# 3. Analysis Plan

true

2021-07-02

```
knitr::opts_chunk$set(echo = TRUE)

library(data.table)
library(magrittr)
library(kableExtra)
library(downloadthis)
library(ggplot2)
library(patchwork)
library(stargazer)
```

## Background

In an attempt to incorporate uncertainty to Gächter et al. (2017)'s dynamic public goods game (DPGG), I plan to run a series of remote online experiments using oTree (Chen, Schonger, and Wickens 2016). The first experiment will replicate Gächter et al.'s NOPUNISH 10-period version as close as possible (given the remote circumstances). The current demo version of the experiment can be found here. Click here to visit the corresponding Github repository.

This report is the third in a series of reports covering this project. It reads the data prepared in the previous reports and analyzes them.

```
base::load(file="../../../data/processed/rda/GMTV2017.rda")              # read GMTV
base::load(file="../../../data/processed/rda/GMTV2017_R1.rda")           # read GMTVFirstRound
base::load(file="../../../data/processed/rda/GMTV2017_COVS.rda")         # read GMTVCovariates
base::load(file="../../../data/processed/rda/replication2021.rda")       # read replication
base::load(file="../../../data/processed/rda/replication2021_R1.rda")    # read replicationFirstRound
base::load(file="../../../data/processed/rda/replication2021_COVS.rda")  # read replicationCovariates
```

```
main <- rbindlist(list(replication, GMTV),
                  use.names = TRUE)

R1   <- rbindlist(list(replicationFirstRound, GMTVFirstRound),
                  use.names = TRUE)

covs <- rbindlist(list(replicationCovariates, GMTVCovariates),
                  use.names = TRUE,
                  fill = TRUE)

rm(list = c("replication", "GMTV", "replicationFirstRound", "GMTVFirstRound", "GMTVCovariates", "replica
```

# Results

```
layout <- theme(panel.background = element_rect(fill = "white"),
                panel.grid = element_blank(),
                panel.grid.major.y = element_line(colour="gray", size=0.25),
                legend.key = element_rect(fill = "white"),
                axis.line.x.bottom = element_line(size = 0.25),
                axis.line.y.left = element_line(size = 0.25),
                axis.title.y = element_text(size = rel(0.75)),
                plot.margin = unit(c(0.25,0.25,0.25,0.25), "cm"),
                legend.title = element_blank()
                )

colors <- c("#F3B05C", "#1E4A75", "#65B5C0", "#AD5E21")
```

## First Round

```
ggplot(R1, aes(y=ownContribution, x=othersContribution/3)) +
  layout +
  geom_abline(intercept = 0, slope = 1, linetype="dashed", alpha = 0.66) +
  geom_point(color = colors) +
  scale_y_continuous(expand = c(0, 0), limits = c(-1, 25)) +
  scale_x_continuous(expand = c(0, 0), limits = c(-1, 25))
```

## Provision of the public good and wealth creation

```
SUM <- main[,
            lapply(.SD, mean, na.rm = TRUE),
            by = c("round", "treatment"),
            .SDcols = "contribution"]

SUM[,
    sum := round(contribution/4)]

upperLimit <- SUM$contribution %>% max() %>% round() + 10

p1 <- ggplot(data = SUM,
             aes(x = round, y = contribution, fill = treatment, color = treatment, lty = treatment)) +
  layout +
  theme(legend.position="bottom") +
  geom_line(show.legend=FALSE) +
  geom_point() +
  scale_x_continuous(name="",  breaks = 1:15) +
  scale_y_continuous(limits = c(0, upperLimit), expand = c(0, 0)) +
  labs(y = "Average Amount of Tokens contributed") +
  scale_color_manual(values = colors) +
  theme(plot.margin = margin(0.25,1,0.25,0.25, "cm"))

rm(list = c("SUM"))
```

```
SHARE <- main[,
            lapply(.SD, mean, na.rm = TRUE),
            by = c("round", "treatment"),
```

```
           .SDcols = "share"]

upperLimit <- 1

p2 <- ggplot(data = SHARE,
             aes(x = round, y = share, fill = treatment, color = treatment, lty = treatment)) +
  layout +
  theme(legend.position="bottom") +
  geom_line(show.legend=FALSE) +
  geom_point() +
  scale_x_continuous(name="",  breaks = 1:15) +
  scale_y_continuous(limits = c(0, upperLimit), expand = c(0, 0)) +
  labs(y = "Share of Current Endowment contributed") +
  scale_color_manual(values = colors)

p1 + p2 + plot_layout(guides = "collect") & theme(legend.position = "bottom")
```

