

# Survey Participation Incentives

MIDS W241 Summer 2022

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# Introduction

## Background

Surveys are a **crucial research tool**, critical to the success of many studies. Understanding **what drives an increase in survey participation** rates will benefit future research.

In this study, we aim to test the effectiveness of two common survey incentives: **social good** and **financial**.

## Research Question

Incentive?

Financial

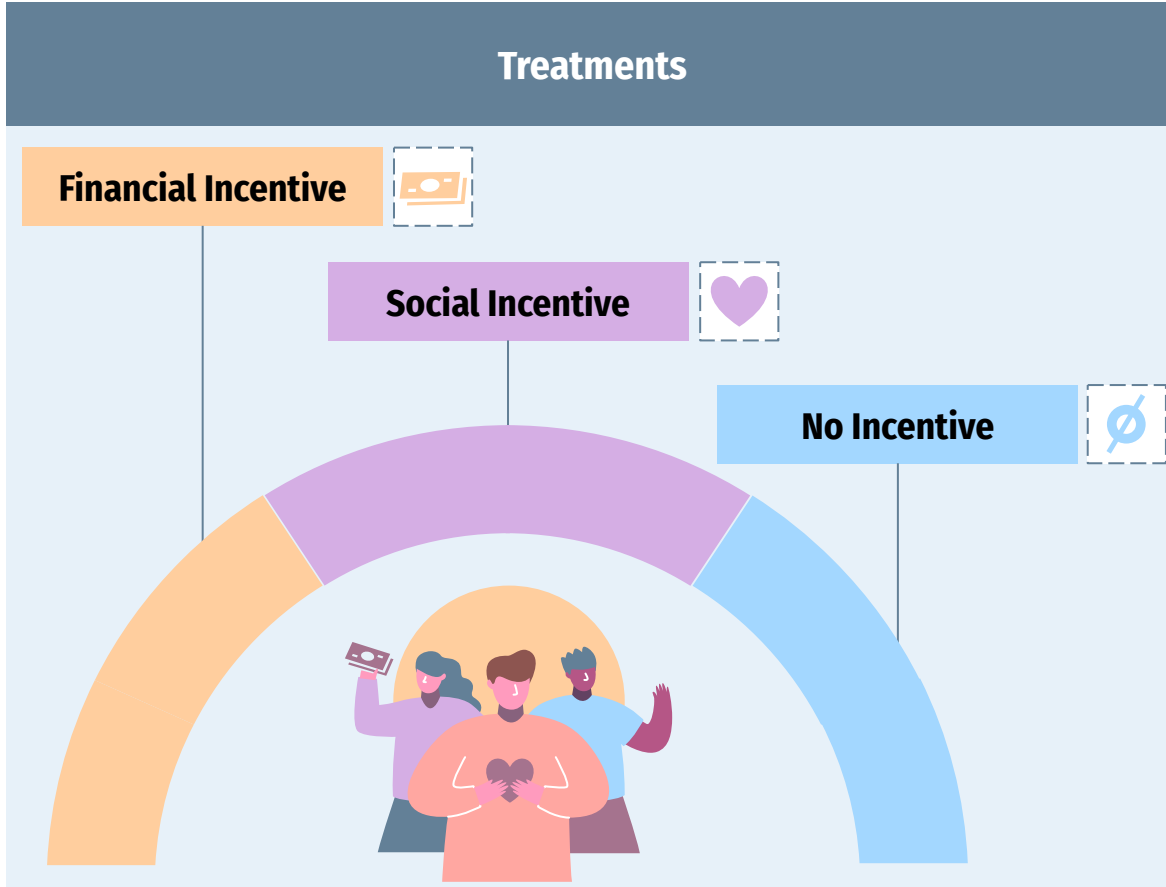
Social Good

None

*Do social good or monetary incentives impact survey taking behavior (time spent and number of questions answered)?*

**Hypothesis:** Financial and social good incentives have a positive treatment effect on the amount of time taken and number of questions answered by people responding to surveys.

