Coding Task Difficulty EDA

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```
library(data.table)
library(magrittr)
library(stargazer)
```

```
##
## Please cite as:
##  Hlavac, Marek (2018). stargazer: Well-Formatted Regression and Summary Statistics Tables.
##  R package version 5.2.1. https://CRAN.R-project.org/package=stargazer
```

Pull in the data.

```
d <- read.csv("CodingExperimentFinalResults.csv")
dt <- as.data.table(d)
head(dt)
```

```
##    subject_id test_set_name    w1_code    w2_code control_first
## 1:          1      Pangolin ENS7D8-DXV 84QT7P-GSC             1
## 2:          2      Platypus EC4GJT-SMK AEEQEN-J2J             0
## 3:          3         Okapi A5QMTE-D2P T6CZBD-HJB             1
## 4:          4         Saiga 9Z5UDF-ZEP 3V4X72-YRF             0
## 5:          5     Armadillo WTC3DJ-RJK 4BENHU-NUN             1
## 6:          6     Cassowary JQHT63-A6A K3H7Q3-DPP             0
##    week1_attempted week2_attempted berkeley_student upwork
## 1:               1               1                1      0
## 2:               1               1                1      0
## 3:               1               1                1      0
## 4:               1               1                1      0
## 5:               1               1                1      0
## 6:               1               1                1      0
##    upwork_20dollars pre_task_control pre_task_treat w1_t1_id w1_t1_mins
## 1:                0                1              1        1          5
## 2:                0                1              1        1         12
## 3:                0                1              1        1         11
## 4:                0                1              1        1          8
## 5:                0                1              0        1          4
## 6:                0                1             -1        1         13
##    w1_t1_score w1_t2_id w1_t2_mins w1_t2_score w1_t3_id w1_t3_mins
## 1:          88        3         14         100        5         12
## 2:          88        3          9         100        5         12
## 3:           0        4         20         100        5          1
## 4:           0        4         10         100        5         14
## 5:           0        3         25         100        6          1
## 6:          77        3          7          80        6          6
##    w1_t3_score w1_t1_t2_mins w1_total_mins w1_score w2_t1_id w2_t1_mins
```

```
## 1:           0            19            31       63        2         11
## 2:           0            21            33       63        2         11
## 3:           0            31            32       33        2          4
## 4:           0            18            32       33        2          4
## 5:           0            29            30       33        2          9
## 6:          33            20            26       63        2         10
##    w2_t1_score w2_t2_id w2_t2_mins w2_t2_score w2_t3_id w2_t3_mins
## 1:          88        4         11           0        6          8
## 2:          88        4          8         100        6         14
## 3:         100        3         28           0        6          1
## 4:          88        3         24          80        6          1
## 5:          88        4         15         100        5          6
## 6:           0        4          7         100        5         14
##    w2_t3_score w2_t1_t2_mins w2_total_mins w2_score years_experience w200
## 1:           0            22            30       59                6    1
## 2:           0            19            33       92                3    1
## 3:           0            32            33       67                4    0
## 4:           0            28            29       85               10    1
## 5:           0            24            30       92                1    1
## 6:          37            17            31       33                0    1
##    w207 w209        first_language test_language_guess team_size   age
## 1:    1    0                python              python      6-10 46-55
## 2:    0    0                     r              python      6-10 36-45
## 3:    1    0                 stata              python         0 36-45
## 4:    1    0                   sql              python     11-20 26-35
## 5:    1    0                python              python         0 46-55
## 6:    0    0 microsoft office 2019              python         0 26-35
```

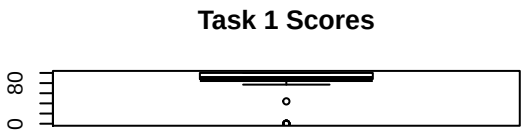
Get all scores for each task.

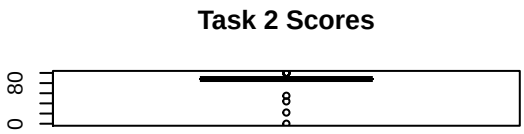
```
q1 <- data.table(
  score = dt[week1_attempted == 1, w1_t1_score],
  mins = dt[week1_attempted == 1, w1_t1_mins]
)

