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Electronic Companion: Putting Teams into the Gig Economy: A Field Experiment at a Ride-sharing Platform

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Electronic Companion (EC)

The Electronic Companion (EC) contains the following sections: Text messages sent to drivers (EC.1), the pre-contest survey (EC.2), newsletters implementing treatments (EC.3), the randomization process with pseudocodes (EC.4), a theoretical framework (EC.5), additional data analyses (EC.6), and the post-contest survey (EC.7). For all experimental materials, we translate the original Chinese text into English as literally as possible. Words in square brackets are added in the English translation to ensure that it reads well in English or as an explanation.

EC.1. Text Messages

1. Contest announcement text message, sent to all eligible drivers:

   The platform driver team contest is about to start, [an opportunity] to get to know new friends and win more than 1,000 CNY in bonus. Click here to register and get a position in the participation quota!

2. Team formation text messages

   (a) Message sent to team captains:

   You have been selected as a platform team contest team captain. Please make sure to click this link to fill out information about your team members by 10:00 PM on August 12th. If you do not submit, we will deem your team formation as unsuccessful, and you cannot receive the team captain bonus. Contact information for your team members [is as follows]: {Name1, cell phone number}, {Name2, cell phone number}, {Name3, cell phone number}, {Name4, cell phone number}, {Name5, cell phone number}, {Name6, cell phone number}.

   (b) Message sent to team members:

   Congratulations! You have successfully registered for the platform team contest. Please cooperate with your team captain to provide information [such as] the last digits of your license plate number to complete the team formation [information] submission. If your captain has not contacted you yet, please take the initiative to contact and cooperate with your team captain. [The] team captain's contact information is: {Name, cell phone number}. A successful team formation facilitates winning the bonus. If you encounter any problems, please click this link to let us know. (Please ignore this message if you have already completed the process.)

3. Text message sent to drivers in the control group:

   Thank you for registering for the platform driver team contest! Many people registered for this popular activity. According to the activity rules, you were not selected to participate in this activity based on the lottery [selection]. Do not be discouraged. You will have priority to participate in our next activity.

4. Announcement of contest rules:

   The Platform driver team contest will formally start on Sunday! Click this link to check the activity rules. Contest is on for odd-numbered days. Teams compete to win a cash bonus!

5. Announcement of daily updates:

   The first day results of driver team contest are ready to be revealed! Did you beat your opponent? Did you team win? Click the newsletter to find out.

EC.2. Pre-Contest Survey

Captains, please contact each team member, confirm, and fill out the [requested] information. We suggest that team captains contact team members by phone, and then set up a WeChat group to facilitate information acquisition from and communications with the team members. Move on to victory!

Team formation confirmation deadline: August 18th.

Please fill out the information completely and correctly. Captains who successfully confirm the team formation will get an extra bonus of 50 CNY after the contest.

1. As a captain, please contact every team member and obtain the last 3 digits of their license plate numbers. [six blank lines, one for each team member]
2. Together with your team members, please come up with a powerful name for your team: ______
3. To get to know each other better and to increase the likelihood of winning, please confirm with your team members: Where is the farthest hometown from Dongguan among your team members?
4. To get to know each other better and to increase the likelihood of winning, please confirm with your team members: What is the maximum age in your team?
5. If you encounter any problem in the team formation process, please explain here. If you encounter issues with any of your team members, please explain and leave the team member's phone number here.

EC.3. Newsletter Implementing Treatments

The newsletter for each treatment is identical except for the section, "Prize Allocation Rules." Therefore, we first present the newsletter for the Individual Prize treatment here in full.

Contest Rules:

- Two teams form a match.
- Rules for winning:
  - — At the individual contest level, the driver who completes more trips during the contest day wins the individual contest. If the number of trips tie, the driver who generates more revenue wins.
  - — At the team contest level, the team whose members win a majority of their individual contests during the contest day wins the team contest.
- Competitor matching:
  - — Individual matching: a team member is ranked within a team based on the number of completed trips in the previous game day, and compete with the member of the same rank in the rival team.
  - — Team matching: The system pairs teams with comparable productivity based on the total number of completed trips in the two weeks prior to the contest. The pairing persists [throughout the contest].
- Contest days: August 13, 15, 17, 19, 21; 5 days in total.

Prize Allocation Rules: [Individual Prize treatment]

The team member who wins the individual contest receives 30 CNY, with a maximum total of 150 CNY for the five contest days.

Additional Rules:

1. Carpool trips and pre-scheduled trips also count towards the contest.
2. Prize amounts, include the team captain's reward, will be posted within five business days.
3. If the system detects cheating behavior, the respective team member's completed trips will be treated as zero.
4. Before the start of the contest, if a team member can no longer participate due to unexpected circumstances, the system will replace this team member with another driver of similar characteristics after confirmation from both the captain and the respective team member.
5. After the contest begins, team members can no longer be replaced. For team members who can no longer participate due to an unexpected circumstance, the captain should provide timely feedback and communications. Upon confirmation, the respective team member's number of completed trips in future contest days will be set as zero, and any [of the team member's eligible] prize will be divided equally among the remaining teammates.

This is the end of the newsletter for the Individual Prize treatment.

The newsletter for each treatment is identical except for the section, "Prize Allocation Rules." Therefore, we present only this section of the newsletter for the Group Prize and Hybrid Prize treatments.

Prize Allocation Rules: [Group Prize treatment]

The team that wins a team contest receives 210 CNY, with a maximum total of 1050 CNY for the five contest days (with the prize divided equally among the team members).

Prize Allocation Rules: [Hybrid Prize treatment]

The team member who wins an individual contest receives 15 CNY, whereas the team that wins the team contest receives 105 CNY (with the prize divided equally among the team members). The individual and group prizes are calculated separately.

EC.4. Randomization Process

In this subsection, we describe the treatment assignment process used in the experiment. Note that our experiment consists of two stages of treatment assignment. The first stage involves partitioning drivers into either teams or the control or backup group; the second stage involves assigning teams to different prize structures and matching teams into pairs. We denote these stages separately as the team formation stage and the contest stage and detail the processes as follows.

Team formation stage Here we summarize the team formation process denoted by Algorithm 1. Our initial sample consists of 2,343 eligible drivers who sign up to participate in our experiment. Among these drivers, 1,750 drivers are allocated to be in the treatment group, 350 in the control group, and 243 in the backup group. The 1,750 drivers in the treatment group are formed into teams based on five different team formation algorithms (350 drivers assigned using each algorithm). Therefore, we first randomly partition the drivers into seven groups, six of which consist of 350 drivers and the other of 243 drivers. We run Kolmogorov-Smirnov tests between each two groups of drivers to measure if they have similar distributions on productivity, age, and Platform age. We repeat the randomly partitioning and K-S tests until all p-values are larger than 0.05.

Next, we form 50 teams of seven within each of the five treatment conditions. For the three similarity based algorithm (hometown/age/productivity-similarity), we use a bucketing algorithm that first partition drivers into buckets based on the corresponding similarity measurements and then partition each bucket into teams. In the hometown-similarity condition, each bucket corresponds to one or a few nearby provinces; in the age-similarity condition, each bucket corresponds to a span of 5 or 10 years of birth; in the productivity-similarity condition, each bucket corresponds to a decile in productivity. After constructing the bucket, we perform two feasibility checks to ensure that each bucket can be further partitioned into teams. That is, each bucket size should be divisible by 7 and there should be enough drivers volunteering for captains within each bucket. If the feasibility check fails for any of the bucket, we restart the treatment assignment process from the beginning. If the buckets are sucessfully constructed, we partition each bucket of $7m$ drivers to teams by randomly select m captain volunteers as team captains and then assign the remaining $6m$ drivers to each team using round-robin.