# Experimental Design



Tool
Survey in <b>Qualtrics</b>
Randomization
Subjects randomized into one of <b>three groups</b> via <b>Qualtrics randomization</b> feature (33.3% chance of being assigned to any group by clicking link)
Outcome Measures
<ol style="list-style-type: none"><li>1. Number of survey <b>questions</b> answered</li><li>2. Amount of <b>time</b> spent on survey</li></ol>

# Survey

## Intro Message to Everyone

*"You are invited to participate in a research study. Please take a few minutes to complete this pre-questionnaire so we get to know you a little bit. All your responses will be kept anonymous and confidential. Thank you for your time."*



## Pre-Questionnaire of 7 Demographic Questions

*How did you get this survey?  
In the past, what percentages of surveys did you complete?  
How much time, on average, do you spend on a given survey?  
What is your gender?*

*What is your age?  
What is your ethnicity?  
What is your highest degree or level of education?*



## Randomized Treatment Assignment

*100 questions regarding employment, unemployment, and job market  
Multiple choice and open ended*

# Treatments

## Incentive

### No Incentive

"Now that we got a sense of who you are, we are inviting you to complete the rest of the survey regarding employment and unemployment. All your responses will be kept confidential and anonymous. Thank you for your participation. Click next to begin."

### Financial Incentive

"Now that we got a sense of who you are, we are inviting you to complete the rest of the survey regarding employment and unemployment. **You will be entered to win one of five \$25 Amazon gift cards for your time. All your responses will be kept confidential and anonymous.** Thank you for your participation. Click next to begin."

### Social Good Incentive

"Now that we got a sense of who you are, we are inviting you to complete the rest of the survey regarding employment and unemployment. **By taking part in this study, you will help contribute to research on unemployment mitigation. The results of this study will be used to promote job security and help individuals navigate unemployment and its risks.** All your responses will be kept confidential and anonymous. Thank you for your participation. Click next to begin."

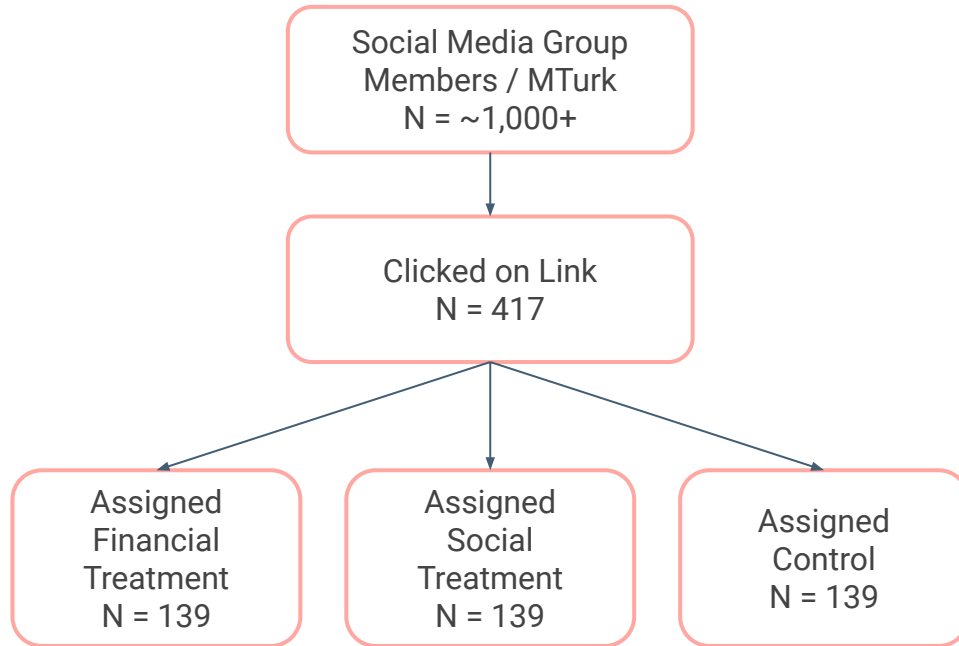
## Reminder Message

*You will be entered to win one of five \$25 Amazon gift cards for your time!*



*You are helping contribute to research on unemployment mitigation. The results of this study will be used to promote job security and help individuals navigate unemployment and its risks.*