q2 <- data.table(
  score = dt[week2_attempted == 1, w2_t1_score],
  mins = dt[week2_attempted == 1, w2_t1_mins]
)

dt[(week2_attempted == 1) & (w2_t2_id == 3), w2_t2_mins]
```

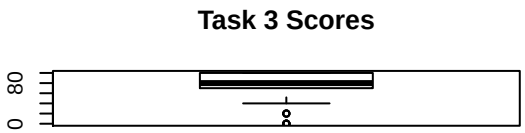
```
##  [1] 28 24 11 10  9  7 21  8  4 13  7  4 19  6  5 20  9 25 27 20 10  8
```

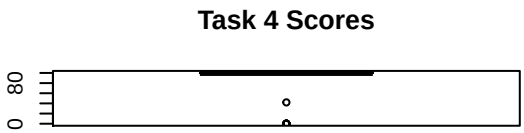
```
q3 <- data.table(
  score = c(
    dt[(week1_attempted == 1) & (w1_t2_id == 3), w1_t2_score],
    dt[(week2_attempted == 1) & (w2_t2_id == 3), w2_t2_score]
  ),
  mins = c(
    dt[(week1_attempted == 1) & (w1_t2_id == 3), w1_t2_mins],
    dt[(week2_attempted == 1) & (w2_t2_id == 3), w2_t2_mins]
  )
)

q4 <- data.table(
```

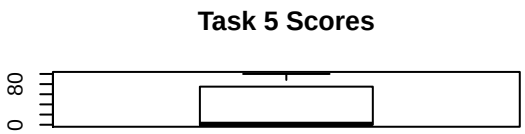
```
  score = c(
    dt[(week1_attempted == 1) & (w1_t2_id == 4), w1_t2_score],
    dt[(week2_attempted == 1) & (w2_t2_id == 4), w2_t2_score]
  ),
  mins = c(
    dt[(week1_attempted == 1) & (w1_t2_id == 4), w1_t2_mins],
    dt[(week2_attempted == 1) & (w2_t2_id == 4), w2_t2_mins]
  )
)

q5 <- data.table(
  score = c(
    dt[(week1_attempted == 1) & (w1_t3_id == 5), w1_t3_score],
    dt[(week2_attempted == 1) & (w2_t3_id == 5), w2_t3_score]
  ),
  mins = c(
    dt[(week1_attempted == 1) & (w1_t3_id == 5), w1_t3_mins],
    dt[(week2_attempted == 1) & (w2_t3_id == 5), w2_t3_mins]
  )
)

q6 <- data.table(
  score = c(
    dt[(week1_attempted == 1) & (w1_t3_id == 6), w1_t3_score],
    dt[(week2_attempted == 1) & (w2_t3_id == 6), w2_t3_score]
  ),
  mins = c(
    dt[(week1_attempted == 1) & (w1_t3_id == 6), w1_t3_mins],
    dt[(week2_attempted == 1) & (w2_t3_id == 6), w2_t3_mins]
  )
)

par(mfrow=c(3,2))
boxplot(q1$score, main='Task 1 Scores')
boxplot(q2$score, main='Task 2 Scores')
boxplot(q3$score, main='Task 3 Scores')
boxplot(q4$score, main='Task 4 Scores')
boxplot(q5$score, main='Task 5 Scores')
boxplot(q6$score, main='Task 6 Scores')
```

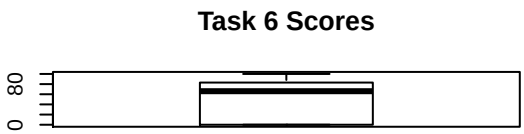













```
t.test(q1$score, q2$score)
```

```
##
##  Welch Two Sample t-test
##
## data:  q1$score and q2$score
## t = -0.90302, df = 81.88, p-value = 0.3692
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -15.33173   5.75840
## sample estimates:
## mean of x mean of y
##  80.48000  85.26667
```