Next, we form 50 teams of seven within each of the five treatment conditions. For the three similarity-based algorithms (hometown, driver age, and productivity), we use a bucketing algorithm that first partitions drivers into buckets based on the corresponding similarity measurements and then partitions each bucket into teams. In the hometown-similarity condition, each bucket corresponds to one or a few nearby provinces; in the age-similarity condition, each bucket corresponds to a span of 5 or 10 years of birth; in the productivity-similarity condition, each bucket corresponds to a decile in productivity. After constructing the buckets, we perform two feasibility checks to ensure that each bucket can be further partitioned into teams. That is, each bucket size should be divisible by 7 and there should be enough drivers volunteering for captains within each bucket. If the feasibility check fails for any of the buckets, we restart the treatment assignment process from the beginning for that bucket. Once all buckets are successfully constructed, we partition each bucket of $7m$ drivers into teams by randomly selecting m captain volunteers as team captains and then assigning the remaining $6m$ drivers to each team using a round-robin process.

The bucketing algorithm can be easily modified for the random condition, that is, we treat all drivers in the random condition as one bucket.

For the productivity-diversity condition, we adapt strata sampling without replacement to partition drivers. That is, we first construct seven strata based on drivers' productivity levels. Then we repeatedly perform strata sampling without replacement to select one driver from each strata to form a team. We run feasibility checks after each sampling to ensure that there is at least one captain volunteer in the newly-formed team and that there are enough captain volunteers in the remaining set of drivers in this condition. If the feasibility checks fail, we discard the current team and re-run the strata sampling process.

Contest Stage Next, we describe the treatment assignment process in the contest stage, where we assign teams to different prize structures and match teams into pairs for the contest. We summarize the process denoted by Algorithm 2

First, we randomly assign teams to the three prize structures so that each prize structure has an even number of teams and the productivity distributions are balanced across the prize structures. Next, we match teams within each prize structure by matching as many team pairs from the same team formation algorithm as possible, and then matching the remaining teams within the same prize structure.

Algorithm 1: Treatment Assignment in the Team Formation Stage

```
1  repeat
2      Randomly partition the 2,343 drivers into seven conditions (five team formation
         algorithms of size 350 each, one control condition of size 350, and 243 backup drivers).
       // Step 1. Check covariate balance between conditions.
3      foreach pair of conditions do
4          Calculate p-values of Kolmogorov-Smirnov test on covariates of the two conditions.
5          if min p-value < 0.05 then Balance check fails, restart the process from Line 1
6      end
       // Step 2. Construct buckets for similarity-based and random conditions.
7      for drivers in hometown-similarity condition do
8          Assign them into buckets, one for each province (including nearby province(s)).
9      end
10     for drivers in age-similarity condition do
11         Assign them into buckets, each for a span of 5 or 10 years of birth (1980-1984, etc.)
12     end
13     for drivers in productivity-similarity condition do
14         Assign them into 10 buckets, each for a decile in productivity.
15     end
16     for drivers in random condition do  Assign all of them into one bucket.
17     foreach bucket in hometown/age/productivity-similarity and random conditions do
18         if bucket size not divisible by 7 or not enough volunteers for captains then
19             Team formation is not feasible, restart the process from Line 1
20         else
21             Randomly select bucket_size/7 number of captain volunteers as team captains.
22             Randomly assign other drivers to the team captains using a round-robin process.
23         end
24     end
       // Step 3. Use stratified sampling for productivity diversity condition
25     for drivers in productivity-diversity condition do
26         Assign them into 7 strata based on productivity, each consisting of 50 drivers.
27         repeat
28             for i in 1..50 do
29                 repeat
30                     Randomly select one driver from each stratum, yielding 7 drivers.
31                 until ≥1 driver(s) volunteer(s) for captain and remaining drivers are feasible
                     or max attempts reached
32                 if max attempts reached then
33                     reset teams in this condition and repeat from Line 27
34                 end
35             end
36         until all 50 teams are formed or max attempts reached
37         if max attempts reached then
38             Team formation is not feasible, restart the process from Line 1
39         end
40     end
41 until a balanced and feasible partition is found
```

Algorithm 2: Treatment Assignment and Team Matching in the Contest Stage

```
// Step 1. Assign teams to prize structures
repeat
    Randomly partition the 250 teams into three prize structures (individual/hybrid/group).
    Check covariate balance between teams in different prize structures.
until each prize structure has an even number of teams and p-values of
  Kolmogorov-Smirnov tests > 0.1
// Step 2. Pair teams within each prize structure
foreach Prize Structure do
    repeat
        Randomly select two teams of the same team formation algorithm as a pair.
    until all remaining teams are of different formation algorithms
    Randomly pair remaining teams within the current prize structure.
end
```

EC.5. A Theoretical Framework

In this section, we set up a theoretical framework to motivate our hypotheses. The reader can find similar characterizations of symmetric pure strategy Bayesian Nash equilibrium strategy in simultaneous contests under incomplete information in textbooks, such as Chapter 2 in **?** or **?**. Using our field experiment context, we sketch a simple version here for completeness. Following **?**, we model the contest as a rank order tournament, as there is some randomness in which revenue depends on effort.[1] The qualitative conclusions from the model extend to an all-pay auction setting, outlined in our previous version of the paper.

For player i, let $e_i \in [0, \bar{e}]$ denote his effort, which can be approximated by the number of hours he drives each day. The platform imposes a maximum of ten hours of driving per day, which justifies the upper bound, $\bar{e}$. Let $x_i = e_i + \epsilon_i$ be driver i's output, or number of trips completed, where ϵ_i is the random component drawn from a known distribution with zero mean and variance σ^2. Let $c(\cdot)$ denote the cost function, which is assumed to be convex, i.e., $c'(\cdot) > 0$, and $c''(\cdot) > 0$. Let $w > 0$ be the piece rate for all players. In the control condition where a driver earns piece rate, a risk neutral driver will choose an effort level to maximize his expected income, $wE(x_i) - c_i(e_i)$. The following first-order condition characterizes the interior solution of the driver's optimal effort level: $c'(e) = w$. That is, a driver will equate his marginal cost of effort to the wage rate. Let $k(\cdot) \equiv c'^{-1}(\cdot)$ denote the inverse marginal cost function. The convexity of the cost function, $c(\cdot)$, implies that $k'(\cdot) > 0$. The optimal effort for a driver under the control condition is as follows.

$$e_0 = k(w). \tag{EC.1}$$

We omit the case with risk aversion and other plausible assumptions on preferences, as these conditions have been addressed in the theoretical (**?**) and experimental literature (**?**). We now characterizes a player's equilibrium effort function under each of the three contest prize rules.

