone. The participant will be given 1.5 minutes for these three questions and will earn 5 TL for every correctly answered question, in addition to his/her normal earnings from the experiment. In case there is more than one volunteer, we will select one of the volunteers randomly.

Would you like to be the one to solve these 3 questions in front of other participants at the end of the experiment, camera and microphone on?

[Subject submits answer, proceeds.]

Part 2: Choice of Incentive Scheme

In this section, you will see 20 questions similar to those in the first section and asked to answer them in 8 minutes. If this section is selected for payment, you will earn 3 TL per correct answer. Additionally, in this section, we will present you with two alternative payment schemes under which you can play the game.

Individual: In this scenario you will be placed in a single-person Zoom breakout room and answer the questions individually, without communicating anyone and with your microphone/camera turned off.

Team: In this scenario you will be randomly matched with another participant, and will be placed in a Zoom breakout room together with your assigned partner. You will be asked to turn on your camera and microphone. For the first 3 minutes, you will work individually, and in the remaining 5 minutes, you will communicate and work on questions together with your teammate. Your earnings will be calculated by taking the average of the number of correct answers your teammate and you provide individually.

Even though you will work on the questions as a team, both of you need to submit the answers individually. That is, both of you should type the answer into boxes on your own screen.

Now, here is how we decide which game you play. You will either play in the scenario you choose or the computer will randomly choose one of the two scenarios for you and you will play in that randomly selected scenario.

Now we will ask you to choose which scenario you want to play in. Recall that either your decision will be implemented or you will play in the scenario that the computer chooses for you.

"Would you like to play the word game individually or as a team?"

- *I want to play the game individually*

- *I want to play the game as a team with a randomly assigned participant*

[Subject makes choice, proceeds.]

Before we start the game, we have three questions for you. One of these three questions will be randomly selected, and if your answer to that question turns out to be correct, you will gain an extra 2 TL over and above your earnings in this part.

If you play the game individually in the next round, how many out of the 20 questions will you be able to solve correctly in 8 minutes?

- If a randomly chosen participant plays the game individually in the next round, how many out of the 20 questions will he/she be able to solve correctly in 8 minutes?
- If you play the game as part of a team with a randomly selected participant in the next round, how many questions will you be able to solve correctly in 8 minutes as a team?
- Please confirm that you are on the browser for the task now. After confirming, please do not leave your computer screen because we will continue when other participants are also on the same browser page.

[Subject is shown the assigned incentive scheme, reads related instructions and reminders, and proceeds to solve 20 questions in 8 minutes, either individually or as part of a team]

[The phases of incentive scheme choice, belief elicitation and task performance are repeated for Round 2]

Detailed instructions for the demand for autonomy, desire to avoid responsibility tasks are available upon request

B.3 Post-Experiment Questionnaire

Thank you for your participation in the study. While your earnings are being calculated, we would like to ask you some questions about yourself.

1. Gender:
2. Age:
3. Major:
4. To what extent has the coronavirus period affected your life?
    - Did not affect it at all
    - Did not affect it much
    - Affected it a little
    - Affected it a lot

5. Individually, how strict were the precautions you have taken during this time?
    - I have taken very strict precautions and limited my social activities significantly.
    - I have taken precautions but tried not to compromise too much on my social activities.
    - I have behaved in a quite relaxed way, and tried to live my life as before.
6. Generally, how anxious does COVID-19 make you feel?
    - Very anxious
    - Quite anxious
    - Somewhat anxious
    - A little anxious
    - Not anxious at all
7. Do you think that your social relationships were negatively affected by the pandemic?
    - It was affected very negatively
    - It was affected somewhat negatively
    - It was not affected much
    - It was not negatively affected at all
8. To what extent are you worried about the pandemic?
    - To great extent
    - Quite a lot
    - A little
    - Not much
    - Not at all
9. Do you have members older than 65 in your family (among close family that you visit or see frequently)?
    - Yes [If yes, how many?]
    - No
10. Do you think the impact of COVID-19 is exaggerated?
    - Absolutely not
    - No
    - Neither yes nor no
    - Yes
    - Absolutely yes

11. How risky is the area you live in terms of COVID-19?

    - A high-risk area
    - A medium-risk area
    - A low-risk area

12. How risky is the area you live in terms of COVID-19?

    - A high-risk area
    - A medium-risk area
    - A low-risk area

    Now, we will ask you three questions related to your teamwork experience. Please answer these questions honestly, your answers will not affect your payment.

13. Did the participants that you worked together with turn on their camera?

    - I was matched with two participants and both of them turned on their camera.
    - I was matched with two participants and the first one turned on his/her camera, but the second one did not.
    - I was matched with two participants and the first one did not turn on his/her camera, but the second one did.
    - I was matched with two participants and none of them turned on his/her camera.
    - I was matched with one participant and he/she turned on his/her camera.
    - I was matched with one participant and he/she did not turn on his/her camera.
    - I was not matched with any participant, I worked individually in both rounds.

