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

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To my loving family

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 either choose to work on a real effort task individually or together with a partner through online communication. We find that although working in a team is more profitable, participants primed with COVID-19 are less likely to self-select into teamwork, with potential payoff losses. In our sample, most of the participants make costly decisions by preferring individual work over teamwork despite their expectations of the productivity advantage of teamwork. Our analysis shows that social confidence, the pure willingness to socialize and exposure to teamwork significantly predict the decision of avoiding socially interactive work environments and relevant efficiency consequences.

Özet

Bu çalışma, COVID-19 salgınını hatırlatmanın bireylerin takımda çalışma istekliliği üzerindeki etkisini çevrimiçi deneyler aracılığıyla araştırmaktadır. Deneyde katılımcılar bireysel ya da rastgele başka bir katılımcı ile çevrimiçi takım olarak çalışacakları iki farklı performans ortamı arasında seçim yapar. Sonuçlar takım olarak çalışmanın bireysel çalışmaya göre ortalamada daha kazançlı olmasına rağmen koronavirüs hatırlatılan katılımcıların bir görevi takım olarak yapmaya kontrol grubuna göre daha az istekli olduğunu ve kazanç kayıpları yaşadığını göstermektedir. Ayrıca örneklemde birçok katılımcının takım çalışmasının kazanç açısında avantajlı olduğuna inanmalarına rağmen bireysel çalışmayı tercih ederek ekonomik olarak maliyetli kararlar verdikleri gözlemlenmektedir. Yapılan analizlere göre, sosyal güven, sosyalleşme arzusu ve daha önce grup çalışmasını deneyimleme katılımcıların sosyal etkileşimli çalışma ortamlarına girme istekliliğini ve aldıkları kararların ekonomik maliyetlerini önemli ölçüde tahmin etmektedir.

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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 (WHO) as a pandemic (WHO, 2020), many countries went into lockdown, or at least strongly recommended their citizens to practice social distancing and isolation. In the ensuing period, many social interactions including departmental teams in the workplace, study groups in schools and personal relationships between family members have been disrupted, and people have voluntarily or reluctantly stayed at home for long periods of time, interacting with other people much less than they did before the pandemic.

The experience of physical distancing and social isolation could be expected to change people's attitudes toward socialization with others. If, for example, individuals realize that they can derive enjoyment from solitary activities, or get used to an individualistic lifestyle during the pandemic period, their desire to spend time with others might decrease. Alternatively, people who are deprived of their usual social connections might crave social interaction, and prefer to interact with others whenever possible. Previous studies from the psychology literature support the idea of 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 this paper, we study the impact of COVID-19 on self-selection into a social (as opposed to individual) work environment. To the extent that the valuation of social interactions matters for the choice of employment and workplace behaviors, changes to preferences for being alone vs. interacting with others brought about by Covid-19 would also potentially have implications for behaviors and outcomes at

the workplace. From an economic perspective, efficiency is an important concern here: 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), any preference shift toward individual work could bring about potential payoff losses and efficiency consequences in the labor market.

To be able to study attitudes towards socially interactive work and their efficiency consequences, 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 these attitudes. 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 the task individually, or together with another person, camera and microphone on, in a Zoom breakout room. In order to study the effects of exogenous exposure to and experience with teamwork on choices, we then assign a large random group among 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 paper contributes to two main strands of the literature. First, it closely relates to the literature documenting the impact of external shocks on preferences. There is now a large body of literature showing that exposure to natural disasters, economic crises, or violence can bring about changes in economic preferences and behaviors such as risk-taking, intertemporal decisions and prosocial behavior (for

[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).

an overview, see Ertac (2020)). As another kind of natural disaster, the effects of the COVID-19 pandemic on preferences has also drawn considerable interest. For risk and time preferences, the existing literature has found that these preferences have remained largely stable during the pandemic (Angrisani et al., 2020; Drichoutis and Nayga, 2020). For social preferences, studies have produced mixed results. 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 foreigners, and find that participants primed with COVID-19 show 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. To our knowledge, this is the first study focusing on the effect of COVID-19 on the willingness to work under different compensation schemes.

Our study is also related to the literature on the determinants of self-selection into teams. With teamwork gaining prevalence in the workplace and being a team player being touted as a "21st century skill" (Rotherham and Willingham, 2010), it is particularly important to understand what derives the willingness to work in teams. While self-selection into competition has received a lot of attention, particularly along the gender aspect, self-selection into teamwork has been studied in a smaller set of studies. Previous studies have identified gender, ability, and sociability 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. They find that the gender gap partly stems from women's higher expectations regarding their potential teammate's ability, suggesting that expectations play a crucial role in the decision of joining a team. For the relationship between ability and the willingness to work in teams, the results are ambiguous in the literature. While Kuhn and Villeval (2015) document an adverse selection, Cooper et al. (2021) show that adverse selection disappears in an environment where teamwork includes communication and possibly long-term teaching. On the other hand, Hamilton et al. (2003) study a textile factory that shifted from piece-rate to team incentives over the course of three years and find that high-productivity workers join teams first despite the potential loss of earnings. Although the authors do not provide a complete explanation about the reasons behind this observation, they suggest that workers may choose team-based incentives likely due to nonpecuniary benefits

from socialization and establish a positive link between the desire for socialization and the willingness to work in a socially interactive environment. This explanation is also supported by Krueger and Schkade (2008), who find that sociable individuals who spend more time with their friends and family members out of work are more likely to sort into jobs that offer more interaction with colleagues. Our paper builds on this background, and poses the question of whether an external shock that could plausibly change the preferences for socialization, would affect the choice of incentives in the workplace.

Experimental studies on teamwork have generally conceptualized teamwork as working individually but compensated with a common payoff based on the performance of all team members.[2] Even if common payoffs captures the dependency of outcomes among teammates, it does ignore one of the most essential parts of teamwork, that team members communicate and interact with each other. In this paper, we aim to create a setup where teamwork involves more intense communication and collaboration, to more closely capture the real workplace experience of working in teams, as these interactions are what COVID-19 may affect. In our design, working in a team requires working together with a randomly selected participant on the same set of questions in a Zoom-breakout room with the camera and microphone on, in addition to having a common payoff with the teammate based on the average output of team members. In this set-up, in addition to factors brought by the incentive scheme, such as beliefs about the other participant's performance, other factors such as social scrutiny of one's own performance and abilities are also relevant. Creating this kind of interactive teamwork enables us to understand the relationship between self-selection into teams and individual characteristics/social skills such as the pure willingness to socialize with others or social confidence, which have not been studied before in an experimental setting.

Our contribution is twofold: First, we document that increasing the salience of Covid-19 can lead 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 an effort context. Second, we identify a setting where most individuals, primed or not, make a suboptimal choice by not selecting into teams. The fact that many people who believe that teamwork is more profitable still choose to work individually, suggests that there are factors that make it costly for individuals to

[2]Written communication via chat-box between performance rounds is sometimes allowed (Cooper et al., 2021; Kuhn and Villeval, 2015).

perform in a social environment. We find that experiences with teamwork and social confidence (i.e., being voluntary to perform a task in public) are significant predictors of the efficiency loss from shying away from teamwork. In this sense, our results suggest that exogenous (forced) exposure to teamwork (e.g. through company-wide 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 in both organizational and educational settings.

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-round real effort task, and additional experimental games eliciting different economic and social preferences.

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), which studies 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 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 lower water supply in dams, health problems such as cancer, traffic accidents, and terrorist attacks.

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"*. Appendix 4 presents the list of all the scrambled sentences in the priming task and the word fragments in the manipulation check exercise. We also want to note that both tasks are incentivized. Participants will be paid 3 Turkish Liras (TL) per correct answer if the task is chosen for the payment at the end of the experiment.