```
t.test(q3$score, q4$score)
```

```
##
##  Welch Two Sample t-test
##
## data:  q3$score and q4$score
## t = -1.2933, df = 91.947, p-value = 0.1992
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -23.55454   4.97653
## sample estimates:
## mean of x mean of y
##  74.58333  83.87234
```

```
t.test(q5$score, q6$score)
```

```
##
##  Welch Two Sample t-test
##
```

```
## data:  q5$score and q6$score
## t = -1.6233, df = 91.792, p-value = 0.108
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -30.200866   3.036421
## sample estimates:
## mean of x mean of y
##  33.64000  47.22222
```

```
t.test(q1$mins, q2$mins)
```

```
##
##  Welch Two Sample t-test
##
## data:  q1$mins and q2$mins
## t = 1.8655, df = 90.067, p-value = 0.06536
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.0871355  2.7715799
## sample estimates:
## mean of x mean of y
##  7.520000  6.177778
```

```
t.test(q3$mins, q4$mins)
```

```
##
##  Welch Two Sample t-test
##
## data:  q3$mins and q4$mins
## t = 1.9195, df = 90.639, p-value = 0.05807
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.08547119  4.98174778
## sample estimates:
## mean of x mean of y
## 11.937500  9.489362
```

```
t.test(q5$mins, q6$mins)
```

```
##
##  Welch Two Sample t-test
##
## data:  q5$mins and q6$mins
## t = 1.0891, df = 92.973, p-value = 0.2789
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.092398  3.745731
## sample estimates:
## mean of x mean of y
## 10.460000  9.133333
```

Control for task difficulty

Now I want to look at whether controlling for task difficulty will give me any better results.

Within-subjects

```
both_attempted <- dt[(week1_attempted == 1) & (week2_attempted == 1)]
both_attempted[, t1t2_control_score := ifelse(
  control_first == 1,
  (w1_t1_score + w1_t2_score) / 2,
  (w2_t1_score + w2_t2_score) / 2)]
both_attempted[, t1t2_treatment_score := ifelse(
  control_first == 1,
  (w2_t1_score + w2_t2_score) / 2,
  (w1_t1_score + w1_t2_score) / 2)]

both_attempted[, t1t2_control_mins := ifelse(control_first==1, w1_t1_t2_mins, w2_t1_t2_mins)]
both_attempted[, t1t2_treatment_mins := ifelse(control_first==1, w2_t1_t2_mins, w1_t1_t2_mins)]

both_attempted[, control_score := ifelse(control_first==1, w1_score, w2_score)]
both_attempted[, treatment_score := ifelse(control_first==1, w2_score, w1_score)]

both_attempted[, control_mins := ifelse(control_first==1, w1_total_mins, w2_total_mins)]
both_attempted[, treatment_mins := ifelse(control_first==1, w2_total_mins, w1_total_mins)]

both_attempted[, score_diff := .(treatment_score - control_score)]
both_attempted[, mins_diff := .(treatment_mins - control_mins)]
both_attempted[, t1t2_score_diff := .(t1t2_treatment_score - t1t2_control_score)]
both_attempted[, t1t2_mins_diff := .(t1t2_treatment_mins - t1t2_control_mins)]
```

```
summary(lm(t1t2_score_diff ~ upwork + berkeley_student + years_experience + age, data=both_attempted))
```

```
##
## Call:
## lm(formula = t1t2_score_diff ~ upwork + berkeley_student + years_experience +
##     age, data = both_attempted)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -45.515 -18.155   0.575  12.167  39.725
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)         12.749      9.769   1.305   0.1997
## upwork               6.270      8.508   0.737   0.4657
## berkeley_student   -14.206     10.753  -1.321   0.1943
## years_experience    -2.910      1.293  -2.250   0.0303 *
## age26-35             3.957      9.686   0.409   0.6852
## age36-45             4.020     14.205   0.283   0.7787
## age46-55             8.643     20.322   0.425   0.6730
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 22.15 on 38 degrees of freedom
## Multiple R-squared:  0.2023, Adjusted R-squared:  0.07637
## F-statistic: 1.606 on 6 and 38 DF,  p-value: 0.1721
```