<u>Case 1. Individual Prize.</u> Under the individual prize contest rule, a player wins a cash prize, V, if he completes more trips than his match, regardless of whether his team wins. If team identity is not taken into consideration, this reduces to a modified two-player rank order tournament with the extra component of piece rate, wx_i. Player i chooses effort level e_i to maximize the following expected utility function:

$$\begin{aligned} EU_i &= P(x_i \geq x_j)V + wE(x_i) - c_i(e_i) \\ &= P(e_i + \epsilon_i \geq e_j + \epsilon_j)V + wE(e_i + \epsilon_i) - c_i(e_i) \\ &= P(e_i - e_j \geq \epsilon_j - \epsilon_i)V + we_i - c_i(e_i) \\ &= F(e_i - e_j)V + we_i - c_i(e_i), \end{aligned} \tag{EC.2}$$

[1] We thank an anonymous reviewer for suggesting this approach.

where $F(\cdot)$ is the CDF for $\epsilon_j - \epsilon_i$, with a corresponding density function $f(\cdot)$. Player i chooses effort level e_i to maximize Equation (EC.2), yielding the following first-order condition characterizing the solution, $e_I(\cdot)$:

$$c'(e_i) = w + f(e_i - e_j)V.$$

In a symmetric Bayesian Nash equilibrium, each player employs the same effort function $e(\cdot)$, with $e_i = e_j$. In the special case where $F(\cdot)$ is normal, $\epsilon \sim N(0, \sigma^2)$, we have $f(0) = \frac{1}{2}\sigma\sqrt{\pi}$. We thus obtain the following equilibrium effort function:

$$e_I = k\left(w + \frac{1}{2}\sigma\sqrt{\pi}V\right).$$

In an example with a quadratic cost function, $c_i(e_i) = c_i e_i^2/2$, we obtain the following close-form solution for the effort function:

$$e_I = \frac{w}{c_i} + \frac{\sigma\sqrt{\pi}V}{2c_i}. \tag{EC.3}$$

Case 2. Group Prize. Under the group prize rule, a team wins if and only if a majority of its drivers win their component battles. We denote the probability that i is pivotal as P_i. In this case, player i's expected utility function is:

$$EU_i = \left[P_i P(x_i \geq x_j) + (1 - P_i)P(i\text{'s team wins})\right]V + wE(x_i) - c_i(e_i). \tag{EC.4}$$

Player i is pivotal when there are exactly three other players winning and three other players losing in his team. As the *ex ante* probability of any player winning is $1/2$, the probability that i is pivotal is $P_i = \binom{6}{3}\left(\frac{1}{2}\right)^6 = \frac{5}{16}$, and the probability that i's team wins is $\frac{1}{2}$. Therefore, the objective function (EC.4) can be simplified as:

$$EU_i = \left\{\frac{5}{16}F(e_i - e_j) + \frac{11}{16} \times \frac{1}{2}\right\}V + we_i - c_i(e_i).$$

The corresponding first-order condition is:

$$c'(e_i) = w + \frac{5}{16}f(e_i - e_j)V,$$

which leads to the following characterization of the solution, e_G:

$$e_G = k\left(w + \frac{5\sigma\sqrt{\pi}V}{32}\right).$$

Using the same quadratic cost function, we obtain the following closed-form solution:

$$e_G = \frac{w}{c_i} + \frac{5\sigma\sqrt{\pi}V}{32c_i}.$$

Case 3. Hybrid Prize. Under the hybrid prize rule, a player wins a cash prize $V/2$, if he exerts more effort than his match, regardless of whether his team wins; he gets an additional $V/2$ if his team wins. In this case, player i's objective function is a convex combination of those in the first two cases:

$$EU_i = P(x_i \geq x_j)\frac{V}{2} + [P_i P(x_i \geq x_j) + (1-P_i)P(i\text{'s team wins})]\frac{V}{2} + wE(x_i) - c_i(e_i). \qquad \text{(EC.5)}$$

Taking the first-order condition and simplifying, we obtain the following characterization of the solution, $e_H(c_i)$:

$$e_H = k\left(w + \frac{21\sigma\sqrt{\pi}V}{64}\right).$$

Using the same quadratic cost function, we obtain a corresponding closed-form solution:

$$e_H = \frac{w}{c_i} + \frac{21\sigma\sqrt{\pi}V}{64c_i}.$$

We now summarize the above characterizations, using $t \in \{I, T, H\}$ to represent the individual, group, and hybrid prize contest rules, respectively. Based on Equations (EC.2), (EC.4), and (EC.5), we make the following observation.

Observation 1. A player under any of the three contest rules exerts greater effort than a corresponding player under the control condition, i.e., $e_t > e_0$, for $t \in \{I, G, H\}$.

It is also straightforward to see that, under any of the three contest rules, a player with a higher marginal cost exerts less effort, i.e., $\partial e_t/\partial c_i < 0$. Furthermore, a larger prize induces higher effort, i.e., $\partial e_t/\partial V > 0$, for $t \in \{I, G, H\}$. Lastly, more noise induces higher effort, i.e., $\partial e_t/\partial \sigma > 0$. We now rank the equilibrium effort under the three rules.

Observation 2. Without any team identity, a player under the individual prize rule exerts greater effort than a corresponding player under the hybrid prize rule, who in turn, exerts greater effort than one under the group prize rule, i.e., $e_I > e_H > e_G$.

Team Identity. **?** demonstrate that inter-team contests are among the strongest methods inducing team identity in the laboratory. According to **?**, an important part of the social identification process is social comparison. Drivers who are put into teams identify with their teams and maintain their self-esteem by comparing their team favorably with a rival team. Based on this theory, we use a simple reduced-form method to incorporate team identity into the contest framework. Specifically, we use $\alpha_r \geq 1$, $r \in \{I, T, H\}$, to denote the strength of a player's team identity under contest rule r, which translates into how much weight he puts on his team winning the contest. Therefore, the objective functions under each of the three rules are modified as follows.

- Under the individual prize rule, even though a player wins the prize if and only if he exerts higher effort than his rival, his winning contributes to his team's performance. Therefore, he might care more about winning his individual battle. In this case, the objective function (EC.2) becomes

$$EU_i = \alpha_I F(e_i - e_j)V + we_i - c_i(e_i),$$

with the following characterization of the optimal solution:

$$e_I = k\left(w + \frac{\alpha_I}{2}\sigma\sqrt{\pi}V\right).$$

- Under the group prize rule, a player wins the prize if and only if his team wins a majority of the component battles. A player with a stronger team identity cares more about his team winning. The objective function (EC.4) in this case becomes:

$$EU_i = \alpha_G\left[P_i P(x_i \geq x_j) + (1-P_i)P(i\text{'s team wins})\right] + wE(x_i) - c_i(e_i),$$

which leads to the following characterization of the solution:

$$e_G = k\left(w + \frac{5\alpha_G}{32}\sigma\sqrt{\pi}V\right).$$

- Under the hybrid prize rule, with team identity, the objective function (EC.5) becomes:

$$EU_i = \alpha_H\left\{P(x_i \geq x_j)\frac{V}{2} + \left[P_i P(x_i \geq x_j) + (1-P_i)P(i\text{'s team wins})\right]\right\}\frac{V}{2} + wE(x_i) - c_i(e_i).$$

The solution is characterized by:

$$e_H = k\left(w + \frac{21\alpha_H}{64}\sigma\sqrt{\pi}V\right).$$

We now summarize our analysis of team identity.

<u>Observation 3.</u> Under any of the three contest rules, an increase in the strength of a driver's team identity leads to higher effort, i.e., $\partial e_t/\partial\alpha_r > 0$, for $t \in \{I, T, H\}$.

Lastly, we discuss the relative strengths of team identity under the three rules. Since both the individual and, to a lesser extent, hybrid prize rules prime the importance of the individual, we expect that players will have a stronger team identity under the group prize rule, i.e., $\alpha_G > \alpha_I$, and $\alpha_G > \alpha_H$. If $\alpha_G > \frac{16}{5}\alpha_I$, we have $e_G > e_I$. Similarly, when $\alpha_G > \frac{21}{10}\alpha_H$, we have $e_G > e_H$. Therefore, compared to the case without any team identity (Observation 2), we expect higher effort under the group prize rule.

<u>Observation 4.</u> Under the group prize rule, a sufficiently strong team identity can lead to a higher effort compared to that under either of the other rules, i.e., when α_G is sufficiently high, we can have $e_G > e_I$ and $e_G > e_H$.

The observations in this section form the basis for our hypotheses in Section **??**.