2.2 Self-Selection into Teams and Expectations

2.2.1 Elicitation of 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. We chose the real effort task such that teams would be expected to perform better than individuals. To that end, we use the "Remote Association Test" developed by Mednick (1962) and adapted to Turkish by (Özen et al., 2015). This test measures convergent thinking, a dimension of creativity in which there is a single solution to a problem.[3] In this test, subjects are given sets of three seemingly unrelated words. Each set of words can be combined with a common 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 the Remote Association Test because two people could find different associations and consequently, submit more correct answers in the case of successful communication. [4] 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 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

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

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

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. In the first three minutes, team members are encouraged to work individually whereas, in the last five minutes, they are asked to answer the questions together with the camera and microphone on. Both team members submit their answers individually and the piece rate is equal to the individual piece rate (3 TL per correct answer). However, different from the individual payment scheme, participants in the team-based compensation are not paid solely based on their own performance but on the average performance of both members of their team.

In our design, we incentivize the decision to join a team in the following way: Either subjects' own choice is implemented, or the computer randomly assigns subjects to a payment scheme. All participants know this process as well as the rules of different working environments. In this way, we will be able to compare the performance of voluntary and forced teams, test the effectiveness of teamwork in this setting and understand whether avoiding teamwork is costly.

2.2.2 Elicitation of Beliefs

After making their decision on compensation schemes, for each round, participants are also asked to guess (1) how many correct answers they would have if they work individually in that round, (2) how many correct answers a randomly selected participant would 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 in 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 2 extra 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: pure willingness to socialize, social confidence, demand for autonomy, desire to avoid responsibility, risk tolerance, attitudes towards competition, altruism, and empathy.

To elicit 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 virtual chat Zoom-breakout room where they talk with other participants about any subject or wait in a silent Zoom-breakout-room alone.[5] This measure could be considered as a behavioral measure of sociability which has been previously studied in the literature.

Social confidence is elicited in a similar way proposed by Alan et al. (2020). After the first round of the Remote Association Test and before the decision of joining a team, participants are asked whether they would like to be a volunteer to solve three similar questions in front of other participants at the end of the experiment. Participants are informed that one of the participants among the volunteers would be randomly chosen and perform the task with his/her microphone and camera on. The performer will earn 5 TL per correct answer (which is 2 TL higher than the piece rate in the normal rounds) in addition to her earning from the experiment.

Demand for autonomy and the desire to avoid responsibility are shown to be major determinants of willingness to make a risky decision on behalf of others (Ertac et al., 2020). Similar to being a leader, working in a team also creates externalities among team members. Therefore, we wanted to measure similar individual characteristics and test their predictive power in the decision of joining a team. Since the decision related to joining a team is measured in the context of the creativity test in our experiment, we also elicit the demand for autonomy and the desire to avoid responsibility in that context. Participants are randomly matched with another participant after the third round of RAT. They do not perform the task at that round, but they are informed that their performances in the first round of RAT are also valid for that round. Then, they are asked to choose between their own and the other participant's performance when calculating i. their own payoffs and ii. the other participant's payoffs. The demand for autonomy is defined as the willingness to pay to determine own payoff by own performance while the desire to avoid responsibility is defined as the willingness to avoid determining others' payoff by own performance, similar to Ertac et al. (2020).

Attitudes towards competition, risk preferences and altruism are elicited via the following games commonly used in the economics literature. For the willingness to compete, we implement an adjusted version of Niederle and Vesterlund (2007) in the domain of a word game. Participants are given ten questions to be answered in four minutes and choose between a piece-rate payment scheme (3 TL per correct answer) and tournament which brings 9 TL per correct answer in the case of victory

[5]Participants did not 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.

and 0 otherwise. We elicit a simple measure of risk aversion by the investment game proposed by Gneezy and Potters (1997). Participants were given a fixed amount of endowment (30 TL) and asked to decide how much of their endowment to invest into a lottery with a winning probability of 50%. The higher the investment, the higher the risk participants are willing to take. When it comes to a measure of altruism, we implement a classic dictator game. Participants are told that some of them will be randomly chosen and given a fixed endowment of 20 TL and asked to decide how much of their endowment transfer to an anonymously matched recipient if they would be among the lucky ones who get the endowment. For empathy, we implement the Reading the Mind in the Eyes Test (RMET) of Baron-Cohen et al. (2001) measuring participants' ability to recognize emotions in others. Details of all the tasks mentioned above can be found in the appendix.

2.4 Post-Experiment Surveys

After completing all the experimental tasks, subjects answer the first post-experiment questionnaire about standard demographic information and their experiences related to the pandemic. To comprehensively reflect how COVID-19 is salient in people's daily lives, we go beyond the manipulation done in the experiment setting and collect data regarding the level of precautions participants take, how their social interactions and lives were affected and how much they are worried about the pandemic. Then, we construct a subjective measure of the salience of COVID-19 outside of the experiment. Also, we try to figure out some potentially exogenous variables that could amplify the salience of the pandemic such as having an elderly family in the family or living in a high-risk location so that we could exploit the variation in these variables to identify the impact of the pandemic on the willingness to work in teams as an additional analysis.

2.5 Data and Procedures

The experimental tasks were programmed using o-Tree (Chen et al., 2016) and sessions were conducted throughout Zoom. Koc University students were invited to participate in an experimental session through University Daily News Announcements Bulletin and able to register for a session via Google Forms which enabled us to collect the electronically confirmed consent forms. Sessions were conducted between January 19 and March 14, 2021. Subjects got 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 are provided with a sound recording of the instructions as well as the text.[6] 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 had any incorrect answer, 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 needed to work in a team for a specific task with a randomly assigned participant, the experimenter assigned each pair into a Zoom-break-out room and asked them to turn on their microphones and cameras to interact with their team members. After the time of teamwork run 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 the related earnings in a randomly chosen experimental task. Participants were not allowed to join more than one session. Sessions lasted 65-70 minutes on average and the average payment was 45 TL including a participation fee of 10 TL.

3 Results

Our sample consists of 286 university students and 56% of the participants are female. In Round 1, about 29% of the participants chooses to work in a team in the control group, while this ratio is 25% for the treatment ($p = 0.49$, Mann-Whitney test). In Round 2, 50% prefers teamwork in the control group, and 36% prefers teamwork in the treatment ($p = 0.02$, Mann-Whitney test). The sample is balanced in terms of observable factors such as gender, age, seniority, major, task related ability, session size except for the ratio of friends in the attended session (See TableA1 in the Appendix for the balance check).

An interesting observation in our data is that most of the subjects expect to perform better in teams while their preferences for teamwork are not consistent with their beliefs about the productivity advantage of teamwork. For the first round, 74% of participants believe that they would perform better in a team; however, only

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

27% of participants choose teamwork. In the second round, after many subjects got the experience of teamwork, the gap between beliefs and choices is smaller than the first round but still substantial. While 83% of subjects expect to submit more correct answers when they work in a team, only 43% of participants prefer joining a team to working alone. The discrepancy immediately brings to mind that there may be efficiency costs of not joining teamwork. In what follows, we will investigate the effect of making the pandemic salient on participants' beliefs and choices, as well as any economic costs this may have.

3.1 The COVID-19 Pandemic and Preferences for Teamwork

In this section, we investigate the effect of priming the COVID-19 pandemic on self-selection into teams. In Table 1.1, we present results from logistic regressions where the dependent variable is whether the participant prefers teamwork to working alone in Round 1 (Columns 1 and 2) and Round 2 (Columns 3 and 4). Our results show that priming participants with COVID-19 decreases the likelihood of choosing to work in a team for 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' demographic information (gender, age, seniority and major), session-level controls (session size and the ratio of friends in the session), and task-related ability (columns 2 and 4). Also recall 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. We therefore control for this and indeed find that prior assignment to a team is significantly positively associated with self-selection into teams.

The negative effects of Covid-19 salience on self-selection into teams are also corroborated in In Table 1.2, where we test whether priming COVID-19 affects the number of times a participant chooses to work in a team during the whole experiment. We observe that primed participants are about 12 percentage points more likely to avoid teamwork in both rounds, and 10 percentage points less likely to choose teamwork once. We do not find a significant treatment effect on selecting teamwork in both rounds, which might suggest that these participants could be team players or highly extroverted individuals who have a stable preference for

socially interactive work. These results do not change when we add task-related ability, demographic, and session control variables (columns 2, 4 and 6).