# Flow & ROXO



**R = Random**  
**O = Control**  
**X = Treatment**  
**Y = Outcome**

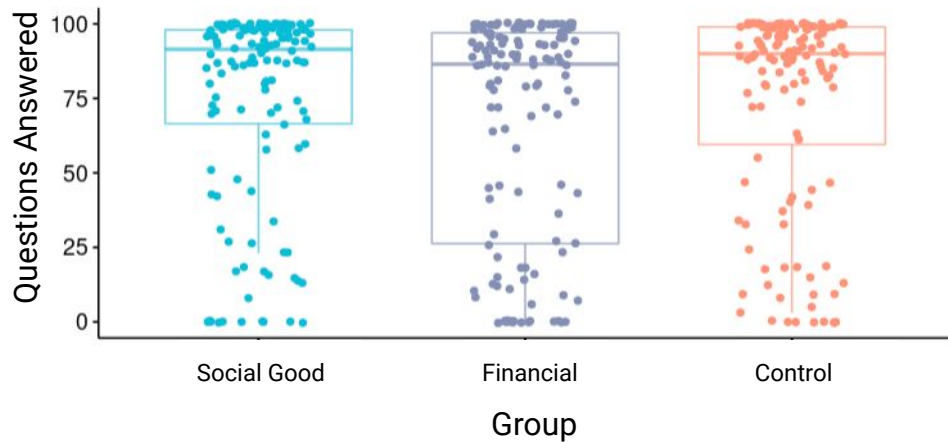
<i>Financial Incentive Treatment Group</i>	$RX_1Y$
<i>Social Incentive Treatment Group</i>	$RX_2Y$
<i>Control Group</i>	$ROY$

## Incentive Type

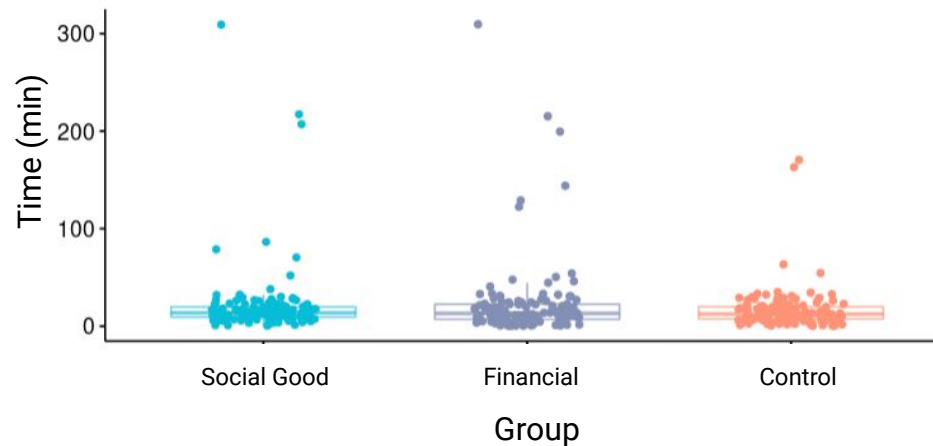
Control Financial Social Good

# Outcomes

Number of Questions Answered by Group



Time by Group



Treatment	ATE Questions Answered (Mean / SD)	ATE Time (Mean / SD)
Financial	-7.8133 (66.18 / 37.82)	6.1654 (22.69 / 39.78)
Social Good	0.8658 (74.86 / 32.65)	4.4722 (20.99 / 36.88)



# Results

## Data Checks

- Covariate balance checks
- Assess outliers
- Assumptions
  - Randomization
  - Spillover
  - Excludability
- Model diagnostics

*No major violations*

## Models

- LM with no covariates
- LM with some covariates
- LM with all covariates
- LM with log duration (all 3)
- Poisson questions answered (all 3)
- Heterogeneous treatment effects

*No significant effects*

## Data Limitations

- Sample population does not generalize to world at large
- Residuals not normal
- Switch to MTurk data

*Imperfect data*

**Takeaway:** The results of this study do not indicate that financial nor social good incentives have a positive treatment effect on the number of questions answered or amount of time taken on a survey

# Looking Forward

How might we improve future iterations of this study with more time and resources?