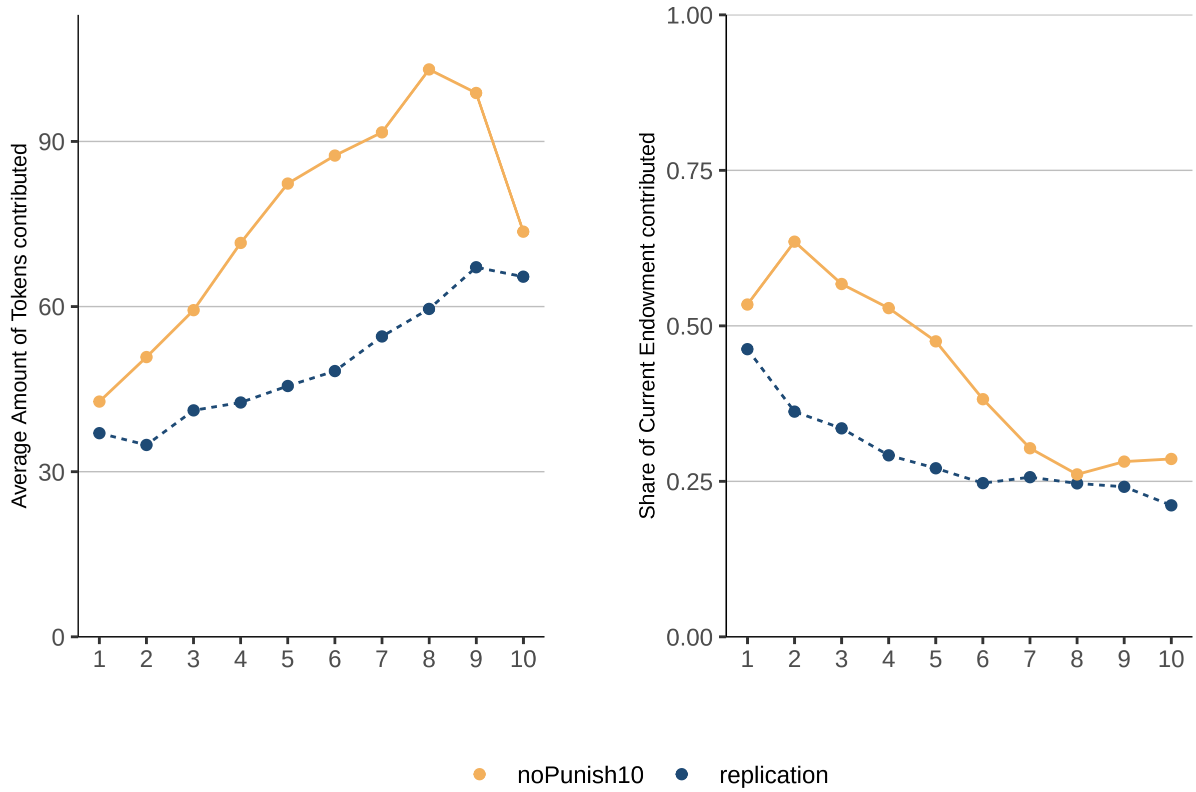


Figure 1: The average amount of tokens contributed over time in treatments.

```
rm(list = c("SHARE", "p1", "p2"))
```

```
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
}

replication <- main[treatment == "replication" & round == 10, stock]
```

```r
GMTV    <- main[treatment == "noPunish10" & round == 10, stock]


rows <- sapply(X = list(replication, GMTV), FUN = NROW) %>% max()
temp <- data.frame(replication = c(replication, rep(NA, rows - NROW(replication))),
                   GMTV = c(GMTV, rep(NA, rows - NROW(GMTV))))

stargazer(temp,
          summary.stat = c("mean", "median","sd", "max", "min", "n"),
          type = type,
          flip = TRUE,
          header=FALSE)
```

Table 1:

| Statistic | replication | GMTV |
|---|---|---|
| Mean | 346.143 | 478.087 |
| Median | 402.000 | 304 |
| St. Dev. | 153.286 | 393.575 |
| Max | 546.000 | 1,792 |
| Min | 137.000 | 161 |
| N | 7 | 23 |

```r
rs1 <- wilcox.test(replication,
                   GMTV,
                   exact = FALSE)$p.value %>%
  round(digits = 4) %>%
  formatC(format = "f",
          digits = 4)
```

The table above displays summary statistics for the 10th period's `stock` a.k.a *Wealth*. The rank sum test yields a p-Value of 0.6590 for the mean wealth during the last period of the game.