To unpack the effect of priming COVID-19 in the second round, we conduct the same analysis separately for the participants who selected teamwork in Round 1 and the ones who did not, allowing the treatment effect to differ across different preferences for teamwork in Round 1. Although this analysis is endogenous, as those who opt out of teamwork may also be differentially affected by treatment, it may still provide some insight. Table 1.3 demonstrates that the treatment effect on the decision of joining a team comes from the participants who did not select teamwork in the first round. Those 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 are more likely to choose teamwork in the second round, but the effect becomes significant only after controlling for task-related ability, demographic and session level controls.

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

Our previous analyses have demonstrated that priming COVID-19 makes subjects less willing to work in teams. Now, we investigate whether the pandemic imposes any economic cost by discouraging participants from teamwork. For this, we first test whether our randomly formed teams have higher performance than individuals. [7] In our sample, subjects working in a team solve on average 1.9 (1.6) more questions in Round 1 (Round 2) than those who work individually (Figure 1.1). In Table 1.4, we present the treatment effect of being assigned to teamwork for Round 1 and 2 separately. Working in a team significantly improves performance, even after controlling for treatment status, gender, task-related ability, and the preference for teamwork. Neither treatment status nor gender significantly affect performance for any round. Also, the preferred incentive scheme is significantly associated with

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

performance–both the subjects preferring teamwork and those choosing to work individually submit similar number of correct answers. The results are similar when we run regressions separately for the treatment and control group (See Table A2 and Table A3 in Appendix).

The productivity difference between incentive schemes is also reflected in the experimental earnings. Subjects in randomly formed teams earn 5.9 TL (4.7 TL) significantly more from the first (second) round of RAT on average. However, to investigate the existence and magnitude of the cost related to the pandemic, we go further and try to estimate the individual costs associated with the chosen incentive scheme. To do so, we assume that being able to affect another participant's payoff does not change individual performance costs [8] and participants can communicate effectively, and share their responses to each question with each other in the given time interval.[9] According to these assumptions, potential earnings in different incentive schemes are calculated and the expected cost of a compensation scheme is defined as the difference between the expected payoffs under the alternative and preferred option. Note that in our cost estimation, we focus on the second round of RAT since we have a robust treatment effect for that round. In that way, we could provide more reliable estimates regarding the cost of the pandemic.

Table 1.5 presents the regression results where the dependent variable is the expected monetary loss of the participant's decision in Round 2. We calculate expected costs using either performances in Round 0 (pre-performance) or in Round 2. Columns 1-3 report the costs using performance in the pre-performance round as a predictor of future performance; this corresponds to the ex-ante costs. More specifically, for Columns 1-3, expected earnings are calculated in the following way. For individual performance, we take the performance in the pre-performance round. For the team performance, we simulate all the possible pairs of each participant, take the individual answers of matched pairs in the pre-performance round and create a team response for each question. If one of the team members submits a correct answer, we assume that the team will submit a correct answer too.[10] Then, we calculate the individual costs of decision as the difference between the

[8] 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).

[9] In the post experiment survey 97% of participants report that their participants turned on their microphone during teamwork.

[10] In the presence of communication during teamwork, the nature of the task does not allow the correct answers to remain ambiguous. Once the participants find the correct answer, they will tend to be pretty sure about that.

expected payoffs under the alternative option and chosen pay-scheme. According to simulation results, we find that subjects in the primed group make more costly decisions (about 0.25 standard deviations) compared to those in the control group.

Columns 3-5 presents the results with the expected costs based on Round 2 performance, which could be considered as reporting the ex-post costs. For the individual performance, if the participant is assigned to work individually at that round, we take the realized performance. If not, we predict his/her performance by using available performance data.[11] Team performance is calculated as the maximum of the number of correct answers provided by each team member without comparing team members' answers to each question one by one.[12] Then, the individual costs of decisions are calculated. The results suggest that being reminded of the pandemic make participants willing to lose about 0.23 standard deviations more. We are aware that the size of the costs is sensitive to the assumptions we make, but the qualitative results are not. Primed participants incur larger costs by avoiding teamwork more than those in the control condition.

3.3 Correlates of the Willingness to Work in Teams

Although our main objective in this paper is to investigate the effect of the COVID-19 pandemic on self-selection into teamwork, we also provide important results in terms of the determinants of self-selection into teams. Table 1.6 presents the correlates of the willingness to join a team for both rounds for the whole sample. An important finding here is that social confidence is a strong predictor of the willingness to join a team for both rounds. Being voluntary to perform a task in public is associated with 25(18) percentage points increase in the likelihood of joining a team in Round 1 (Round 2). The result is consistent with the previous study reporting a strong link between social confidence and willingness to be a leader in context of deciding a risky investment (Alan et al., 2020) since being a leader and working in a team are similar in terms of being observed when affecting others' payoffs.

Another factor that is closely related to willingness to work in a team is exposure to teamwork. Being, voluntarily or forcefully, experiencing teamwork in the first round increases the likelihood of choosing teamwork in the next round by about 24

[11] All the details regarding the expected cost calculation can be found in Appendix 4.

[12] Taking the maximum of the number of correct answers is plausibly a conservative estimate of team performance since it ignores peer-learning and collaboration among team members. In our design, subjects are encouraged to discuss questions and come up with answers together.

percentage points. The reason behind this relation could be that being exposed to teamwork once might reduce possible entry costs related to social interactions and help participants embrace the profitable payment scheme more easily. Exposure to teamwork can be considered as a treatment since participants are assigned to a random compensation scheme most of the time and the effect is strong and robust to inclusion of many control variables.

Our analysis confirms the positive relationship between sociability and sorting into a socially interactive job reported in the previous empirical studies in an experimental setting with a behavioral measure of sociability. Participants preferring to engage in a small talk with others in a live chat breakout-room (rather than sit alone in a silent breakout-room) in case of any wait is about 15 (18) percentage points more likely to choose teamwork over individual work for Round 1 (Round 2).

We also analyze the relation between task-related ability and the willingness to join a team which has been previously studied in the experimental literature. Individual performance in pre-performance round is negatively correlated with the choice of working in a team for the first round but has a small predictive power. Having one more correct answer in ten questions decreases the likelihood of selecting teamwork by only about 2 percentage points. More importantly, we observe that expectations have a larger role in the decision of joining a team than task-related ability. A higher expectation of the individual performance, a participant is about 4 percentage points significantly less likely to choose to work in a team for both rounds. In contrast, participants' guesses about their own performance in a randomly formed team is positively related to self-selection into teams, the size of the effect is around 3 percentage points for both rounds.

Our study provides some null results for the following variables. Before conducting our experiment, we hypothesized that demand for autonomy and desire to avoid responsibility could have a explanatory power in regards to the choice of teamwork since working in a team creates a set-up that team members influence each other's payoffs. However, we do not find any robust association between self selection into teams and the demand for autonomy or desire to avoid responsibility. The reason behind this result could be the multilateral nature of teamwork. All subjects affect the others' payoff in a team, and in the presence of communication, all players could react when another player makes a false move. Therefore, participants might not feel like taking full responsibility or losing autonomy when they work in a team.

Also, neither gender nor risk preferences are significantly related to the willingness to work in teams in our sample.

3.4 Correlates of Expected Costs

In our setting, most of the participants make suboptimal choices by avoiding teamwork, independent of the treatment status. Understanding the factors that lead people make costly decisions could be important for improving workplace efficiency. To do that, we expand our cost estimation to Round 1 and report the correlates of the efficiency loss in the context of choosing a work environment for both rounds (Table 1.7).

We first observe that sociability is negatively associated with costly decisions. Sociable individuals make less costly decisions for both rounds, on average. The effect size ranges from 0.3 to 0.43 standard deviations depending on the round and cost estimation strategy. Similarly, being voluntary to perform a task in public also improves efficiency. Socially confident subjects, on average, have significantly less costly decisions for both rounds. The magnitude of the improvement differs from 0.34 to 0.54 standard deviations for the first round, while it is 0.37 and 0.25 standard deviations for the second round.