## This Iteration

While the results of this study did not allow us to reject our null hypothesis, we believe, based on **grounding research** and **identified limitations** of this experiment, that future iterations of this research may support the theory.



## Future Iterations

With additional time and resources, this experiment can be improved in the future with:

- Larger sample size
- Broader, more reliable sample population
- Larger / more meaningful treatment dosage
- Subtler study intentions

Questions?



# **Appendix**

## LM with questions answered

### All covariates

Call:

```
lm(formula = total_ques ~ treat + get_survey + past_survey_per +
    time_on_survey + gender + age + ethnicity + education + mturk,
    data = d2)
```

```

Estimate Std. Error t value Pr(>|t|)
(Intercept)      92.8907    13.2756   6.997 1.31e-11 ***
treat1 - Financial    -5.6441     4.0455  -1.395 0.163841
treat2 - Social Good   2.2075     4.1475   0.532 0.594888
get_surveyFacebook   -21.8343     8.0481  -2.713 0.006993 **
get_surveyInstagram  -16.5375     7.6311  -2.167 0.030890 *
get_surveyLinkedIn   -16.7325     8.6038  -1.945 0.052589 .
get_surveyOther      -24.6986     6.6097  -3.737 0.000217 ***
get_surveySlack      -23.0073     7.4565  -3.086 0.002191 **
get_surveyText Message -22.7463     8.3701  -2.718 0.006899 **
past_survey_per26-50%    2.0699     5.7135   0.362 0.717354
past_survey_per51-75%    8.8700     5.8606   1.513 0.131045
past_survey_per76-100%   7.0597     5.2717   1.339 0.181374
time_on_survey20-30 minutes -10.4297     5.4873  -1.901 0.058152 .
time_on_survey30+ minutes -1.1925     8.6404  -0.138 0.890311
time_on_survey5-10 minutes -6.1882     5.1076  -1.212 0.226484
time_on_surveyLess than 5 minutes -16.5011     6.1353  -2.690 0.007493 **
genderMale           1.9359     3.4096   0.568 0.570540
genderNon-binary / third gender -79.0533    32.7829  -2.411 0.016398 *
genderPrefer not to say 18.2819    37.4521   0.488 0.625752
age31-45 years old    -2.6436     3.9230  -0.674 0.500830
age45+                4.0299     5.3509   0.753 0.451874
agePrefer not to say  3.9401    16.0147   0.246 0.805800
ethnicityAsian       -13.7095     8.6474  -1.585 0.113768
ethnicityCaucasian   -3.6485     7.9893  -0.457 0.648188
ethnicityLatino or Hispanic -8.7807     9.4748  -0.927 0.354689
ethnicityNative American 7.0529    10.2056   0.691 0.489968
ethnicityOther/Unknown -25.8668    16.7751  -1.542 0.123970
ethnicityPrefer not to say -9.0804    13.5042  -0.672 0.501757
ethnicityTwo or More  -4.1118    12.6505  -0.325 0.745348
educationHigh School Degree -4.9322     7.1621  -0.689 0.491490
educationMaster's Degree  8.4694     3.9561   2.141 0.032970 *
educationPh.D or higher  5.8623     9.9016   0.592 0.554192
educationPrefer not to say 1.4380    25.9138   0.055 0.955778
educationSome high school 11.9968    19.2800   0.622 0.534182
educationTrade School  -0.7429    32.5900  -0.023 0.981826
mturk                9.5000     5.5722   1.705 0.089092 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 31.5 on 355 degrees of freedom
(12 observations deleted due to missingness)
Multiple R-squared:  0.2355,    Adjusted R-squared:  0.1601
F-statistic: 3.124 on 35 and 355 DF,  p-value: 4.081e-08
```