```
summary(lm(t1t2_mins_diff ~ upwork + berkeley_student + years_experience + age, data=both_attempted))
```

```
##
## Call:
## lm(formula = t1t2_mins_diff ~ upwork + berkeley_student + years_experience +
##     age, data = both_attempted)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -13.425  -4.925   1.566   4.741  15.900
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)       -0.2415     3.4553  -0.070   0.9446
## upwork             2.9380     3.0092   0.976   0.3351
## berkeley_student  -2.6141     3.8031  -0.687   0.4960
## years_experience  -1.0875     0.4574  -2.377   0.0226 *
## age26-35           4.1035     3.4259   1.198   0.2384
## age36-45           9.9748     5.0241   1.985   0.0544 .
## age46-55           5.6619     7.1876   0.788   0.4357
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.835 on 38 degrees of freedom
## Multiple R-squared:  0.1866, Adjusted R-squared:  0.05814
## F-statistic: 1.453 on 6 and 38 DF,  p-value: 0.2206
```

Control for task

```
both_attempted[, control_t1_id_1 := ifelse(control_first == 1, 1, 0)]
both_attempted[, control_t2_id_3 := ifelse(
  ((control_first == 1) & (w1_t2_id == 3)) |
    ((control_first == 0) & (w2_t2_id == 3)),
  1, 0)]
both_attempted[, control_t3_id_5 := ifelse(
  ((control_first == 1) & (w1_t3_id == 5)) |
    ((control_first == 0) & (w2_t3_id == 5)),
  1, 0)]
```

```
both_attempted[, .(subject_id, t1t2_score_diff, control_first, 'W1 T1 T2 Score' = (w1_t1_score + w1_t2_s
```

```
##     subject_id t1t2_score_diff control_first W1 T1 T2 Score W2 T1 T2 Score
##  1:          1           -50.0             1           94.0           44.0
##  2:          2             0.0             0           94.0           94.0
##  3:          3             0.0             1           50.0           50.0
##  4:          4           -34.0             0           50.0           84.0
##  5:          5            44.0             1           50.0           94.0
##  6:          6            28.5             0           78.5           50.0
##  7:          7           -16.0             1          100.0           84.0
##  8:          8           -29.0             0           65.0           94.0
##  9:          9            -6.0             1          100.0           94.0
## 10:         11           -46.0             1          100.0           54.0
```

```
## 11:         15          -32.5             1          100.0           67.5
## 12:         16           10.0             0           94.0           84.0
## 13:         17            5.5             1           88.5           94.0
## 14:         20           16.0             0          100.0           84.0
## 15:         26           -6.0             0           94.0          100.0
## 16:         29            0.0             1           94.0           94.0
## 17:         30            0.0             0           94.0           94.0
## 18:         31          -16.0             1          100.0           84.0
## 19:         32            6.0             0          100.0           94.0
## 20:         33            4.0             1           90.0           94.0
## 21:         34          -11.0             0            0.0           11.0
## 22:         35          -20.0             1           94.0           74.0
## 23:         36           28.0             0          100.0           72.0
## 24:         37            0.0             1           94.0           94.0
## 25:         38           40.0             0           84.0           44.0
## 26:         39            0.0             1           94.0           94.0
## 27:         40            0.0             0           94.0           94.0
## 28:         41           -6.0             1          100.0           94.0
## 29:         42           40.0             0           84.0           44.0
## 30:         43          -16.0             1          100.0           84.0
## 31:         44           28.5             0           88.5           60.0
## 32:         45           50.0             1           50.0          100.0
## 33:         46            6.0             0          100.0           94.0
## 34:         47            6.0             1           94.0          100.0
## 35:         48           26.0             0          100.0           74.0
## 36:         49           -6.0             1          100.0           94.0
## 37:         50            6.0             0          100.0           94.0
## 38:         51          -40.0             1           94.0           54.0
## 39:         52           30.0             0           94.0           64.0
## 40:         53            6.0             1           94.0          100.0
## 41:         54           -4.0             0           90.0           94.0
## 42:         55           -6.0             1          100.0           94.0
## 43:         56          -18.0             0           72.0           90.0
## 44:         58          -10.0             0           90.0          100.0
## 45:         59            0.0             1           50.0           50.0
##     subject_id t1t2_score_diff control_first W1 T1 T2 Score W2 T1 T2 Score
##     t1t2_control_score t1t2_treatment_score
##  1:               94.0                44.0
##  2:               94.0                94.0
##  3:               50.0                50.0
##  4:               84.0                50.0
##  5:               50.0                94.0
##  6:               50.0                78.5
##  7:              100.0                84.0
##  8:               94.0                65.0
##  9:              100.0                94.0
## 10:              100.0                54.0
## 11:              100.0                67.5
## 12:               84.0                94.0
## 13:               88.5                94.0
## 14:               84.0               100.0
## 15:              100.0                94.0
## 16:               94.0                94.0
## 17:               94.0                94.0
```