Exposure to teamwork also affects the magnitude of the cost which the participant tends to incur in the context of deciding on an incentive scheme. Participants experiencing teamwork in the first round have significantly lower losses in the second round. The effect size vary from 0.42 to 0.57 standard deviations depending on the cost estimation method. Additionally, participants' expectations regarding their own individual performance have an influence on their losses for both rounds after controlling for the task related ability and other individual characteristics. When subjects are more confident about their performance, they tend to incur larger costs.

Lastly, desire to avoid responsibility seems to increase the cost of decisions in the ex-post cost estimation method. Participants who are willing to pay a positive amount not to determine a randomly selected participant's payoff with their own performance make more costly decisions (about 0.21 standard deviations) for both rounds.

3.5 Mechanisms of Impact

None of the behavioral measures and economic preferences which are shown to be correlated with the decision of joining a team in Section 3.4 is affected by the treatment (See Figure 1.2). On the other hand, Figure 1.3 shows that one potential channel that mediates the effect of priming COVID-19 on self-selection into teams in our experimental design seems to be the altered expectations. These expectations capture how optimistic the individual is about his/her performance in different work environments.

We have several measures to test this channel. Our first three measures (already described in Section 2) are 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 own team performance if she works with a randomly matched participant. Our next three measure, which are expected to capture how the participant updates her beliefs between two rounds, are constructed as the difference between the subject's expectations in Round 1 and 2.

Table 1.8 shows that participants primed with COVID-19 have more optimistic expectations of their own performance in Round 1 than the control group but this effect disappears in the second round. On the other hand, the primed group have more pessimistic expectations of their performance in a team in Round 2 compared to the control group although teammates' ability is not different in treatment and control condition ($p = 0.76$, Mann-Whitney test). Moreover, the primed group update their guesses regarding their performance in the individual and team-based payment schemes as well as others' performance more negatively than the control group (Table 1.9). However, the effect seems to be not so large that one could tend to believe that there might be some unobserved factors that mediate the effect.

Our starting point for this study was that people experiencing the pandemic and the related governmental restrictions could have a lower value or high cost of social interactions and end up avoiding socially interactive work environments. To get some qualitative insight into this, we also sent an additional survey to subjects, to get supplementary data regarding their demand for social interactions and level of extroversion, self-reported risk preferences, and the number of relatives or friends who were infected when they participated in the experiment. Responses from this post-experiment survey in which 213 students from our main sample participated provides supportive evidence related to the decreasing demand for social interactions during the COVID-19 pandemic (See Figure 1.4; $p = 0.0001$,

Test of the equality of means). 49.5% percent of participating subjects report that they demand social interactions less than before the pandemic. The reason why we do not any significant treatment effect on sociability in our main experiment could be the high salience of the pandemic outside of the experiment. Also, recall that pure willingness to socialize is elicited only once in the beginning of the experiment just after the priming task. However, being reminded of the pandemic has a strong treatment effect in Round 2 for the participants initially preferring individual work. Therefore, we suggest that there might be some unobserved costs of further interactions with others which we could not capture with our collected variables, and these costs might be higher for the participants primed with COVID-19 after a round of individual work. As our main results show, subjects in the control condition are more open to social interactions after a round while those in the primed group tend to maintain their choice of socially isolated working environment.

3.6 Using Survey Responses Rather than the Prime

Priming a group of participants increases the salience of COVID-19 in our virtual lab environment and enables us to understand the impact of the COVID-19 pandemic on participants' decision of joining a team. In addition to manipulating the salience in the experiment, we also collect supplementary measures regarding the salience of COVID-19 outside of our experiment. We ask a set of questions to participants regarding their responses to the pandemic (i.e., how the pandemic affected their daily lives, the level of precautions they took, how much they were worried about the COVID-19 pandemic, and how negatively the pandemic affected their social relations), then we construct a summary score that measure self-reported salience of the COVID-19 pandemic (c-alpha=0.71). Self-reported salience of COVID-19 does not differ between treatment and control (p=0.92, Mann Whitney test) and negatively predicts team selection for both Round 1 and Round 2 (See Table 1.10, Column 3 and 6).

As an alternative and plausibly exogenous measure of exposure to the pandemic, we look at the effect of the presence of an elderly in the close family on preferences for teamwork. Participants are not expected to have control over their parents' or grandparents' ages and their willingness to work in a team is not likely to be affected by how old their relatives are. Our analysis shows that having a close elderly relative is associated with about 12 percentage points decrease in the likelihood of team

selection in Round 2 (Column 6). As another variable that affects the salience of the pandemic is the risk level of the location the participant lives. This self-reported risk measure does not seem to be related to self-selection into teams. The reason behind this result could be self-selection into neighborhoods. More sociable individuals might live in more crowded, central and potentially risky locations. However, it is important to highlight here that neither the salience outside of the experiment nor the presence of an elderly in the close family does not seem to mediate the role of priming. The main findings are consistent across alternative measures of the salience of the COVID-19 pandemic. The more salient the COVID-19 pandemic in a participant's life, the participant is more likely to choose working alone.

4 Conclusion

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 anticipate. Controlling for task-related ability, demographic, and session-level controls, we show that the 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. Moreover, according to our further analysis, altered expectations are the potential channel that mediates the effect of the pandemic on preferences for teamwork.

The COVID-19 pandemic is salient at least some of the time to almost everyone; indeed, during the day, Covid-19 news or policies such as wearing masks outside regularly make the pandemic salient. How "top-of-mind" COVID-19 is can indeed change from day to day, with fluctuations in numbers of cases, news from friends and family etc. Experimental salience manipulations could allow us to measure how economic decision-making is likely to be influenced by virus exposure during such salient moments, 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. Note that the number of cases was still high in Turkey during the course of our experimental sessions (with daily cases ranging from 5.277 to 15.082); therefore, the high salience outside the experiment likely makes our estimates conservative,

as many of our participants might already have the pandemic in their mind. The salience of COVID-19 outside of the experiment could also be responsible for the very low willingness to join a team in the whole sample for the first round, and therefore the imprecisely estimated treatment effect for the first round. However, even after controlling for the salience of the pandemic outside of the experiment best as we can (e.g., the self-reported salience of the pandemic and having an elderly relative in the close family), we have still a significant impact on team selection in Round 2 as well as significant negative relationship between these alternative measures and preferences for teamwork.

Our results put forward prior exposure to teamwork as a main determinant of selection into teamwork. Consistent with this, it may be that the less interactive learning environment brought about by COVID-19 at universities (e.g. lower levels of team activities in classes, less peer-to-peer learning and studying) (Alawamleh et al., 2020; Shishakly and Sabah, 2021) may have led students to be less comfortable with teamwork and more comfortable working alone. 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 prefer jobs including less social interactions even if these jobs pay more. Our results also put forward a simple policy implication to mitigate the effect of the pandemic on suboptimal incentive choices, or in general, to make people more willing to work in teams. Even a short prior experience with compulsory teamwork could bring down the unobserved costs of interacting with others and lead people to make more profitable choices by joining teams in their next choices. However, the primed group is still less likely to be convinced to work in a team in the second round. That is, compulsory team activities could help the policymakers improve the attitudes towards teamwork in general but tone down the negative effect of COVID-19 only to some extent. People do no seem to switch to their previous preferences in short term.

One possible criticism of our setup might be that teamwork is done in online groups rather than face-to-face. However, the growing importance of online teamwork, and remote employment possibilities, placed greater importance for understanding the dynamics of teamwork of the new era. Over and above the pandemic period, understanding the determinants of self-selection into teams per se is crucial for designing effective policies that could improve efficiency in the labor

market. Our results point out social confidence as a strong predictor of self-selection into teams and consequent efficiency losses, suggesting that policies improving social confidence could substantially abate the avoidance of teamwork and increase efficiency in the labor market.

