

Analysis Plan

Average treatment effects

First, we examine whether the probability of volunteer i dropping out of the CB program differs by treatment in the following specification:

$$Dropout_i = \alpha_0 + \alpha_1 T1_i + \alpha_2 T2_i + \beta' X_i + \epsilon_i \quad (\text{Eq.1})$$

Dropout takes the value of one if volunteer i drops out before completing the CB program and zero otherwise. T1 takes the value of one if the volunteer is assigned into the performance-contingent public-recognition treatment group. T2 takes the value of one if the volunteer is assigned into the performance-contingent private-recognition treatment group. The omitted treatment category is the participation-based certificate group (T3). X is a set of CBs and students' characteristics (such as CB's age, CB's gender, CB's educational attainment, CB's prior private tutoring experience, and average of students' past performance). We cluster the standard errors at the school level. We are interested in the estimated coefficients α_1 and α_2 .

Second, we examine whether student j of volunteer i performs differently by treatment in the following specification:

$$Test\ Score_j = \delta_0 + \delta_1 T1_i + \delta_2 T2_i + \beta' X_{ij} + \epsilon_{ij} \quad (\text{Eq.2})$$

Test score is student j 's the grade point in the national public examination or in-school examination or the raw score in the standardized test. We consider performance in mathematics and English separately. T1 takes the value of one if the student's tutor i is assigned into the performance-contingent public-recognition treatment group. T2 takes the value of one if the student's tutor i is assigned into the performance-contingent private-recognition treatment group. The omitted treatment category is the participation-based certificate group (T3). X is a set of CBs and students' characteristics (such as CB's age, CB's gender, CB's educational attainment, CB's prior private tutoring experience, and average of students' past performance). We cluster the standard errors at the school level. We are interested in the estimated coefficients δ_1 and δ_2 .

Heterogeneous treatment effects

1. Motivations for volunteering

We are interested in examining how the probability of a volunteer dropping out and the volunteer's student's performance differ across treatments by the volunteering motivation type of the volunteer.

We consider two main motivations for volunteering: altruistic motivation and career motivation. We use several questions selected from the 30 (seven-point Likert scale) questions regarding a tutor's reasons for volunteering in the program collected in the baseline survey. We aggregate the scores from the responses to the relevant questions and then categorize a volunteer's motivation type (altruistic or career) as high if the aggregate score for a motivation type is greater than the average (and as low if otherwise). With high and low motivation for each of type of motivation, we further categorize a volunteer into one of four motivation types: (1) high altruistic and high career motivations; (2) high altruistic and low career motivations; (3) low altruistic and high career motivations; and (4) low altruistic and low career motivations. We then estimate Eq.1 and Eq.2 for each of these four types of volunteers.

2. Past achievement of volunteers

We are interested in examining how the probability of a volunteer dropping out and the volunteer's student's performance differ across treatments by the past achievement of the volunteer. We are also interested in examining how the probability of a volunteer dropping out and the volunteer's student's performance differ across treatments by the volunteering motivation type of a high-achieving volunteer and by the volunteering motivation type of low-achieving volunteer.

We use a volunteer's average grade points for mathematics and English in the grade-10 public national examination to construct an indicator of the volunteer's achievement type. If the average of grade points in mathematics and English examinations is greater than the average in the sample, then we classify a volunteer as a high-achieving tutor (otherwise low-achieving).

We then estimate Eq.1 and Eq.2 for high-achieving tutors and low-achieving tutors separately as well as Eq.1 and Eq.2 for each motivation type for high-achieving and low achieving tutors separately.