The following table shows a simple regression to illustrate differences in the 10th period's wealth between the replication's data and GMTV's data.

```r
# create subsets
main_all  <- main[round == 10]
main_poor <- main[round == 10 & rich == FALSE]
main_rich <- main[round == 10 & rich == TRUE]

# create table
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
}

stargazer(lm(formula = stock ~ treatment, data = main_all),
          lm(formula = stock ~ treatment, data = main_poor),
          lm(formula = stock ~ treatment, data = main_rich),

          column.labels = c("All", "Below median", "Above median"),
          model.numbers = FALSE,
```

```
          dep.var.labels = "Wealth",
          header=FALSE,
          covariate.labels = c("Replication"),

          type = type, digits = 2, omit.stat = c("adj.rsq", "f"), df = FALSE
          )
```

Table 2:

| | *Dependent variable:* | | |
|---|---|---|---|
| | Wealth | | |
| | All | Below median | Above median |
| Replication | −131.94 | −40.70 | −251.33 |
| | (153.68) | (27.62) | (269.00) |
| Constant | 478.09*** | 234.70*** | 731.00*** |
| | (74.23) | (13.27) | (124.52) |
| Observations | 30 | 13 | 14 |
| $R^2$ | 0.03 | 0.16 | 0.07 |
| Residual Std. Error | 356.01 | 41.95 | 413.00 |
| *Note:* | | | *p<0.1; **p<0.05; ***p<0.01 |

These information are also plotted over all periods in the following figure.

```
STOCK <- main[,
              lapply(.SD, mean, na.rm = TRUE),
              by = c("round", "treatment"),
              .SDcols = "stock"]

STOCKr <- main[rich == TRUE,
               lapply(.SD, mean, na.rm = TRUE),
               by = c("round", "treatment"),
               .SDcols = "stock"]

STOCKp <- main[rich == FALSE,
               lapply(.SD, mean, na.rm = TRUE),
               by = c("round", "treatment"),
               .SDcols = "stock"]

upperLimit <- STOCKr$stock %>% max() %>% round() + 20

p1 <- ggplot(data = STOCK,
       aes(x = round, y = stock, fill = treatment, color = treatment, lty = treatment)) +
          layout +
          theme(legend.position="bottom") +
          # geom_vline(xintercept = 10, alpha = 0.66) +
          geom_line(show.legend=FALSE) +
          geom_point() +
          scale_x_continuous(name="",  breaks = 1:10) +
          scale_y_continuous(limits = c(0, upperLimit), expand = c(0, 0)) +
          labs(y = "Wealth") +
```

```r
          scale_color_manual(values = colors) +
          theme(plot.margin = margin(0.25,1,0.25,0.25, "cm"))

p2 <- ggplot(data = STOCKr,
       aes(x = round, y = stock, fill = treatment, color = treatment, lty = treatment)) +
          layout +
          theme(legend.position="bottom") +
          # geom_vline(xintercept = 10, alpha = 0.66) +
          geom_line(show.legend=FALSE) +
          geom_point() +
          scale_x_continuous(name="",  breaks = 1:10) +
          scale_y_continuous(limits = c(0, upperLimit), expand = c(0, 0)) +
          labs(y = "Wealth (Rich)") +
          scale_color_manual(values = colors)

p3 <- ggplot(data = STOCKp,
       aes(x = round, y = stock, fill = treatment, color = treatment, lty = treatment)) +
          layout +
          theme(legend.position="bottom") +
          # geom_vline(xintercept = 10, alpha = 0.66) +
          geom_line(show.legend=FALSE) +
          geom_point() +
          scale_x_continuous(name="",  breaks = 1:10) +
          scale_y_continuous(limits = c(0, upperLimit), expand = c(0, 0)) +
          labs(y = "Wealth (Poor)") +
          scale_color_manual(values = colors)

(p1 | (p2 / p3)) + plot_layout(guides = "collect") & theme(legend.position = "bottom")
```

```r
rm(list = c("STOCK", "STOCKr", "STOCKp", "p1", "p2", "p3"))
```