Tables

Table 1.1: 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	-0.052	-0.107**	-0.114**
	(0.07)	(0.06)	(0.05)	(0.06)
Female		-0.030		0.001
		(0.05)		(0.05)
Individual performance		-0.049***		-0.024**
		(0.01)		(0.01)
Assigned to a team (R1)			0.287***	0.293***
			(0.04)	(0.04)
Session level and demographic controls		✓		✓
Control mean	0.29	0.29	0.50	0.50
N	286	285	286	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). Session level controls include session size and the ratio of friends in the attended session. Demographic controls include age, university major and year. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

Table 1.2: Treatment Effect on the Number of Times Teamwork is Selected

	Never		Once		Twice	
	(1)	(2)	(3)	(4)	(5)	(6)
Covid-19 priming	0.121**	0.130**	-0.104**	-0.094*	-0.018	-0.032
	(0.06)	(0.06)	(0.05)	(0.05)	(0.06)	(0.06)
Assigned to a team (R1)	-0.239***	-0.249***	0.174***	0.180***	0.081	0.077
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Female		0.007		0.023		-0.026
		(0.05)		(0.04)		(0.04)
Individual performance		0.040***		-0.007		-0.033**
		(0.01)		(0.01)		(0.01)
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

This 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 zero times (once, twice) in two rounds. Session level controls include session size and the ratio of friends in the attended session. Demographic controls include age, university major and year. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

Table 1.3: Heterogeneous Treatment Effects By Preference for Teamwork in Round 1)

	Team selection (Round 2)			
	(1) Select Ind (R1)	(2) Select Ind (R1)	(3) Select Team (R1)	(4) Select Team (R1)
Covid-19 priming	-0.124**	-0.116**	0.024	0.169*
	(0.05)	(0.05)	(0.07)	(0.10)
Assigned to a team (R1)	0.313***	0.311***	0.236**	0.387***
	(0.05)	(0.05)	(0.11)	(0.14)
Female		0.030		-0.149*
		(0.05)		(0.09)
Individual performance		-0.010		0.036*
		(0.01)		(0.02)
Session level and demographic controls		✓		✓
Control mean	0.35	0.35	0.35	0.35
N	209	208	77	77

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

Table 1.4: 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***	2.056***		
	(0.39)	(0.36)		
Assigned to a team (R2)			1.548***	1.561***
			(0.35)	(0.35)
Covid-19 priming	0.233	0.238	-0.247	-0.257
	(0.40)	(0.38)	(0.29)	(0.29)
Female		-0.468		-0.134
		(0.33)		(0.27)
Individual performance		0.324***		0.178**
		(0.09)		(0.08)
Choosing to work in a team (R1)		0.279		
		(0.44)		
Choosing to work in a team (R2)				
Individual mean	14.97	14.97	14.93	14.93
N	286	286	286	286

Coefficient estimates are from ordinary least square estimation 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 1.5: Expected Monetary Costs in Round 2

	Based on Performances in R0		Based on Performances in R2	
	(1)	(2)	(3)	(4)
Covid-19 Priming	0.244*	0.247*	0.229*	0.235*
	(0.13)	(0.13)	(0.12)	(0.12)
Individual performance		-0.006		-0.029
		(0.03)		(0.03)
Female		-0.073		-0.084
		(0.12)		(0.12)
Control mean	-0.13	-0.13	-0.12	-0.12
N	286	286	286	286

This table presents results from OLS regressions. The dependent variable is the standardized expected cost of the chosen incentive scheme in Round 2. In Column 1-2, individual costs are calculated based on performances in the pre-performance round (R0) while in Column 3-4, we use performances in the actual round (R2) for the cost calculation. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

Table 1.6: Correlates of the Willingness to Work in Teams (Full Sample)

	Round 1	Round 2
	(1)	(2)
Covid-19 priming	-0.023	-0.104**
	(0.05)	(0.05)
Female	0.000	0.001
	(0.04)	(0.04)
Individual performance	-0.029***	-0.012
	(0.01)	(0.01)
Willing to socialize	0.152***	0.195***
	(0.05)	(0.05)
Social confidence	0.244***	0.182***
	(0.05)	(0.06)
Risk preferences	-0.001	0.000
	(0.00)	(0.00)
Desire to avoid responsibility	-0.064	-0.078
	(0.05)	(0.06)
Demand for autonomy	-0.043	0.076
	(0.06)	(0.06)
Guess-own performance (R1)	-0.044***	
	(0.01)	
Guess-team performance (R1)	0.029**	
	(0.01)	
Assigned to a team (R1)		0.261***
		(0.04)
Guess-own performance (R2)		-0.060***
		(0.01)
Guess-team performance (R2)		0.047**
		(0.02)
Difference in guess-own performance (R1-R2)		-0.027**
		(0.01)
Difference in guess-team performance (R1-R2)		0.015
		(0.01)
Session level and demographic controls	✓	✓
N	285	285

This table presents 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).Session level controls include session size and the ratio of friends in the attended session. Demographic controls include age, university major and year. Standard errors are clustered at the session level. Marginal effects are reported. * $p<0.01$, ** $p<0.05$, *** $p<0.01$.

Table 1.7: Correlates of Expected Costs

	Round 1		Round 2	
	(1)	(2)	(3)	(4)
	Based on R0	Based on R1	Based on R0	Based on R2
Covid-19 Priming	0.007	-0.067	0.151	0.166
	(0.12)	(0.14)	(0.11)	(0.12)
Female	0.045	-0.041	-0.045	-0.084
	(0.10)	(0.12)	(0.09)	(0.10)
Individual performance	-0.054*	-0.071*	0.002	-0.030
	(0.03)	(0.04)	(0.03)	(0.03)
Willing to socialize	-0.431***	-0.300**	-0.290**	-0.298**
	(0.15)	(0.14)	(0.12)	(0.13)
Social confidence	-0.539***	-0.335***	-0.369**	-0.246*
	(0.14)	(0.12)	(0.14)	(0.14)
Risk preferences	0.009	-0.009	0.001	-0.012*
	(0.01)	(0.01)	(0.01)	(0.01)
Desire to avoid responsibility	0.179	0.216*	0.192	0.228*
	(0.11)	(0.13)	(0.13)	(0.12)
Demand for autonomy	0.024	0.026	-0.105	-0.033
	(0.17)	(0.16)	(0.12)	(0.13)
Guess-own performance (R1)	0.112***	0.096***		
	(0.03)	(0.03)		
Guess-team performance (R1)	-0.056	-0.033		
	(0.04)	(0.04)		
Assigned to a team (R1)			-0.567***	-0.420***
			(0.12)	(0.13)
Guess-own performance (R2)			0.060***	0.065***
			(0.02)	(0.02)
Guess-team performance (R2)			-0.058	-0.047
			(0.04)	(0.04)
Session level and demographic controls	✓	✓	✓	✓
Control mean	-0.03	0.01	-0.13	-0.12
N	285	285	285	285

This table presents results from OLS regressions. The dependent variable is the standardized expected cost of the chosen incentive scheme in Round 1 (Column 1-2) or Round 2 (Column 3-4). In Column 1 and 3, individual costs are calculated based on performances in the pre-performance round (R0) while in Column 2 or 4, we use performances in the actual round (R1 or R2) for the cost calculation. Session level controls include session size and the ratio of friends in the attended session. Demographic controls include age, university major and year. Standard errors are clustered at the session level. Marginal effects are reported. * $p<0.01$, ** $p<0.05$, *** $p<0.01$.