## LM with duration

### All covariates

Call:

```
lm(formula = dur_min ~ treat + get_survey + past_survey_per +
    time_on_survey + gender + age + ethnicity + education + mturk,
    data = d2)
```

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	71.1669	43.0721	1.652	0.099363
treat1 - Financial	13.2457	13.1255	1.009	0.313586
treat2 - Social Good	7.0882	13.4564	0.527	0.598693
get_surveyFacebook	-8.4580	26.1118	-0.324	0.746195
get_surveyInstagram	-26.5188	24.7587	-1.071	0.284857
get_surveyLinkedIn	-27.0695	27.9145	-0.970	0.332842
get_surveyOther	3.5075	21.4448	0.164	0.870171
get_surveySlack	-4.7114	24.1922	-0.195	0.845699
get_surveyText Message	-11.8482	27.1564	-0.436	0.662888
past_survey_per26-50%	-1.9616	18.5372	-0.106	0.915787
past_survey_per51-75%	-15.7729	19.0144	-0.830	0.407366
past_survey_per76-100%	0.9494	17.1037	0.056	0.955764
time_on_survey20-30 minutes	3.1613	17.8033	0.178	0.859164
time_on_survey30+ minutes	-18.4390	28.0335	-0.658	0.511126
time_on_survey5-10 minutes	21.0264	16.5713	1.269	0.205327
time_on_surveyLess than 5 minutes	-9.7896	19.9058	-0.492	0.623169
genderMale	-10.4103	11.0624	-0.941	0.347315
genderNon-binary / third gender	46.8333	106.3627	0.440	0.659975
genderPrefer not to say	22.6863	121.5117	0.187	0.852002
age31-45 years old	2.4987	12.7280	0.196	0.844473
age45+	-8.8882	17.3608	-0.512	0.608992
agePrefer not to say	202.8128	51.9589	3.903	0.000114 ***
ethnicityAsian	-34.2678	28.0561	-1.221	0.222744
ethnicityCaucasian	-12.8824	25.9210	-0.497	0.619505
ethnicityLatino or Hispanic	-36.6599	30.7405	-1.193	0.233838
ethnicityNative American	-10.4199	33.1116	-0.315	0.753181
ethnicityOther/Unknown	-47.3716	54.4261	-0.870	0.384679
ethnicityPrefer not to say	48.6125	43.8138	1.110	0.267954
ethnicityTwo or More	-60.0005	41.0440	-1.462	0.144665
educationHigh School Degree	7.8923	23.2372	0.340	0.734327
educationMaster's Degree	-16.8782	12.8355	-1.315	0.189372
educationPh.D or higher	126.2723	32.1252	3.931	0.000102 ***
educationPrefer not to say	-189.8977	84.0761	-2.259	0.024512 *
educationSome high school	-49.1778	62.5529	-0.786	0.432287
educationTrade School	-29.8849	105.7367	-0.283	0.777621
mturk	-27.2739	18.0789	-1.509	0.132289

---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 102.2 on 355 degrees of freedom  
(12 observations deleted due to missingness)  
Multiple R-squared: 0.15, Adjusted R-squared: 0.0662  
F-statistic: 1.79 on 35 and 355 DF, p-value: 0.004949