EC.6. Additional Analyses

This section presents the results of the following additional data analyses and robustness checks.

- Table EC.1 presents the summary statistics and balance checks for the entire 5×3 factorial design.
- Tables EC.2 to EC.4 report the results from re-running the analysis for Result 1 in the main text, using the original randomized drivers including the 15 dropout drivers.
- Table EC.5 reports the average treatment effect on efficiency, measured by revenue (CNY) per hour.
- Table EC.6 reports the results from re-running the analysis for Result 2 in the main text, using productivity-similar teams as the omitted group. Table EC.7 report the results from re-running the analysis, using the original randomized drivers including the 15 dropout drivers.
- Table EC.8 reports the results of a two-stage least squares instrumental variable regression using randomization into hometown similarity as the instrument. In addition, we provide the corresponding OLS specifications as a benchmark.
- Table EC.9 reports the results from re-running the analysis for Result 3 in the main text, using the original randomized drivers including the 15 dropout drivers.
- Table EC.10 and EC.11 report the effects of prize structure on daily revenue, using pairwise comparisons between the three prize structures for each team formation algorithm. Table EC.10 includes all teams while Table EC.11 includes only teams paired with another team using the same formation algorithm.
- Table EC.12 reports the results of the regression analysis of the interaction effect between prize structure and team formation algorithm.
- Table EC.13 presents results on factors that affect the likelihood of drivers volunteering to be team captains.
- EC.14 presents the comparison of working hours between captains, volunteers who are not assigned as captains, and non-volunteers. We restrict this analysis to teams with two or more captain volunteers.
- Tables EC.15 to EC.17 report the results from re-running the analysis for Result 1 in the main text, excluding team captains.
- Table EC.18 reports the average treatment effect on driver retention.
- Table EC.19 reports the results from re-running the dynamic analysis using revenue as the dependent variable.
- Table EC.20 presents the statistics on factors which affect the likelihood of responding to the post-contest survey.

Table EC.1 Summary Statistics by Team Formation Algorithm and Prize Structure

		Age Similarity	Hometown Similarity	Productivity Diversity	Productivity Similarity	Random	Control	p-value
Daily Revenue	Hybrid	272.8 (109.2)	270.9 (123.3)	264.1 (117.4)	220.6 (105.7)	257.6 (087.2)		
	Individual	254.8 (113.6)	266.3 (117.1)	268.8 (118.5)	271.2 (106.6)	256.6 (110.0)	269.0 (116.0)	0.125
	Team	269.6 (113.1)	255.5 (110.9)	265.8 (113.8)	270.7 (104.1)	267.9 (110.9)		
Local	Hybrid	0.238 (0.428)	0.319 (0.468)	0.221 (0.417)	0.429 (0.497)	0.179 (0.385)		
	Individual	0.255 (0.438)	0.235 (0.426)	0.286 (0.454)	0.200 (0.401)	0.279 (0.450)	0.24 (0.428)	0.001
	Team	0.270 (0.446)	0.134 (0.342)	0.269 (0.445)	0.305 (0.463)	0.214 (0.412)		
Age	Hybrid	35.8 (8.2)	35.5 (7.9)	33.7 (6.9)	34.8 (7.5)	33.6 (7.4)		
	Individual	35.7 (6.4)	35.6 (7.2)	36.3 (7.7)	34.8 (7.6)	35.9 (7.0)	35.2 (7.6)	0.012
	Team	33.1 (6.7)	35.3 (6.7)	34.4 (7.0)	35.7 (7.8)	36.4 (7.8)		
Platform Age	Hybrid	0.881 (0.572)	0.815 (0.612)	0.882 (0.606)	0.874 (0.630)	0.856 (0.524)		
	Individual	0.974 (0.608)	0.877 (0.553)	0.806 (0.560)	0.888 (0.537)	0.907 (0.597)	0.869 (0.559)	0.672
	Team	0.803 (0.563)	0.912 (0.595)	0.847 (0.612)	0.834 (0.536)	0.780 (0.530)		
Male	Hybrid	0.944 (0.230)	0.975 (0.157)	0.964 (0.186)	0.981 (0.137)	0.964 (0.187)		
	Individual	0.969 (0.173)	0.983 (0.129)	0.978 (0.147)	1.000 (0.000)	0.964 (0.186)	0.983 (0.130)	0.327
	Team	0.976 (0.153)	0.991 (0.094)	0.992 (0.092)	0.990 (0.098)	0.984 (0.125)		
# Drivers	Hybrid	126	119	140	105	84		
	Individual	98	119	91	140	140	350	
	Team	126	112	119	105	126		

p-values are from joint orthogonality test between the control and the 5×3 treatment groups.

Table EC.2 Average Treatment Effects on Daily Working Hours, Using the Original Randomized Drivers without Replacing the 15 Dropouts: Difference-in-Differences Linear Regressions.

	Dependent Variable: Δ of Daily Working Hours							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Time Period	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest
Treated	0.955***	0.757***	0.378*	0.126	0.957***	0.755***	0.376***	0.118
	(0.331)	(0.192)	(0.198)	(0.214)	(0.330)	(0.139)	(0.143)	(0.144)
	[0.008]	[0.001]	[0.076]	[0.556]	[0.008]	[0.001]	[0.014]	[0.474]
Age					0.0346**	0.0141**	0.00794	0.0161**
					(0.0166)	(0.00701)	(0.00720)	(0.00725)
Platform Age (year)					0.225	0.396***	0.405***	0.191**
					(0.216)	(0.0911)	(0.0935)	(0.0942)
Local					0.755***	0.409***	0.169	0.716***
					(0.283)	(0.120)	(0.123)	(0.124)
Male					1.825**	0.323	-0.112	0.116
					(0.842)	(0.356)	(0.365)	(0.368)
Constant	-0.393	-0.521***	-1.579***	-1.225***	-3.780***	-1.775***	-2.139***	-2.243***
	(0.302)	(0.175)	(0.181)	(0.195)	(1.065)	(0.450)	(0.462)	(0.465)
[1em] Constant	-0.393	-0.521***	-1.579***	-1.225***	-3.754***	-1.754***	-2.147***	-2.270***
	(0.302)	(0.175)	(0.181)	(0.196)	(1.068)	(0.450)	(0.462)	(0.467)
# Drivers	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Observations (# Drivers × # Days)	2,100	10,500	10,500	10,500	2,100	10,500	10,500	10,500

Standard errors in parentheses are clustered at the driver level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
False discovery rate adjusted q-values are in square brackets to correct for multiple hypothesis testing.

Table EC.3 Average Treatment Effects on Daily Trips, Using the Original Randomized Drivers without Replacing the 15 Dropouts: Difference-in-Differences Linear Regressions.

	Dependent Variable: Δ of Daily Trips							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Time Period	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest
Treated	3.083***	2.355***	1.211**	0.450	3.092***	2.350***	1.212***	0.429
	(0.957)	(0.524)	(0.544)	(0.543)	(0.954)	(0.387)	(0.401)	(0.379)
	[0.003]	[0.001]	[0.035]	[0.408]	[0.003]	[0.001]	[0.004]	[0.296]
Age					0.0803*	0.0410**	0.0361*	0.0369*
					(0.0480)	(0.0195)	(0.0201)	(0.0191)
Platform Age (year)					0.524	1.008***	0.793***	0.245
					(0.624)	(0.253)	(0.262)	(0.248)
Local					2.116***	1.224***	0.188	1.694***
					(0.819)	(0.332)	(0.344)	(0.325)
Male					5.887**	1.302	-0.205	0.203
					(2.435)	(0.987)	(1.022)	(0.968)
Constant	-3.137***	-2.032***	-4.408***	-5.082***	-12.71***	-5.923***	-6.211***	-7.196***
	(0.873)	(0.478)	(0.497)	(0.496)	(3.081)	(1.249)	(1.293)	(1.224)
# Drivers	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Observations (# Drivers × # Days)	2,100	10,500	10,500	10,500	2,100	10,500	10,500	10,500

Standard errors in parentheses are clustered at the driver level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
False discovery rate adjusted q-values are in square brackets to correct for multiple hypothesis testing.