Table 1.8: Beliefs as Potential Mechanisms

	Round 1			Round 2		
	(1) Own	(2) Other	(3) Team	(4) Own	(5) Other	(6) Team
Covid-19 priming	0.550*	0.343	0.474	-0.609	-0.685*	-0.894***
	(0.32)	(0.25)	(0.32)	(0.49)	(0.36)	(0.26)
Female	-0.624	-0.499	-0.391	-0.711*	0.365	-0.094
	(0.39)	(0.35)	(0.32)	(0.42)	(0.38)	(0.33)
Individual performance	0.612***	0.461***	0.418***	0.488***	0.248**	0.254**
	(0.10)	(0.09)	(0.08)	(0.11)	(0.11)	(0.10)
Assigned to a team (R1)				-1.007**	-0.245	0.119
				(0.40)	(0.37)	(0.27)
Constant	11.355***	11.569***	14.629***	12.602***	13.686***	15.096***
	(0.84)	(0.71)	(0.71)	(1.01)	(0.94)	(0.67)
Session level and demographic controls	✓	✓	✓	✓	✓	✓
Control mean	15.07	14.69	16.75	14.59	15.31	
N	285	285	285	285	285	285

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

Table 1.9: Differences in Beliefs as Potential Mechanisms

	(1) Own (R1-R2)	(2) Other (R1-R2)	(3) Team (R1-R2)
Covid-19 priming	1.118***	0.987**	1.319***
	(0.34)	(0.36)	(0.30)
Assigned to a team (R1)	0.604	-0.159	-0.603*
	(0.39)	(0.42)	(0.33)
Female	0.129	-0.822*	-0.247
	(0.42)	(0.41)	(0.34)
Individual performance	0.123	0.212**	0.164
	(0.11)	(0.10)	(0.11)
Constant	-1.048	-1.917**	-0.227
	(0.92)	(0.83)	(0.73)
Session level and demographic controls	✓	✓	✓
Control mean	0.48	-0.62	-0.71
N	285	285	285

This table presents results from OLS regressions. The dependent variable is the difference in the participant's expectation of own individual performance, a randomly chosen one's performance and own team performance between Round 1 and Round 2. Session level controls include session size and the ratio of friends in the attended session. Demographic controls include age, university major and year. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

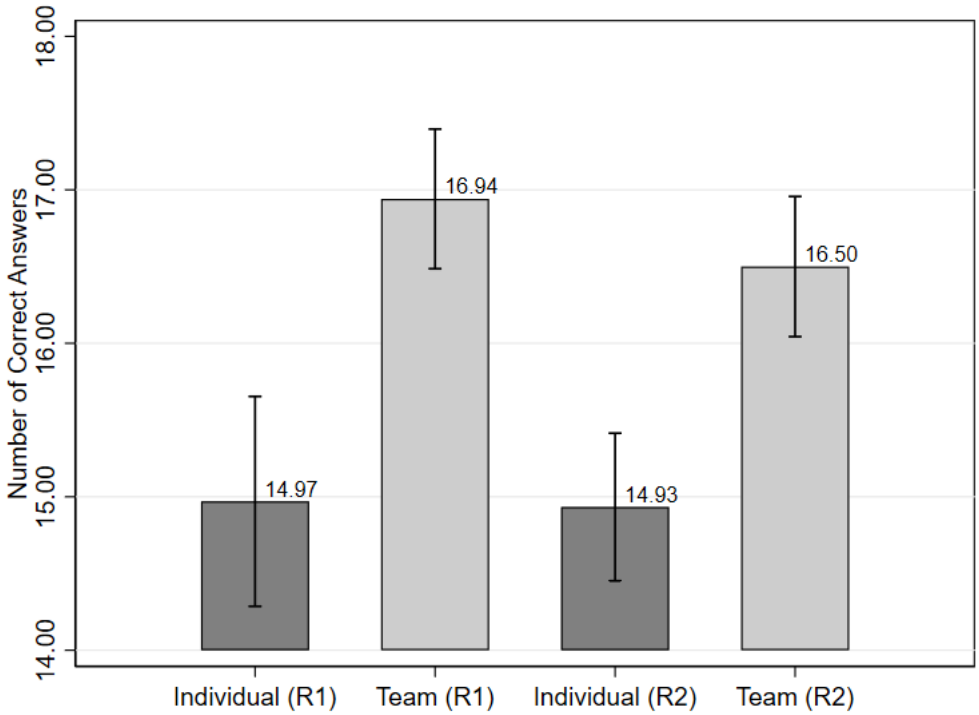
Table 1.10: Alternative Measures of Salience of the COVID-19 Pandemic

	Team selection (Round 1)			Team selection (Round 2)		
	(1)	(2)	(3)	(4)	(5)	(6)
Covid-19 priming	-0.036	-0.051	-0.062	-0.107**	-0.117**	-0.119**
	(0.07)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)
Female		0.007	0.028		0.029	0.059
		(0.05)	(0.05)		(0.05)	(0.05)
Individual performance		-0.049***	-0.040***		-0.023**	-0.017
		(0.01)	(0.01)		(0.01)	(0.01)
Social confidence		0.239***	0.246***		0.154**	0.170***
		(0.05)	(0.05)		(0.06)	(0.06)
Willing to socialize		0.127**	0.124**		0.194***	0.180***
		(0.06)	(0.06)		(0.05)	(0.05)
Self reported impact of Covid-19			-0.157***			-0.118**
			(0.05)			(0.05)
Having an elderly relative			-0.047			-0.119***
			(0.05)			(0.04)
High-risk neighborhood			0.010			-0.039
			(0.08)			(0.07)
Medium-risk neighborhood			-0.052			-0.012
			(0.06)			(0.07)
Assigned to a team (R1)				0.287***	0.293***	0.296***
				(0.04)	(0.04)	(0.04)
Session level and demographic controls		✓	✓		✓	✓
Control mean	0.29	0.29	0.29	0.50	0.50	0.50
N	286	285	285	286	285	285

This table reports marginal effects from logistic regressions. The dependent variable is a binary indicator of selecting teamwork in Round 1 (columns 1-3) or Round 2 (columns 4-6). Self reported impact of COVID-19 is the sum score we created from participants' answers to survey questions. Session level controls include session size and the ratio of friends in the attended session. Demographic controls include age, university major and year. Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

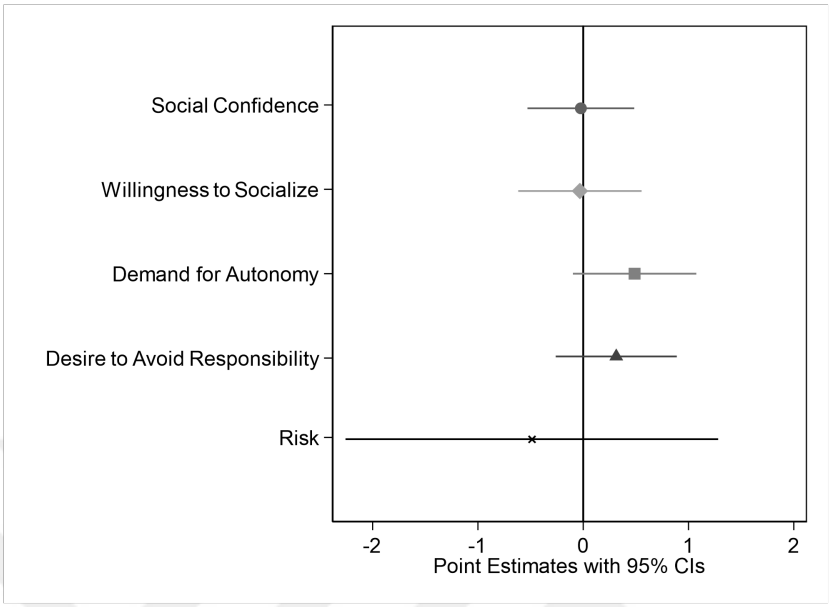
Figures

Figure 1.1: The Productivity Advantage of Teamwork



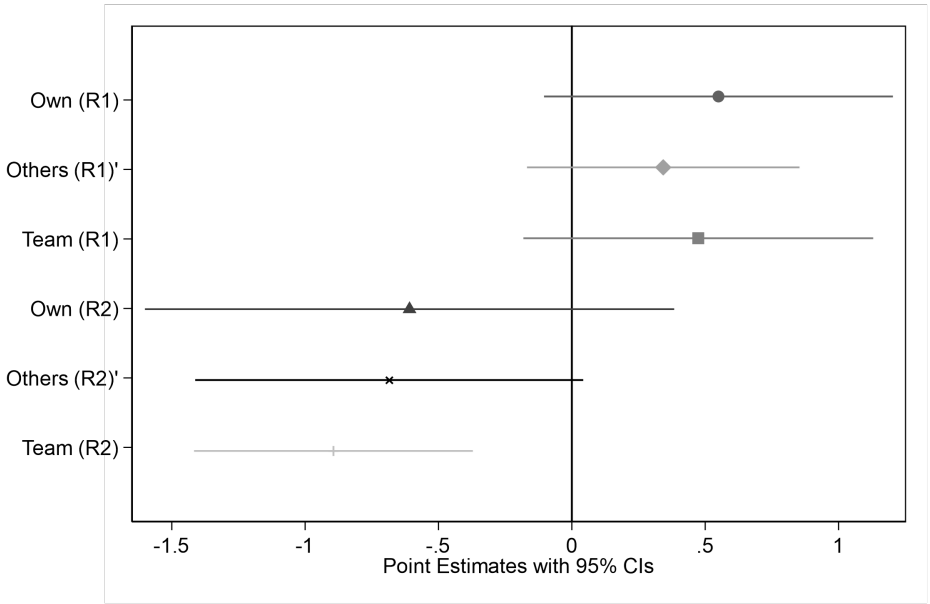
Notes: This figure shows the impact of random assignment to teamwork on performance, separately for Round 1 and 2.