## LM with log duration

### All covariates

Call:

```
lm(formula = log(dur_min + 1) ~ treat + get_survey + past_survey_per +  
  time_on_survey + gender + age + ethnicity + education + mturk,  
  data = d2)
```

```
Coefficients:
(Intercept)                2.83814      0.38951      7.286 2.08e-12 ***
treat1 - Financial           0.10012      0.11870      0.843  0.39952
treat2 - Social Good        0.14022      0.12169      1.152  0.24997
get_surveyFacebook         -0.24547      0.23614     -1.040  0.29927
get_surveyInstagram        -0.37116      0.22390     -1.658  0.09826 .
get_surveyLinkedIn          -0.21918      0.25244     -0.868  0.38584
get_surveyOther             -0.10708      0.19393     -0.552  0.58120
get_surveySlack             -0.15920      0.21878     -0.728  0.46727
get_surveyText Message     -0.02786      0.24558     -0.113  0.90973
past_survey_per26-50%       0.23450      0.16764      1.399  0.16273
past_survey_per51-75%      0.13233      0.17195      0.770  0.44205
past_survey_per76-100%     0.26419      0.15467      1.708  0.08851 .
time_on_survey20-30 minutes 0.15714      0.16100      0.976  0.32973
time_on_survey30+ minutes  0.04422      0.25351      0.174  0.86163
time_on_survey5-10 minutes 0.06164      0.14986      0.411  0.68111
time_on_surveyLess than 5 minutes -0.29996      0.18001     -1.666  0.09653 .
genderMale                  -0.08185      0.10004     -0.818  0.41379
genderNon-binary / third gender -1.91864      0.96186     -1.995  0.04684 *
genderPrefer not to say     -0.22270      1.09886     -0.203  0.83951
age31-45 years old          0.17764      0.11510      1.543  0.12363
age45+                      0.10587      0.15700      0.674  0.50052
agePrefer not to say        0.82641      0.46988      1.759  0.07948 .
ethnicityAsian              -0.46742      0.25372     -1.842  0.06627 .
ethnicityCaucasian          -0.22187      0.23441     -0.946  0.34454
ethnicityLatino or Hispanic -0.57448      0.27799     -2.067  0.03950 *
ethnicityNative American    -0.13649      0.29944     -0.456  0.64881
ethnicityOther/Unknown      -1.27929      0.49219     -2.599  0.00973 **
ethnicityPrefer not to say   0.08283      0.39622      0.209  0.83453
ethnicityTwo or More        -0.78509      0.37117     -2.115  0.03511 *
educationHigh School Degree  0.13710      0.21014      0.652  0.51456
educationMaster's Degree    0.06935      0.11607      0.597  0.55056
educationPh.D or higher     0.65341      0.29052      2.249  0.02512 *
educationPrefer not to say  -1.58661      0.76032     -2.087  0.03762 *
educationSome high school   -0.76138      0.56568     -1.346  0.17918
educationTrade School       -0.25277      0.95620     -0.264  0.79167
mturk                       -0.06818      0.16349     -0.417  0.67693
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9241 on 355 degrees of freedom
(12 observations deleted due to missingness)
Multiple R-squared:  0.162,    Adjusted R-squared:  0.07935
F-statistic: 1.96 on 35 and 355 DF,  p-value: 0.001314
```

# Poisson with questions answered

## All covariates

Dependent variable:							
	Total Questions Answered						
	Treatment Only	Covariates	All Covariates				
	(1)	(2)	(3)				
treat1	-0.112*** (0.015)	-0.097*** (0.015)	-0.090*** (0.015)	genderNon-binary / third gender	-15.641 (172.655)	(0.015)	(0.021)
treat2	0.012 (0.014)	0.021 (0.015)	0.034** (0.015)	genderPrefer not to say	0.224* (0.125)	4.304*** (0.010)	4.321*** (0.019)
get_surveyFacebook			-0.285*** (0.029)	age31-45 years old	-0.038** (0.015)	4.489*** (0.049)	
get_surveyInstagram			-0.227*** (0.027)	age45+	0.057*** (0.019)		
 get_surveyLinkedIn			-0.209*** (0.031)	agePrefer not to say	0.223*** (0.058)		
get_surveyOther			-0.321*** (0.023)	ethnicityAsian	-0.195*** (0.032)		
get_surveySlack			-0.298*** (0.027)	ethnicityCaucasian	-0.039 (0.028)		
get_surveyText Message			-0.294*** (0.031)	ethnicityLatino or Hispanic	-0.112*** (0.034)		
past_survey_per26-50%			0.076*** (0.023)	ethnicityNative American	0.091*** (0.035)		
past_survey_per51-75%			0.148*** (0.023)	ethnicityOther/Unknown	-0.409*** (0.074)		
past_survey_per76-100%			0.131*** (0.021)	ethnicityPrefer not to say	-0.013 (0.051)		
time_on_survey20-30 minutes	-0.076*** (0.018)	-0.137*** (0.020)		ethnicityTwo or More	-0.042 (0.049)		
time_on_survey30+ minutes	-0.013 (0.029)	-0.026 (0.031)		educationHigh School Degree	-0.066** (0.027)		
time_on_survey5-10 minutes	-0.102*** (0.017)	-0.088*** (0.019)		educationMaster's Degree	0.125*** (0.015)		
time_on_surveyLess than 5 minutes	-0.318*** (0.021)	-0.243*** (0.024)		educationPh.D or higher	0.101** (0.040)		
genderMale			0.029** (0.013)	educationPrefer not to say	-0.192* (0.107)		
				educationSome high school	0.139* (0.071)		
				educationTrade School	0.033 (0.122)		
				mturk	0.161*** 0.136***		