Table EC.4 Average Treatment Effects on Daily Revenue, Using the Original Randomized Drivers without Replacing the 15 Dropouts: Difference-in-Differences Linear Regressions.

	Dependent Variable: Δ of Daily Revenue							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Time Period	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest
Treated	38.26**	34.44***	17.25*	6.024	38.44**	34.49***	17.44**	5.896
	(16.57)	(9.261)	(9.547)	(9.497)	(16.53)	(6.985)	(7.116)	(6.748)
	[0.034]	[0.001]	[0.095]	[0.526]	[0.034]	[0.001]	[0.034]	[0.437]
Age					1.658**	0.730**	0.785**	0.797**
					(0.832)	(0.351)	(0.358)	(0.339)
Platform Age (year)					6.959	17.77***	18.25***	¿ 6.668
					(10.81)	(4.566)	(4.651)	(4.411)
Local					30.41**	16.30***	4.644	26.27***
					(14.19)	(5.996)	(6.108)	(5.793)
Male					90.86**	34.45*	26.99	34.38**
					(42.20)	(17.83)	(18.16)	(17.22)
Constant	-43.98***	-24.24***	-66.96***	-82.06***	-204.9***	-103.1***	-138.0***	-156.0***
	(15.13)	(8.454)	(8.715)	(8.669)	(53.38)	(22.55)	(22.97)	(21.79)
# Drivers	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Observations (# Drivers × # Days)	2,100	10,500	10,500	10,500	2,100	10,500	10,500	10,500

Standard errors in parentheses are clustered at the driver level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
False discovery rate adjusted q-values are in square brackets to correct for multiple hypothesis testing.

Table EC.5 Average Treatment Effects on Efficiency (Revenue Per Hour): Difference-in-Differences Linear Regressions.

	Dependent variable: Δ of Revenue per Hour (RPH)					
	(1)	(2)	(3)	(4)	(5)	(6)
Time Period	Contest	2-week Post Contest	4-week Post Contest	Contest	2-week Post Contest	4-week Post Contest
Treated	-0.124	0.965	0.884	-0.0703	1.001	0.930
	(0.843)	(1.146)	(1.069)	(0.841)	(1.143)	(1.062)
Age				0.0709^{*}	0.120^{**}	0.207^{***}
				(0.0424)	(0.0576)	(0.0536)
Platform Age (year)				0.514	1.451^{*}	1.271^{*}
				(0.549)	(0.746)	(0.694)
Local				-0.386	1.248	1.401
				(0.722)	(0.981)	(0.912)
Male				7.096^{***}	6.424^{**}	7.654^{***}
				(2.146)	(2.916)	(2.711)
Constant	-1.937^{**}	-5.335^{***}	-12.14^{***}	-11.76^{***}	-17.44^{***}	-28.37^{***}
	(0.769)	(1.046)	(0.975)	(2.718)	(3.694)	(3.433)
Observations (# Drivers)	2,100	2,100	2,100	2,100	2,100	2,100

Standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table EC.6 Treatment Effects on Team Responsiveness Omitting the Productivity-Similarity Group.

	Extensive margin Probit, $Y = P$(Responsive)		Intensive margin OLS, $Y = \#$Correct Plate Numbers	
	(1)	(2)	(3)	(4)
Hometown Similarity	0.186*	0.175*	0.437	0.401
	(0.0967)	(0.0970)	(0.378)	(0.380)
	[0.177]	[0.177]		
Age Similarity	0	-0.00712	0.429	0.354
	(0.0952)	(0.0966)	(0.404)	(0.408)
	[1]	[1]		
Productivity Diversity	0.0387	0.0287	0.431	0.409
	(0.0954)	(0.0956)	(0.397)	(0.400)
	[1]	[1]		
Random	0.0193	0.0101	0.326	0.256
	(0.0953)	(0.0958)	(0.400)	(0.403)
	[1]	[1]		
Avg. Pre-contest Revenue (100 CNY)		0.0866		0.176
		(0.0591)		(0.237)
Avg. Age		0.00452		0.0134
		(0.00766)		(0.0305)
Avg. Platform Age (year)		-0.0677		-0.502
		(0.140)		(0.554)
Proportion of Local Driver		-0.00936		-0.501
		(0.135)		(0.505)
Proportion of Male Driver		0.0205		-3.080
		(0.522)		(2.008)
Constant			4.536***	7.199***
			(0.285)	(2.356)
Observations (# teams)	250	250	152	152
H_0: Hometown Similarity = Age Similarity	p=0.0542	p=0.0614		
	[0.177]	[0.177]		
H_0: Hometown Similarity = Random	p=0.0862	p=0.0881		
	[0.177]	[0.177]		

Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
False discovery rate adjusted q-values are in square brackets to correct for multiple hypothesis testing.

Table EC.7 Treatment Effects on Team Responsiveness, Using the Original Randomized Drivers without Replacing the 15 Dropouts and Omitting the Productivity-Similarity Group.

	Extensive margin Probit, $Y = P(\text{Responsive})$		Intensive margin OLS, $Y = \#\text{Correct Plate Numbers}$	
	(1)	(2)	(3)	(4)
Hometown Similarity	0.186*	0.175*	0.437	0.396
	(0.0967)	(0.0970)	(0.378)	(0.381)
	[0.176]	[0.176]		
Age Similarity	0	-0.00732	0.429	0.342
	(0.0952)	(0.0967)	(0.404)	(0.408)
	[1]	[1]		
Productivity Diversity	0.0387	0.0285	0.431	0.400
	(0.0954)	(0.0957)	(0.397)	(0.400)
	[1]	[1]		
Random	0.0193	0.00954	0.326	0.250
	(0.0953)	(0.0958)	(0.400)	(0.404)
	[1]	[1]		
Avg. Pre-contest Revenue (100 CNY)		0.0830		0.172
		(0.0595)		(0.240)
Avg. Age		0.00490		0.0157
		(0.00764)		(0.0303)
Avg. Platform Age (year)		-0.0478		-0.470
		(0.141)		(0.561)
Proportion of Local Driver		-0.00864		-0.416
		(0.135)		(0.506)
Proportion of Male Driver		0.0160		-3.077
		(0.522)		(2.011)
Constant			4.536***	7.087***
			(0.285)	(2.356)
Observations (# teams)	250	250	152	152
H_0: Hometown Similarity = Age Similarity	p=0.0542	p=0.0614		
	[0.176]	[0.176]		
H_0: Hometown Similarity = Random	p=0.0862	p=0.0876		
	[0.176]	[0.176]		

Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
False discovery rate adjusted q-values are in square brackets to correct for multiple hypothesis testing.

Table EC.8 2SLS Instrumental Variable Regressions and their OLS Counterparts

	IV 1st Stage	IV 2nd Stage				OLS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Time Period		1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest
Hometown Similarity	0.172^{**} (0.029)								
Team Responsiveness		121.5 (103.7)	82.68 (57.37)	16.14 (58.73)	50.78 (58.60)	47.43^{***} (13.91)	53.51^{***} (7.724)	15.01^{*} (7.940)	8.259 (7.857)
Constant		-79.15 (63.39)	-39.28 (35.09)	-59.41^{*} (35.92)	-106.6^{***} (35.84)	-34.13^{***} (10.85)	-21.54^{***} (6.023)	-58.72^{***} (6.191)	-80.72^{***} (6.127)
#Drivers		1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750
Observations (#Drivers×#Days)		1,750	8,750	8,750	8,750	1,750	8,750	8,750	8,750

Standard errors in parentheses are clustered at the driver level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
IV first stage result is the average marginal effect based on probit estimates. F-statistic$= 32.54$.