## Inequality

The following figure plots the Gini-coefficient These over all periods.

```r
GINI <- main[,
             lapply(.SD, mean, na.rm = TRUE),
             by = c("round", "treatment"),
             .SDcols = "gini"]

GINIr <- main[rich == TRUE,
              lapply(.SD, mean, na.rm = TRUE),
              by = c("round", "treatment"),
              .SDcols = "gini"]

GINIp <- main[rich == FALSE,
              lapply(.SD, mean, na.rm = TRUE),
              by = c("round", "treatment"),
              .SDcols = "gini"]

upperLimit <- GINI$gini %>% max() %>% round(digits = 1) + 0.10

p1 <- ggplot(data = GINI,
       aes(x = round, y = gini, fill = treatment, color = treatment, lty = treatment)) +
```

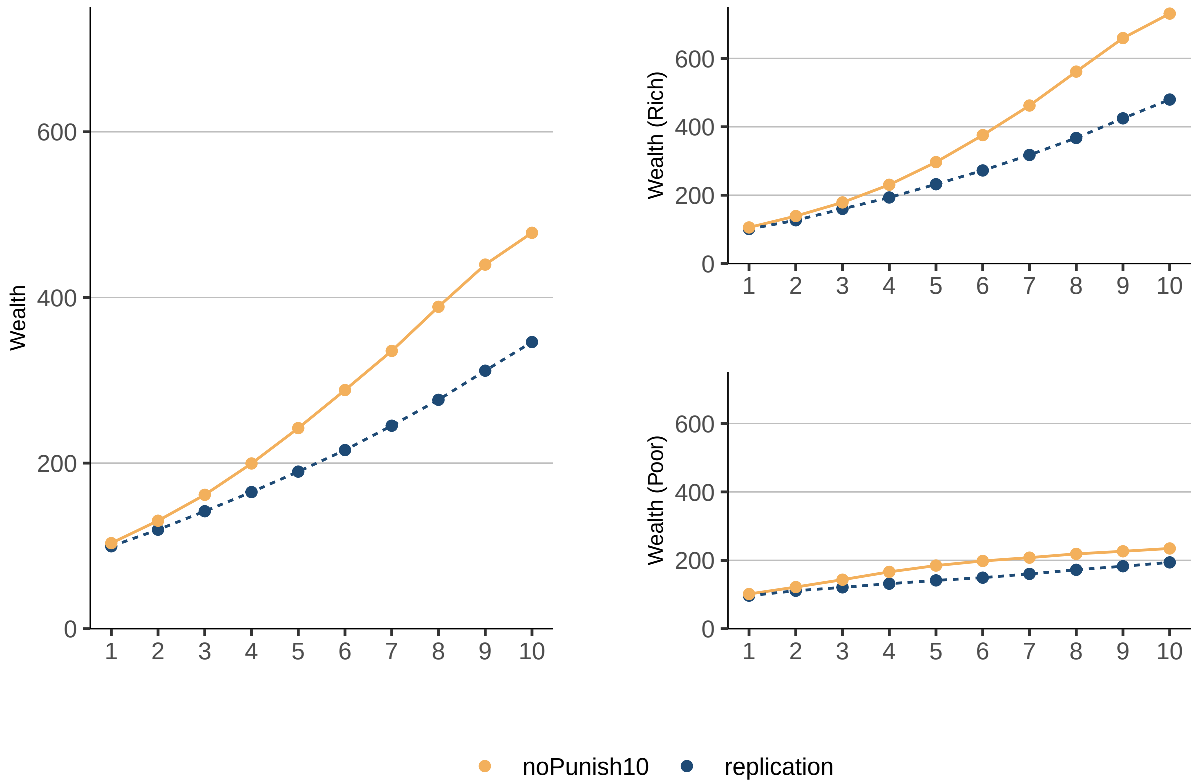


Figure 2: Average wealth over time across treatments.

```
        layout +
        theme(legend.position="bottom") +
        # geom_vline(xintercept = 10, alpha = 0.66) +
        geom_line(show.legend=FALSE) +
        geom_point() +
        scale_x_continuous(name="",  breaks = 1:10) +
        scale_y_continuous(limits = c(0, upperLimit), expand = c(0, 0)) +
        labs(y = "Gini Coefficient") +
        scale_color_manual(values = colors) +
        theme(plot.margin = margin(0.25,1,0.25,0.25, "cm"))

p2 <- ggplot(data = GINIr,
       aes(x = round, y = gini, fill = treatment, color = treatment, lty = treatment)) +
        layout +
        theme(legend.position="bottom") +
        # geom_vline(xintercept = 10, alpha = 0.66) +
        geom_line(show.legend=FALSE) +
        geom_point() +
        scale_x_continuous(name="",  breaks = 1:10) +
        scale_y_continuous(limits = c(0, upperLimit), expand = c(0, 0)) +
        labs(y = "Gini (Rich)") +
        scale_color_manual(values = colors)

p3 <- ggplot(data = GINIp,
       aes(x = round, y = gini, fill = treatment, color = treatment, lty = treatment)) +
```

```
        layout +
        theme(legend.position="bottom") +
        # geom_vline(xintercept = 10, alpha = 0.66) +
        geom_line(show.legend=FALSE) +
        geom_point() +
        scale_x_continuous(name="",  breaks = 1:10) +
        scale_y_continuous(limits = c(0, upperLimit), expand = c(0, 0)) +
        labs(y = "Gini (Poor)") +
        scale_color_manual(values = colors)

(p1 | (p2 / p3)) + plot_layout(guides = "collect") & theme(legend.position = "bottom")
```