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01



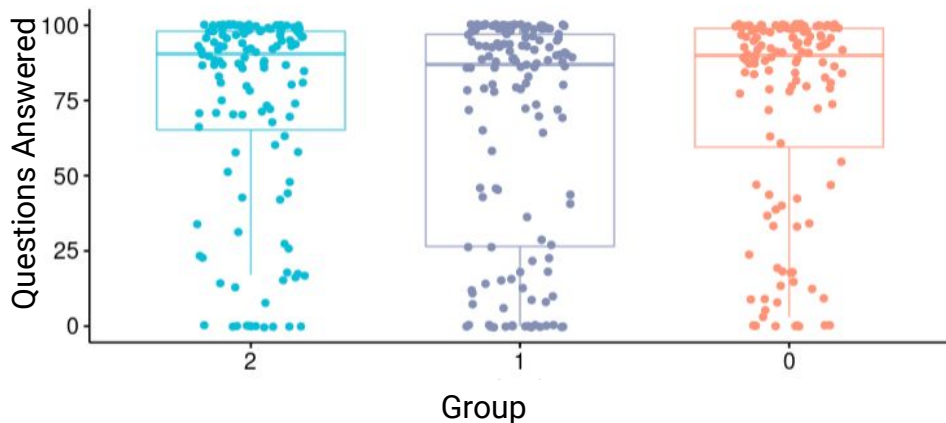
## Incentive Type

Control Financial Social Good

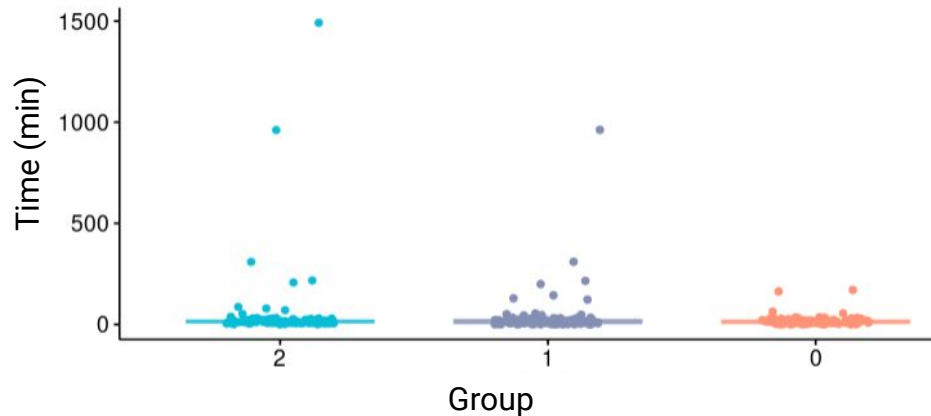
With outliers

# Outcomes

Number of Questions Answered by Group



Time by Group



Treatment	ATE Questions Answered	ATE Time (min)
Financial	-7.8133 (37.8151)	6.1654 (39.7792)
Social Good	0.8658 (32.6529)	4.4722 (36.8782)