Table EC.9 Similarity and Diversity on Driver Revenue: DID Regressions on Treated Drivers, Using the Original Team Assignment without Replacing the 15 Dropout Drivers and Omitting the Random Treatment Group in Specifications (1) - (3).

	Dependent variable: Δ Daily Revenue (CNY)					
	By Treatment Group			By Diversity Metrics		
	(1)	(2)	(3)	(4)	(5)	(6)
Time Period	Contest	2-week Post Contest	4-week Post Contest	Contest	2-week Post Contest	4-week Post Contest
Age Similarity	-0.309 (15.00) [0.984]	32.67** (12.91) [0.137]	9.164 (10.93) [0.483]			
Hometown Similarity	5.509 (16.15) [0.8]	20.90 (13.26) [0.383]	16.24 (12.79) [0.408]			
Productivity Similarity	-13.04 (15.00) [0.466]	22.50* (12.41) [0.383]	16.53 (12.19) [0.408]			
Productivity Diversity	-16.94 (15.41) [0.466]	20.48 (13.45) [0.383]	10.51 (12.50) [0.483]			
Age Standard Deviation				-0.349 (1.547)	-2.958** (1.406)	0.0586 (1.228)
Average Hometown Distance				0.0308 (0.0234)	-0.00556 (0.0232)	-0.0180 (0.0201)
Productivity Standard Deviation				0.0767 (0.111)	-0.0325 (0.0968)	-0.0351 (0.0960)
Platform Age Standard Deviation				-0.0719 (0.0975)	-0.0495 (0.0844)	-0.0901 (0.0835)
Constant	15.15 (12.02)	-69.02*** (9.196)	-86.53*** (8.025)	6.001 (29.33)	-16.66 (22.65)	-46.67** (21.76)
# Drivers	1,750	1,750	1,750	1,750	1,750	1,750
Observations (#Drivers×#Days)	8,750	8,750	8,750	8,750	8,750	8,750

Standard errors in parentheses are clustered at the team level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
False discovery rate adjusted q-values are in square brackets to correct for multiple hypothesis testing.

Table EC.10 Effects of Prize Structure on Daily Revenue Using 250 Teams and Pairwise Comparisons Between Prize Structures.

Recommendation Algorithm	Prize A	Prize B	Δ outcome (A - B)	Bootstrapped p-value (Unadjusted)	Multiplicity-Adjusted p-value
Age Similarity	Group	Hybrid	-26.74	0.178	0.818
	Group	Individual	-28.44	0.133	0.770
	Hybrid	Individual	-1.70	0.947	0.998
Hometown Similarity	Group	Hybrid	+68.42	0.001	0.008
	Group	Individual	+41.79	0.003	0.335
	Hybrid	Individual	-26.63	0.173	0.838
Productivity Diversity	Group	Hybrid	+15.43	0.488	0.966
	Group	Individual	-1.08	0.964	0.964
	Hybrid	Individual	-16.52	0.472	0.984
Productivity Similarity	Group	Hybrid	-6.24	0.763	0.996
	Group	Individual	-19.79	0.302	0.928
	Hybrid	Individual	-13.55	0.477	0.981
Random	Group	Hybrid	+23.20	0.285	0.926
	Group	Individual	+17.61	0.414	0.979
	Hybrid	Individual	-5.59	0.806	0.994

For each team formation algorithm, we conduct pairwise comparisons between the three prize structures.
The outcome variable is the difference in driver revenue, which is the same as the Δ Daily Revenue (CNY) in Tables **??** and **??**.
This analysis include all 250 teams.
Multiplicity-adjusted p-values calculated according to (**?**).

Table EC.11 Effects of Prize Structure on Daily Revenue Using 222 Teams and Pairwise Comparisons Between Prize Structures.

Recommendation Algorithm	Prize A	Prize B	Δ outcome (A - B)	Bootstrapped p-value (Unadjusted)	Multiplicity-Adjusted p-value
Age Similarity	Group	Hybrid	-20.93	0.2835	0.9345
	Group	Individual	-33.59	0.1025	0.691
	Hybrid	Individual	-12.66	0.5825	0.989
Hometown Similarity	Group	Hybrid	+47.15	0.031	0.317
	Group	Individual	+45.13	0.037	0.3585
	Hybrid	Individual	-2.02	0.9285	0.9955
Productivity Diversity	Group	Hybrid	+12.49	0.5795	0.995
	Group	Individual	-3.79	0.8875	0.9995
	Hybrid	Individual	-16.28	0.4985	0.988
Productivity Similarity	Group	Hybrid	+6.78	0.77	0.996
	Group	Individual	-28.05	0.1765	0.836
	Hybrid	Individual	-34.83	0.1145	0.703
Random	Group	Hybrid	+16.34	0.4875	0.9905
	Group	Individual	+17.61	0.4125	0.98
	Hybrid	Individual	+1.27	0.9595	0.9595

For each team formation algorithm, we conduct pairwise comparisons between the three prize structures.
The outcome variable is the difference in driver revenue, which is the same as the Δ Daily Revenue (CNY) in Tables **??** and **??**.
Only pairs of teams formed using the same formation algorithms are included in this table. This includes 222 out of 250 (89%) teams.
Multiplicity-adjusted p-values calculated according to (**?**).

Table EC.12 Interaction Effect between Prize Structure and Team Formation Algorithm.

	Dependent Variable: Δ of Daily Revenue			
	All teams		Team-pairs in the same algorithm	
	(1)	(2)	(3)	(4)
Age Similarity	25.18	17.92	28.30	16.59
	(20.16)	(17.94)	(21.50)	(16.97)
Hometown Similarity	-5.880	-4.701	-3.589	1.681
	(20.02)	(15.93)	(21.10)	(16.92)
Productivity Similarity	2.677	-3.361	6.245	-4.580
	(19.46)	(15.59)	(20.17)	(16.66)
Productivity Diversity	-9.568	-13.44	-11.97	-17.14
	(21.71)	(16.57)	(22.47)	(17.42)
Group Prize as Ratio	17.24		17.44	
	(21.26)		(21.25)	
Group Prize as Binary		19.71		17.19
		(17.94)		(18.29)
Age Similarity × Group Prize	-46.82*	-47.19*	-51.79*	-42.99*
	(28.42)	(24.24)	(29.94)	(25.18)
Hometown Similarity × Group Prize	23.56	35.40	27.68	28.95
	(29.06)	(24.94)	(30.10)	(25.80)
Productivity Similarity × Group Prize	-37.36	-33.69	-46.93	-31.30
	(28.62)	(24.84)	(29.24)	(25.75)
Productivity Diversity × Group Prize	-16.61	-10.78	-19.61	-11.21
	(31.66)	(26.41)	(32.37)	(27.15)
Constant	7.794	8.978	9.584	11.50
	(15.42)	(12.35)	(15.59)	(12.86)
#Drivers	1,750	1,750	1,554	1,554
Observations (#Drivers×#Days)	8,750	8,750	7,770	7,770

The prize structure is coded as the "Group Prize as Ratio/Binary" variable, indicating what proportion of (or whether) the monetary prize is allocated as group prize. For (1) and (3), the "Group Prize as Ratio" is 1 for Group Prize, 0.5 for Hybrid Prize, and 0 for Individual Prize. For (1) and (3), the "Group Prize as Binary" variable is 1 for the Group Prize structure and 0 for the Individual or Hybrid Prize structure.