```
## 18:              100.0                84.0
## 19:               94.0               100.0
## 20:               90.0                94.0
## 21:               11.0                 0.0
## 22:               94.0                74.0
## 23:               72.0               100.0
## 24:               94.0                94.0
## 25:               44.0                84.0
## 26:               94.0                94.0
## 27:               94.0                94.0
## 28:              100.0                94.0
## 29:               44.0                84.0
## 30:              100.0                84.0
## 31:               60.0                88.5
## 32:               50.0               100.0
## 33:               94.0               100.0
## 34:               94.0               100.0
## 35:               74.0               100.0
## 36:              100.0                94.0
## 37:               94.0               100.0
## 38:               94.0                54.0
## 39:               64.0                94.0
## 40:               94.0               100.0
## 41:               94.0                90.0
## 42:              100.0                94.0
## 43:               90.0                72.0
## 44:              100.0                90.0
## 45:               50.0                50.0
##     t1t2_control_score t1t2_treatment_score
```

```
t1t2.mins.diff.small.lm <- lm(t1t2_mins_diff ~ control_t1_id_1 + control_t2_id_3, data=both_attempted)
t1t2.score.diff.small.lm <- lm(t1t2_score_diff ~ control_t1_id_1 + control_t2_id_3, data=both_attempted
stargazer(t1t2.mins.diff.small.lm, t1t2.score.diff.small.lm)
```

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Wed, Apr 17, 2019 - 08:57:29

```
t1t2.mins.diff.lm <- lm(t1t2_mins_diff ~ control_t1_id_1 + control_t2_id_3 + berkeley_student + upwork +
stargazer(t1t2.mins.diff.lm)
```

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Wed, Apr 17, 2019 - 08:57:35

```
t1t2.score.diff.lm <- lm(t1t2_score_diff ~ control_t1_id_1 + control_t2_id_3 + berkeley_student + upwor
stargazer(t1t2.score.diff.lm)
```

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Wed, Apr 17, 2019 - 08:57:35

```
stargazer(t1t2.mins.diff.lm, t1t2.score.diff.lm)
```

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Wed, Apr 17, 2019 - 08:57:35

```
model <- lm(score_diff ~ control_t1_id_1 + control_t2_id_3 + berkeley_student + upwork + age + years_exp
stargazer(model)
```

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu

Table 1:

	Dependent variable:	
	t1t2_mins_diff	t1t2_score_diff
	(1)	(2)
control_t1_id_1	−2.909	−13.460**
	(2.192)	(6.580)
control_t2_id_3	−6.636***	9.267
	(2.192)	(6.580)
Constant	3.545*	2.321
	(1.912)	(5.740)
Observations	45	45
R^2	0.209	0.126
Adjusted R^2	0.171	0.084
Residual Std. Error (df = 42)	7.349	22.059
F Statistic (df = 2; 42)	5.553***	3.023*
Note:	*p<0.1; **p<0.05; ***p<0.01	

% Date and time: Wed, Apr 17, 2019 - 08:57:36

```
model <- lm(mins_diff ~ control_t1_id_1 + control_t2_id_3 + berkeley_student + upwork + age + years_exp
stargazer(model)
```

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Between Subjects