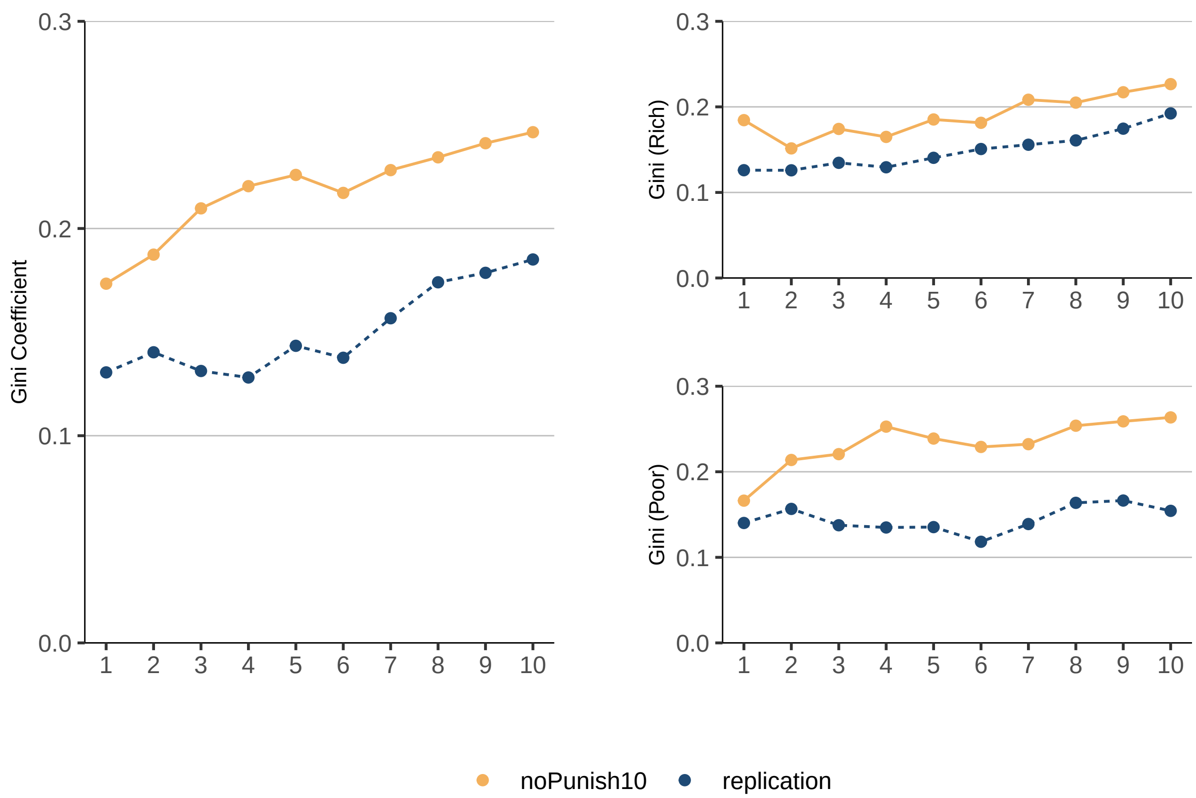


Figure 3: Average Gini coefficient over time across treatments.

```
rm(list = c("GINI", "GINIp", "GINIr", "p1", "p2", "p3"))
```

The following table shows a simple regression to illustrate differences in the 10th period's Gini coefficient between the replication's data and GMTV's data.

```
# create subsets
main_all  <- main[round == 10]
main_poor <- main[round == 10 & rich == FALSE]
main_rich <- main[round == 10 & rich == TRUE]

# create table
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
```

```r
}

stargazer(lm(formula = gini ~ treatment, data = main_all),
          lm(formula = gini ~ treatment, data = main_poor),
          lm(formula = gini ~ treatment, data = main_rich),

          column.labels = c("All", "Below median", "Above median"),
          model.numbers = FALSE,
          dep.var.labels = "Gini",
          header=FALSE,
          covariate.labels = c("Replication"),

          type = type, digits = 2, omit.stat = c("adj.rsq", "f"), df = FALSE
          )
```

Table 3:

| | *Dependent variable:* | | |
|---|---|---|---|
| | Gini | | |
| | All | Below median | Above median |
| Replication | −0.06 | −0.11 | −0.03 |
| | (0.05) | (0.09) | (0.08) |
| Constant | 0.25*** | 0.26*** | 0.23*** |
| | (0.02) | (0.04) | (0.04) |
| Observations | 30 | 13 | 14 |
| $R^2$ | 0.05 | 0.12 | 0.02 |
| Residual Std. Error | 0.12 | 0.14 | 0.12 |
| *Note:* | | | *p<0.1; **p<0.05; ***p<0.01 |

```r
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
}

replication <- main[treatment == "replication" & round == 10, gini]
GMTV    <- main[treatment == "noPunish10" & round == 10, gini]


rows <- sapply(X = list(replication, GMTV), FUN = NROW) %>% max()
temp <- data.frame(replication = c(replication, rep(NA, rows - NROW(replication))),