Standard errors in parentheses are clustered at the driver level.

* $p<0.1$, ** $p<0.05$, *** $p<0.01$

Table EC.13 Team Captain Volunteers: Probit.

	Dependent Variable Y : Volunteering to be Captain
Pre-Contest Revenue (100 CNY)	0.0253*** (0.00760)
Male	0.0377 (0.0600)
Local	-0.0298 (0.0201)
Age	-0.00124 (0.00117)
Platform Age (years)	0.0297** (0.0150)
# Drivers	2,343

Standard errors are in parentheses.
Coefficients are average marginal effects. We include all drivers who sign up for the competition.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table EC.14 Average Treatment Effects on Daily Working Hours for Teams with Two or More Captain Volunteers: Difference-in-Differences Linear Regressions.

	Dependent Variable: Δ of Daily Working Hours					
	(1)	(2)	(3)	(4)	(5)	(6)
Time Period	During Contest	2-wk Post Contest	4-wk Post Contest	During Contest	2-wk Post Contest	4-wk Post Contest
Captain (Lottery Winner)	0.139 (0.301)	0.306 (0.313)	0.351 (0.337)	0.134 (0.299)	0.290 (0.313)	0.360 (0.335)
Volunteered but not Assigned (Lottery Loser)	-0.529* (0.288)	-0.0840 (0.300)	0.358 (0.322)	-0.537* (0.286)	-0.0940 (0.299)	0.357 (0.320)
Age				0.0298** (0.0141)	0.0244* (0.0148)	0.0367** (0.0158)
Platform Age (year)				0.447** (0.181)	0.363* (0.189)	0.296 (0.202)
Local				0.590** (0.241)	0.164 (0.252)	0.752*** (0.270)
Male				0.481 (0.873)	-0.337 (0.913)	0.187 (0.977)
Constant	0.149 (0.124)	-1.258*** (0.129)	-1.202*** (0.139)	-1.878* (0.997)	-2.115** (1.043)	-3.088*** (1.116)
# Drivers	987	987	987	987	987	987
Observations (# Drivers × # Days)	4,935	4,935	4,935	4,935	4,935	4,935

Standard errors in parentheses are clustered at the driver level.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table EC.15 Average Treatment Effects on Daily Working Hours Excluding Team Captain: Difference-in-Differences Linear Regressions.

	Dependent Variable: Δ of Daily Working Hours							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Time Period	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest
Treated	1.069***	0.776***	0.370*	0.105	1.069***	0.774***	0.372***	0.0934
	(0.334)	(0.192)	(0.200)	(0.218)	(0.334)	(0.141)	(0.144)	(0.146)
Age					0.0321*	0.0106	0.00616	0.0156**
					(0.0177)	(0.00745)	(0.00764)	(0.00774)
Platform Age (year)					0.112	0.314***	0.369***	0.0906
					(0.230)	(0.0970)	(0.0996)	(0.101)
Local					0.671**	0.373***	0.110	0.684***
					(0.299)	(0.126)	(0.130)	(0.131)
Male					1.797**	0.257	-0.0410	0.163
					(0.889)	(0.375)	(0.385)	(0.390)
Constant	-0.393	-0.521***	-1.579***	-1.225***	-3.545***	-1.509***	-2.102***	-2.176***
	(0.301)	(0.173)	(0.180)	(0.196)	(1.122)	(0.473)	(0.486)	(0.492)
# Drivers	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850
Observations (# Drivers × # Days)	1,850	9,250	9,250	9,250	1,850	9,250	9,250	9,250

Standard errors in parentheses are clustered at the driver level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table EC.16 Average Treatment Effects on Daily Trips Excluding Team Captains: Difference-in-Differences Linear Regressions.

	Dependent Variable: Δ of Daily Trips							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Time Period	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest
Treated	3.338***	2.405***	1.222**	0.427	3.340***	2.400***	1.232***	0.399
	(0.964)	(0.524)	(0.550)	(0.555)	(0.962)	(0.390)	(0.404)	(0.385)
Age					0.0742	0.0304	0.0355*	0.0390*
					(0.0510)	(0.0206)	(0.0214)	(0.0204)
Platform Age (year)					0.129	0.801***	0.714**	¿ -0.00608
					(0.664)	(0.269)	(0.279)	(0.266)
Local					2.043**	1.149***	0.00996	1.620***
					(0.864)	(0.350)	(0.362)	(0.346)
Male					6.288**	1.423	0.0950	0.578
					(2.566)	(1.039)	(1.077)	(1.027)
Constant	-3.137***	-2.032***	-4.408***	-5.082***	-12.53***	-5.470***	-6.370***	-7.403***
	(0.868)	(0.472)	(0.495)	(0.500)	(3.238)	(1.312)	(1.359)	(1.296)
# Drivers	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850
Observations (# Drivers × # Days)	1,850	9,250	9,250	9,250	1,850	9,250	9,250	9,250

Standard errors in parentheses are clustered at the driver level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table EC.17 Average Treatment Effects on Daily Revenue Excluding Team Captains: Difference-in-Differences Linear Regressions.

	Dependent Variable: Δ of Daily Revenue							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Time Period	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest	1st Day of Contest	During Contest	2-wk Post Contest	4-wk Post Contest
Treated	43.87***	35.23***	16.74*	5.997	44.02***	35.34***	17.12**	5.805
	(16.77)	(9.319)	(9.614)	(9.705)	(16.75)	(7.069)	(7.179)	(6.862)
Age					1.541*	0.678*	0.754**	0.783**
					(0.887)	(0.374)	(0.380)	(0.363)
Platform Age (year)					1.456	14.93***	17.44***	3.018
					(11.56)	(4.878)	(4.954)	(4.735)
Local					26.19*	14.03**	1.838	24.40***
					(15.03)	(6.346)	(6.444)	(6.159)
Male					95.41**	31.33*	29.71	37.95**
					(44.66)	(18.85)	(19.15)	(18.30)
Constant	-43.98***	-24.24***	-66.96***	-82.06***	-199.5***	-95.22***	-138.3***	-155.4***
	(15.10)	(8.391)	(8.657)	(8.739)	(56.36)	(23.79)	(24.16)	(23.09)
# Drivers	1,850	1,850	1,850	1,850	1,850	1,850	1,850	1,850
Observations (# Drivers × # Days)	1,850	9,250	9,250	9,250	1,850	9,250	9,250	9,250

Standard errors in parentheses are clustered at the driver level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table EC.18 Retention Analysis: Probit.