```
flattened_dt <- data.table(
  subject_id=c(
    both_attempted[, subject_id],
    both_attempted[, subject_id]
  ),
  t1t2_mins=c(
    both_attempted[, w1_t1_t2_mins],
    both_attempted[, w2_t1_t2_mins]
  ),
  t1t2_score=c(
    both_attempted[, (w1_t1_score + w1_t2_score) / 2],
    both_attempted[, (w2_t1_score + w2_t2_score) / 2]
  ),
  total_mins=c(
    both_attempted[, w1_total_mins],
    both_attempted[, w2_total_mins]
  ),
  score=c(
    both_attempted[, w1_score],
```

Table 2:

	Dependent variable:
	t1t2_mins_diff
control_t1_id_1	−2.679
	(2.302)
control_t2_id_3	−6.083**
	(2.393)
berkeley_student	−2.609
	(3.560)
upwork	2.072
	(2.868)
age26-35	1.539
	(3.343)
age36-45	6.335
	(4.891)
age46-55	8.394
	(6.849)
years_experience	−0.756*
	(0.447)
Constant	4.624
	(3.687)
Observations	45
R^2	0.327
Adjusted R^2	0.177
Residual Std. Error	7.324 (df = 36)
F Statistic	2.183* (df = 8; 36)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 3:

	Dependent variable:
	t1t2_score_diff
control_t1_id_1	−11.638*
	(6.622)
control_t2_id_3	11.030
	(6.881)
berkeley_student	−12.916
	(10.240)
upwork	10.061
	(8.248)
age26-35	7.510
	(9.616)
age36-45	9.149
	(14.067)
age46-55	12.205
	(19.700)
years_experience	−2.890**
	(1.285)
Constant	8.434
	(10.605)
Observations	45
R^2	0.317
Adjusted R^2	0.165
Residual Std. Error	21.066 (df = 36)
F Statistic	2.085* (df = 8; 36)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 4:

	Dependent variable:	
	t1t2_mins_diff	t1t2_score_diff
	(1)	(2)
control_t1_id_1	−2.679	−11.638*
	(2.302)	(6.622)
control_t2_id_3	−6.083**	11.030
	(2.393)	(6.881)
berkeley_student	−2.609	−12.916
	(3.560)	(10.240)
upwork	2.072	10.061
	(2.868)	(8.248)
age26-35	1.539	7.510
	(3.343)	(9.616)
age36-45	6.335	9.149
	(4.891)	(14.067)
age46-55	8.394	12.205
	(6.849)	(19.700)
years_experience	−0.756*	−2.890**
	(0.447)	(1.285)
Constant	4.624	8.434
	(3.687)	(10.605)
Observations	45	45
R^2	0.327	0.317
Adjusted R^2	0.177	0.165
Residual Std. Error (df = 36)	7.324	21.066
F Statistic (df = 8; 36)	2.183*	2.085*
Note:	*p<0.1; **p<0.05; ***p<0.01	

Table 5:

	Dependent variable:
	score_diff
control_t1_id_1	21.426***
	(6.841)
control_t2_id_3	7.233
	(7.109)
berkeley_student	−16.711
	(10.579)
upwork	5.556
	(8.520)
age26-35	9.493
	(9.934)
age36-45	0.566
	(14.532)
age46-55	26.481
	(20.351)
years_experience	−3.204**
	(1.327)
Constant	0.285
	(10.956)
Observations	45
R^2	0.407
Adjusted R^2	0.276
Residual Std. Error	21.762 (df = 36)
F Statistic	3.093*** (df = 8; 36)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 6:

	Dependent variable:
	mins_diff
control_t1_id_1	−4.308**
	(2.068)
control_t2_id_3	−3.712*
	(2.149)
berkeley_student	−1.496
	(3.198)
upwork	0.098
	(2.575)
age26-35	1.932
	(3.003)
age36-45	0.786
	(4.393)
age46-55	5.169
	(6.152)
years_experience	−0.153
	(0.401)
Constant	4.385
	(3.312)
Observations	45
R^2	0.202
Adjusted R^2	0.025
Residual Std. Error	6.578 (df = 36)
F Statistic	1.142 (df = 8; 36)
Note:	*p<0.1; **p<0.05; ***p<0.01