14. Did the participants that you worked together turn on their microphone?

    - I was matched with two participants and both of them turned on their microphone.
    - I was matched with two participants and the first one turned on his/her microphone, but the second one did not.
    - I was matched with two participants and the first one did not turn on his/her microphone, but the second one did.
    - I was matched with two participants and none of them turned on his/her microphone.
    - I was matched with one participant and he/she turned on his/her microphone.
    - I was matched with one participant and he/she did not turn on his/her microphone.
    - I was not matched with any participant, I worked individually in both rounds.

15. Did the participants that you worked together with talk to you while you were working individually, in the first three minutes of the teamwork?

    - I was matched with two participants and both of them talked.

- I was matched with two participants and the first one talked, but the second one did not.
- I was matched with two participants and the first one did not talk, but the second one did.
- I was matched with two participants and none of them talked.
- I was matched with one participant and he/she talked.
- I was matched with one participant and he/she did not talk.
- I was not matched with any participant, I worked individually in both rounds.

C Questions

C.1 Priming Task

We provide the original sentences we used for the control and treatment group as well as English translations of correct answers below.

Treatment group

1. ”yol işitme koronavirüs araba açabilir kaybına”
   – Correct Answer: coronavirus can cause hearing loss
2. ”eğitimleri alıyor ilkokulda kodlama öğrenciler gittikçe”
   – Correct Answer: students receive coding training in primary school
3. ”sayısı defter vaka milyonu aştı kırk”
   – Correct Answer: the number of cases has exceeded forty million
4. ”evlerine talep köy olan arttı çiçek
   – Correct Answer: demand for village houses has increased.
5. ”araba artıyor tedavi sayısı görenlerin hastanede”
   – Correct Answer: the number of hospitalized patients is increasing.
6. ”çorba dağıtıyor kabile yaşayanlara sokakta sıcak”
   – Correct Answer: she distributes hot soup to the people living on the street.
7. ”dönem bilinmiyor kiraz etkileri uzun aşının”
   – Correct Answer: long-term effects of the vaccines are unknown.
8. ”okyanusta türler yeni keşfetti araştırmacılar bilişsel”
   – Correct Answer: researchers discovered new species in the ocean.
9. ”katsayısını bulaşıcılık mutasyon virüsün eğleniyor arttırdı”
   – Correct Answer: the mutation increased the contagiousness of the virus.
10. ”saldırılardan yazılım sağlıyor verilerin korunmasını kaçarak”
    – Correct Answer: The software ensures that data is protected from attacks.

Control group

1. ”barajlarında verildi istanbul yapıldı alarmı susuzluk”
   – Correct Answer: there has been a water shortage alarm in Istanbul dams
2. ”eğitimleri alıyor ilkokulda kodlama öğrenciler gittikçe”
   – Correct Answer: students receive coding training in primary school.
3. ”ağrılar belirtisi geçmeyen kanser iade olabilir”
   – Correct Answer: chronic pain can be a sign of cancer.
4. ”evlerine talep köy olan arttı çiçek”
   – Correct Answer: demand for village houses has increased.
5. ”araba kullanmak boyu ilaç ömür zorundaydı”
   – Correct Answer: she had to use drugs for the rest of her life.
6. ”çorba dağıtıyor kabile yaşayanlara sokakta sıcak”
   – Correct Answer: she distributes hot soup to the people living on the street.
7. ”sürdüğü güney sınırında kiraz bildiriliyor çatışmaların”
   – Correct Answer: military conflict is reportedly continuing on the southern border.
8. ”okyanusta türler yeni keşfetti araştırmacılar bilişsel”
   – Correct Answer: researchers discovered new species in the ocean
9. ”durdurdu kazası zincirleme eğleniyor trafik trafiği”
   – Correct Answer: A chain accident has stopped the traffic.
10. ”saldırılardan yazılım sağlıyor verilerin korunmasını kaçarak”
    – Correct Answer: the software ensures that data is protected from attacks.

D Simulation Procedure

Potential earnings under the individual compensation scheme are calculated as follows:

1. We run the regression (1) for the subjects working individually in both rounds and regression (2) for the subjects working individually in R2
   - $P_2 = \delta + \beta_1 P_1 + \beta_2 P_{ind}$ (1)
   - $P_2 = \theta + \beta_3 P_{ind}$ (2)
2. We estimate $\hat{\delta}$, $\hat{\theta}$, $\hat{\beta}_1$, $\hat{\beta}_2$, $\hat{\beta}_3$
3. If the participant worked individually in the second round, we take the realized performance as individual performance.
4. If the participant worked in a team only in R2, we predict the individual performance $\hat{P}_2$ using (1).

5. If the participant worked in a team, both in R1 and R2, we predict the individual performance $\hat{P}_2$ using (2).

The expected earnings under the team-based pay are simulated as follows:

1. We take all participants and simulate all possible pairs (within treatment and control)
2. For each team, we calculate the team performance by taking the maximum of individual predicted performances of team members
3. For each subject, calculate the average team performance (for all possible pairs)