	(1)	(2)
Treated	0.00846	0.00719
	(0.0204)	(0.0202)
Age		0.00252**
		(0.00105)
Platform Age		0.0191
		(0.0133)
Local		0.0729***
		(0.0190)
Male		-0.0453
		(0.0565)
Observations	2,100	2,100

The dependent variable is defined as working 1 or more days during the fourth week after the contest.
Coefficients are the average marginal effects of the probit estimates.
Standard errors are in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table EC.19 Contest Dynamics on Daily Revenue: OLS

	Y : Daily Revenue (OLS)						
	All Drivers				by Prize Structure		
	(1)	(2)	(3)	(4)	(5) Individual	(6) Hybrid	(7) Group
Individual Win on Day $t-1$	49.80*** (5.571)	53.09*** (5.465)	54.89*** (5.499)	50.71*** (8.490)	66.00*** (21.70)	53.16*** (11.63)	33.84*** (8.366)
Team Win on Day $t-1$	10.65 (6.555)	6.591 (6.047)	8.638 (5.983)	4.760 (7.040)	12.96 (13.29)	1.651 (11.41)	1.714 (11.76)
Individual and Team Win on Day $t-1$				8.424 (10.67)	-2.972 (24.32)	3.900 (15.81)	20.15 (13.52)
Pre-contest Revenue (CNY)		0.822*** (0.0338)	0.757*** (0.0414)	0.757*** (0.0413)	0.645*** (0.0736)	0.819*** (0.0633)	0.812*** (0.0730)
Opponent's Pre-contest Revenue (CNY)			0.110** (0.0431)	0.110** (0.0431)	0.132* (0.0720)	0.0577 (0.0741)	0.136* (0.0761)
Constant	246.6*** (6.161)	31.03*** (8.802)	17.31* (10.15)	18.51* (10.46)	40.70** (20.39)	10.39 (15.72)	3.924 (17.01)
# Drivers	1,750	1,750	1,750	1,750	588	574	588
Observations (#Drivers × #Days)	7,000	7,000	7,000	7,000	2,352	2,296	2,352

The dependent variable uses outcomes from the second to the fifth contest days.
Standard errors in parentheses are clustered at the team level.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table EC.20 Post-contest Survey Response: Probit.

	Dependent Variable Responding to Post-contest Survey
Is Captain	0.0997*** (0.0279)
Volunteered but not Assigned as Captain	0.00679 (0.0364)
# Individual Wins	0.0358*** (0.00766)
# Team Wins	0.0173** (0.00680)
Pre-contest Average Daily Revenue (100 CNY)	-0.0349*** (0.00948)
Male	0.0334 (0.0696)
Local	0.0190 (0.0232)
Age	0.00440*** (0.00138)
Platform Age (Year)	-0.00784 (0.0178)
# Drivers	1,750

Coefficients are average marginal effects.
We include all drivers who participated in the team contest.
Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

EC.7. Post-Contest Survey and Responses

The survey response rate is 25.3% (443 out of 1,750). Table EC.20 presents statistics on factors which affect the likelihood of responding to the post-contest survey. The number and percent of drivers selecting a certain choice are indicated in the parentheses.

1. Did you participate in the team contest in Dongguan from August 13th to August 21st?
   (a) Yes. (99.3%)
   (b) I am not sure. (0.7%)
2. To what extent do you like this team contest? Please rate on a scale from 1 (dislike extremely) to 5 (like very much).
   (1) Dislike extremely (4, 0.9%)
   (2) Dislike (6, 1.4%)
   (3) Neutral (42, 9.5%)
   (4) Like (60, 13.5%)
   (5) Like very much (331, 74.7%)
3. Why do you like this team contest? Please select all that apply. (Limited to the 508 drivers who choose 4 or 5 in Question 2.)
   (a) I have a sense of team belonging. (252, 56.9%)
   (b) The contest is interesting and thrilling. (176, 39.7%)
   (c) I get to make more friends. (260, 58.7%)
   (d) Winning the contest gives me a sense of honor. (233, 52.6%)
   (e) I get the monetary bonus. (255, 57.6%)
   (f) Other reasons. Please specify. (17, 3.8%)
4. Why do you dislike this team contest? Please select all that apply. (Limited to the 69 drivers who choose 1, 2, or 3 in Question 2.)
   (a) The team members are not collaborative or united enough. (23, 44.2%)
   (b) The team is not active enough to justify its existence. (33, 63.5%)
   (c) The captain did not have good leadership or management skills. (27, 51.9%)
   (d) The contest rules are too complicated for me to understand. (4, 7.7%)
   (e) The contest rules are unfair. (8, 15.4%)
   (f) The monetary bonus is not large enough to attract me. (26, 50.0%)
   (g) Other reasons. Please specify. (8, 15.4%)
5. As a team member/captain , what did you get from this team contest? Select all that apply.
   (a) I made more friends. (308, 69.5%)
   (b) I improved my leadership skills. (only for captains, 63, 70.0% among captains)
   (c) I improved my communication skills. (208, 47.0%)

(d) I improved my collaboration skills with other drivers. (256, 57.8%)
(e) I became more experienced and skillful about taking the platform orders. (218, 49.2%)
(f) I got consolation from my teammates when I was down. (144, 32.5%)
(g) Other reasons. Please specify. (24, 5.4%)

6. Which of the rules in this contest do you like? Please select all that apply.
   (a) There was one day off between two contest days. (209, 47.2%)
   (b) Scores were announced immediately after each contest day. (232, 52.4%)
   (c) There were both driver-level and team-level competitions. (297, 67.0%)
   (d) The team could discuss and decide the lineup together. (66, 31.6% among the 209 applicable participants)
   (e) The lineup changed between contest days. (144, 32.5%)
   (f) Other reasons. Please specify. (5, 1.1%)
   (g) None. (19, 4.3%)
7. How did your team get along in this contest? Please select all that apply.
   (a) Although each team member was different, we got along well. (228, 51.5%)
   (b) Our team shared common characteristics and had common conversation topics. (196, 44.2%)
   (c) Everyone contributed for our team's honor during the contest. (301, 67.9%)
   (d) Inactive team members influenced others' enthusiasm [for the contest]. (149, 33.6%)
8. What would you choose if you could participate in the contest again?
   (a) I will choose to be a team member. (273, 61.6%)
   (b) I will choose to be a team captain. (123, 27.8%)
   (c) I have not made up my mind. (47, 10.6%)
9. Why did you prefer NOT to be a team captain? (Applicable only to drivers who choose team member in Question 8.)
   (a) I do not want to initiate communications with strangers. (7, 4.1%)
   (b) I do not know how to lead a team. (73, 42.9%)
   (c) The extra bonus for team captains is not enough. (18, 10.6%)
   (d) Team captains take up too much extra work. (40, 23.5%)
   (e) I am inexperienced with team management and I need more practice. (99, 58.2%)
   (f) Other reasons. Please specify. (11, 6.5%)
10. What do you think a team captain should do?
   (a) Lead by example. (314, 70.9%)
   (b) Be positive and energetic. (287, 64.8%)
   (c) Help teammates to be more active. (315, 71.1%)

   (d) Help the team win the contest. (283, 63.9%)
   (e) Provide feedback and suggestions to the platform on behalf of the team. (251, 56.7%)
   (f) Other reasons. Please specify. (10, 2.3%)

11. What is your preferred way to join a team?
   (a) I prefer to join the team WeChat group and communicate with other teammates online. (55, 12.4%)
   (b) I prefer to call others and ask to join their team. (245, 55.3%)
   (c) I prefer to wait for others to call me and invite me to join their team. (140, 31.6%)
   (d) Other reasons. Please specify. (3, 0.7%)
12. Which of the following teams would you prefer?
   (a) Temporary teams, so I can join a different team in each contest. (92, 20.8%)
   (b) A long-lasting team, so team members can keep in touch after the contest. (351, 79.2%)
13. Which of the following team structure would you prefer?
   (a) I do not care if there is a team captain or not, as long as all team members can work together. (320, 72.2%)
   (b) I prefer to have a team captain and team members, with each member taking on a different role. (121, 27.3%)
   (c) Other reasons. Please specify. (2, 0.5%)
14. Which of the following prize structure do you think is the best for team contests (given that the total amount of the prize is fixed)?
   (a) Group prize. The prize should be allocated equally or proportional to the contributions of the team members. (168, 37.9%)
   (b) Get rid of the group prize. The prize should emphasize individual contributions. (251, 56.7%)
   (c) In addition to the group prize, there should be some prize to reward individuals who contribute a lot. (24, 5.4%)
15. Do you have other suggestions for team activities?