Figure 1.2: Potential Mechanisms (Behavioral Measures)



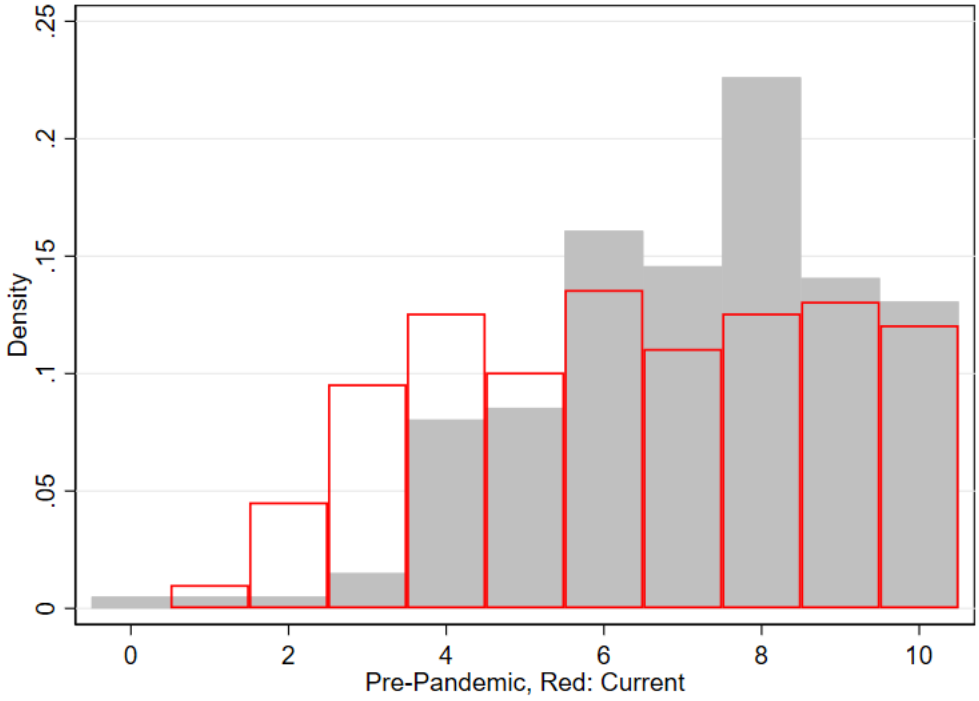
Notes: This figure shows the treatment effect of priming COVID-19 on different behavioral measures. Task-related ability, demographic variables and session level controls are included.

Figure 1.3: Potential Mechanisms (Beliefs)



Notes: This figure shows the treatment effect of priming COVID-19 on expectations of performances in Round 1 and 2. Task-related ability, demographic variables and session level controls are included.

Figure 1.4: Changes in Self-Reported Extroversion



Notes: This figure shows the distribution of self-reported extroversion before and during the pandemic for 213 participants attending the post experiment survey.

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Appendices

Additional Analyses

Table A1: Balance Table

	Control			Treatment			
	n	mean	sd	n	mean	sd	Diff
Female	139	0.54	0.50	147	0.58	0.50	0.039
Age	139	20.40	2.26	147	23.40	22.10	2.998
Time spent at campus(year)	139	1.48	1.56	146	1.66	1.64	0.176
Individual performance	139	5.53	1.89	147	5.62	1.87	0.094
Having an elderly relative	139	0.56	0.50	147	0.56	0.50	-0.003
Session friends ratio	139	0.02	0.06	147	0.08	0.15	0.052**
Session Size-Zoom	139	9.83	2.85	147	9.65	3.20	-0.181

Table A2: The Impact of Working in a Team on Performance (Control)

	Performance (round 1)		Performance(round 2)	
	(1)	(2)	(3)	(4)
Assigned to a team (R1)	2.314***	2.448***		
	(0.47)	(0.44)		
Assigned to a team (R2)			2.059***	1.989***
			(0.41)	(0.43)
Female		-0.264		-0.070
		(0.39)		(0.34)
Individual performance		0.297**		0.213*
		(0.10)		(0.10)
Choosing to work in a team (R1)		0.704		
		(0.53)		
Choosing to work in a team (R2)				-0.152
				(0.44)
Individual mean	14.65	14.65	14.75	14.75
N	139	139	139	139

Coefficient estimates are from ordinary least square estimation 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 A3: The Impact of Working in a Team on Performance (Treatment)

	Performance (round 1)		Performance(round 2)	
	(1)	(2)	(3)	(4)
Assigned to a team (R1)	1.706**	1.716***		
	(0.63)	(0.59)		
Assigned to a team (R2)			1.088*	1.145*
			(0.54)	(0.57)
Female		-0.560		-0.133
		(0.52)		(0.44)
Individual performance		0.378**		0.120
		(0.15)		(0.14)
Choosing to work in a team (R1)		-0.074		
		(0.74)		
Choosing to work in a team (R2)				0.110
				(0.55)
Individual mean	15.21	15.21	15.07	15.07
N	147	147	147	147

Coefficient estimates are from ordinary least square estimation 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. * $p<0.01$, ** $p<0.05$, *** $p<0.01$.

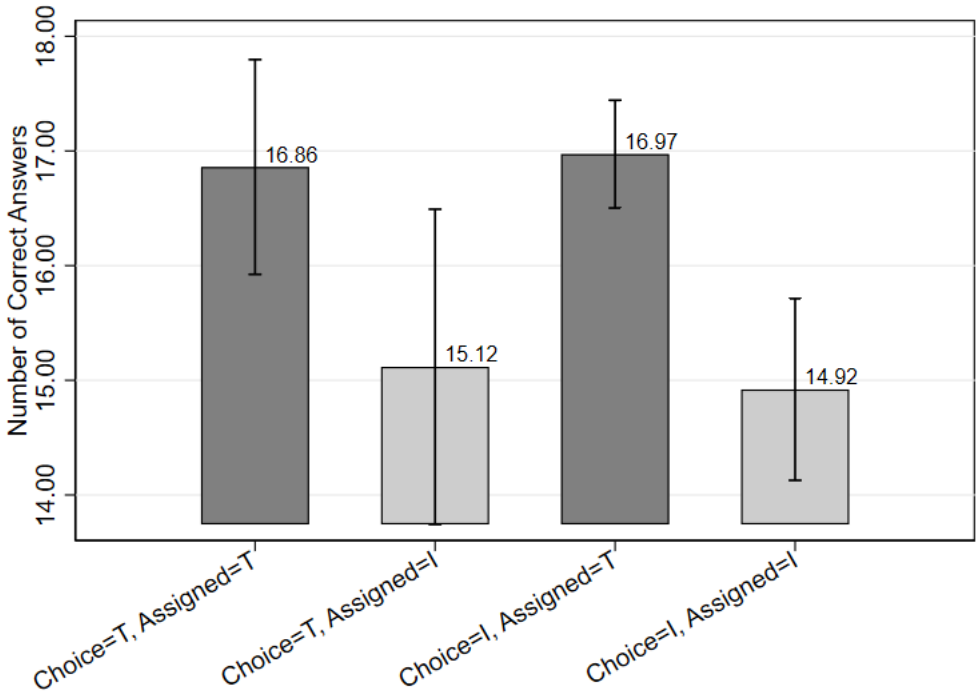
Table A4: Correlates of the Willingness to Work in Teams (Control)