```
    both_attempted[, w2_score]
  ),
  treat=c(
    both_attempted[, abs(control_first - 1)],
    both_attempted[, control_first]
  ),
  upwork=c(both_attempted[, upwork], both_attempted[, upwork]),
  berkeley_student=c(both_attempted[, berkeley_student], both_attempted[, berkeley_student]),
  control_first=c(both_attempted[, control_first], both_attempted[, control_first]),
  years_experience=c(both_attempted[, years_experience], both_attempted[, years_experience]),
  age=c(both_attempted[, age], both_attempted[, age]),
  control_t1_id_1=c(both_attempted[, control_t1_id_1], both_attempted[, control_t1_id_1]),
  control_t2_id_3=c(both_attempted[, control_t2_id_3], both_attempted[, control_t2_id_3]),
  control_t3_id_5=c(both_attempted[, control_t3_id_5], both_attempted[, control_t3_id_5])
)
```

```
between.subjects.lm <- lm(t1t2_score ~ treat + control_t1_id_1 + control_t2_id_3, data=flattened_dt)
stargazer(between.subjects.lm)
```

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Table 7:

	Dependent variable:
	t1t2_score
treat	0.178
	(4.448)
control_t1_id_1	3.722
	(4.450)
control_t2_id_3	3.086
	(4.450)
Constant	79.709***
	(4.474)
Observations	90
R^2	0.014
Adjusted R^2	−0.021
Residual Std. Error	21.098 (df = 86)
F Statistic	0.403 (df = 3; 86)
Note:	*p<0.1; **p<0.05; ***p<0.01

```
between.subjects.mins.lm <- lm(t1t2_mins ~ treat + control_t1_id_1 + control_t2_id_3, data=flattened_dt)
between.subjects.score.lm <- lm(t1t2_score ~ treat + control_t1_id_1 + control_t2_id_3, data=flattened_d
stargazer(between.subjects.mins.lm, between.subjects.score.lm)
```

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Table 8:

	Dependent variable:	
	t1t2_mins	t1t2_score
	(1)	(2)
treat	−1.333	0.178
	(1.526)	(4.448)
control_t1_id_1	−0.221	3.722
	(1.527)	(4.450)
control_t2_id_3	2.461	3.086
	(1.527)	(4.450)
Constant	17.277***	79.709***
	(1.535)	(4.474)
Observations	90	90
R^2	0.038	0.014
Adjusted R^2	0.004	−0.021
Residual Std. Error (df = 86)	7.240	21.098
F Statistic (df = 3; 86)	1.124	0.403
Note:	*p<0.1; **p<0.05; ***p<0.01	

```
between.subjects.score.all.lm <- lm(t1t2_score ~ treat + control_t1_id_1 + control_t2_id_3 + years_expe
between.subjects.mins.all.lm <- lm(t1t2_mins ~ treat + control_t1_id_1 + control_t2_id_3 + years_experi
stargazer(between.subjects.mins.all.lm, between.subjects.score.all.lm)
```

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Table 9:

	Dependent variable:	
	t1t2_mins	t1t2_score
	(1)	(2)
treat	−1.333	0.178
	(1.424)	(4.381)
control_t1_id_1	−0.382	2.263
	(1.462)	(4.498)
control_t2_id_3	3.079**	2.224
	(1.440)	(4.430)
years_experience	−0.327	1.566*
	(0.261)	(0.802)
upwork	−0.146	5.778
	(1.808)	(5.563)
age	2.845**	−2.507
	(1.305)	(4.013)
berkeley_student	1.821	0.483
	(2.284)	(7.026)
control_first		
Constant	12.791***	75.483***
	(3.040)	(9.351)
Observations	90	90
R^2	0.201	0.088
Adjusted R^2	0.133	0.010
Residual Std. Error (df = 82)	6.757	20.783
F Statistic (df = 7; 82)	2.945***	1.125
Note:	*p<0.1; **p<0.05; ***p<0.01	