	Round 1	Round 2
	(1)	(2)
Female	-0.041	0.005
	(0.05)	(0.07)
Individual performance	-0.018	-0.002
	(0.02)	(0.02)
Willing to socialize	0.105	0.134*
	(0.08)	(0.08)
Social confidence	0.246***	0.158
	(0.07)	(0.11)
Risk preferences	-0.004	0.001
	(0.00)	(0.00)
Desire to avoid responsibility	-0.158**	-0.097
	(0.07)	(0.09)
Demand for autonomy	-0.071	0.000
	(0.09)	(0.09)
Guess-own performance (R1)	-0.044***	
	(0.02)	
Guess-team performance (R1)	0.016	
	(0.02)	
Assigned to a team (R1)		0.280***
		(0.05)
Guess-own performance (R2)		-0.057***
		(0.01)
Guess-team performance (R2)		0.047*
		(0.03)
Difference in guess-own performance (R1-R2)		-0.027***
		(0.01)
Difference in guess-team performance (R1-R2)		0.011
		(0.01)
Session level and demographic controls	✓	✓
N	139	139

This table presents marginal effects from logistic regressions. The dependent variable is a binary indicator of selecting teamwork in round 1 (column 1) or round 2 (column 2). Standard errors are clustered at the session level. * p<0.01, ** p<0.05, *** p<0.01.

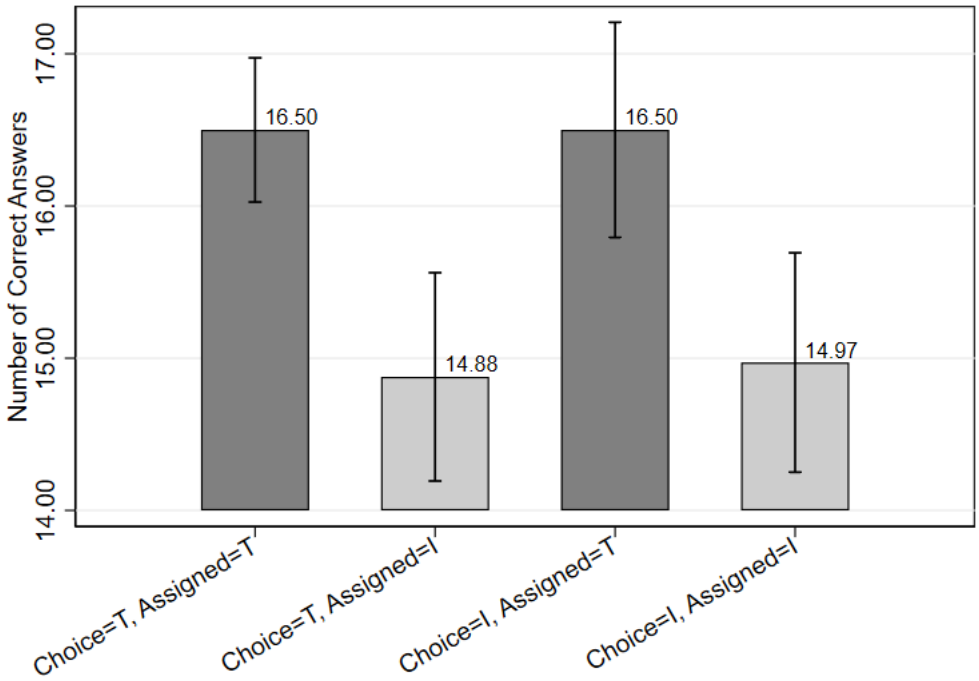
Additional Figures

Figure A1: The Impact of Being Assigned to Teamwork by The Preferred Compensation Scheme (R1)



Notes: This figure shows the treatment effect of being assigned to teamwork on the number of correct answers submitted in Round 1 by the preferred incentive scheme.

Figure A2: The Impact of Being Assigned to Teamwork by The Preferred Compensation Scheme (R2)



Notes: This figure shows the treatment effect of being assigned to teamwork on the number of correct answers submitted in Round 2 by the preferred incentive scheme.

Experimental Tasks

Priming Task (Turkish version)

Treatment group

1. "yol işitme koronavirüs araba açabilir kaybına"
2. "eğitimleri alıyor ilkokulda kodlama öğrenciler gittikçe"
3. "sayısı defter vaka milyonu aştı kırk"
4. "evlerine talep köy olan arttı çiçek
5. "araba artıyor tedavi sayısı görenlerin hastanede"
6. "çorba dağıtıyor kabile yaşayanlara sokakta sıcak"
7. "dönem bilinmiyor kiraz etkileri uzun aşının"

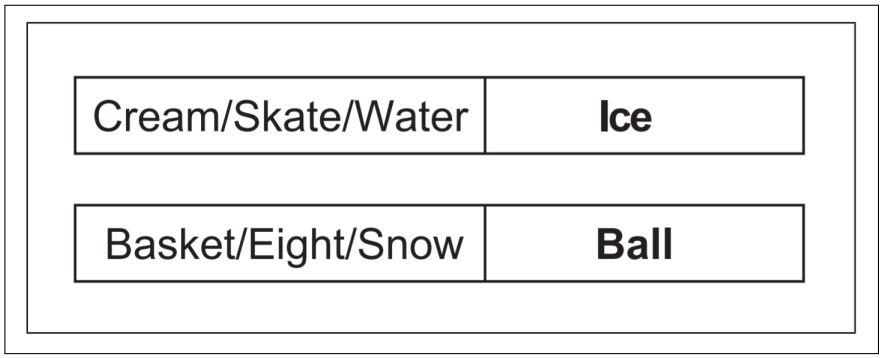
8. "okyanusta türler yeni keşfetti araştırmacılar bilişsel"
9. "katsayısını bulaşıcılık mutasyon virüsün eğleniyor arttırdı"
10. "saldırılardan yazılım sağlıyor verilerin korunmasını kaçarak"

Control group

1. "barajlarında verildi istanbul yapıldı alarmı susuzluk"
2. "eğitimleri alıyor ilkokulda kodlama öğrenciler gittikçe"
3. "ağrılar belirtisi geçmeyen kanser iade olabilir"
4. "evlerine talep köy olan arttı çiçek"
5. "araba kullanmak boyu ilaç ömür zorundaydı"
6. "çorba dağıtıyor kabile yaşayanlara sokakta sıcak"
7. "sürdüğü güney sınırında kiraz bildiriliyor çatışmaların"
8. "okyanusta türler yeni keşfetti araştırmacılar bilişsel"
9. "durdurdu kazası zincirleme eğleniyor trafik trafiği"
10. "saldırılardan yazılım sağlıyor verilerin korunmasını kaçarak"

Sample Questions from the Main Real Effort Task

Figure A3: Sample Question- RAT



Notes: This figure shows a sample question from the Remote Associates Test (Mednick, 1962).

Simulation Procedure

Calculations Based on Performances in Round 0

1. Potential earnings under the individual compensation scheme are calculated based on the individual performance in the pre-performance round for all participants.

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

    - We take all participants and simulate all possible pairs (within treatment and control)
    - For each team, we compare the answers of each teammate for each question in the pre-performance round. If at least one member of the team gives a correct answer, we count this question as correct for both team members (assuming perfect communication)
    - For each subject, calculate the average team performance (for all possible pairs)

Calculations Based on Performances in Round 2

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

    - 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)
    - We estimate $\hat{\delta}$, $\hat{\theta}$, $\hat{\beta}_1$, $\hat{\beta}_2$, $\hat{\beta}_3$
    - If the participant worked individually in the second round, we take the realized performance as individual performance.
    - If the participant worked in a team only in R2, we predict the individual performance $\hat{P}_2$ using (1).
    - If the participant worked in a team, both in R1 and R2, we predict the individual performance $\hat{P}_2$ using (2).

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

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