                   GMTV = c(GMTV, rep(NA, rows - NROW(GMTV))))

stargazer(temp,
          summary.stat = c("mean", "median","sd", "max", "min", "n"),
          type = type,
          flip = TRUE,
          header=FALSE)
```

Table 4:

| Statistic | replication | GMTV |
|---|---|---|
| Mean | 0.185 | 0.246 |
| Median | 0.197 | 0.245 |
| St. Dev. | 0.056 | 0.131 |
| Max | 0.255 | 0.479 |
| Min | 0.099 | 0.044 |
| N | 7 | 23 |

```
rs2 <- wilcox.test(replication,
                   GMTV,
                   exact = FALSE)$p.value %>%
  round(digits = 4) %>%
  formatC(format = "f",
          digits = 4)
```

The table above displays summary statistics for the 10th period's `gini` . The rank sum test yields a p-Value of 0.2807 for the mean `gini` during the last period of the game.

## Sample Properties

```
covariates <- data.table::merge.data.table(x  = covs,
                                           y  = main[round == 10, .(groupID, stock, gini)],
                                           by = c("groupID"),
                                           allow.cartesian = TRUE)

covariates[,
           gender := gender %>% as.numeric()]
```

In addition to the summary statistics a regression table for each covariate as a dependent variable is needed. The independent variable will then be the data source (i.e. GMTV vs replication).

```
# create table
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
}

temp <- covariates[treatment == "replication",
                   .(gender, age, switching_row, education, donation, pq01, pq02, pq03, pq04,
                     pq05, pq06, pq07, pq08, pq09, pq10, pq11, pq12, pq13, pq14)]
stargazer(temp, type = type, flip = FALSE)
```

% Table created by stargazer v.5.2.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Fr, Jul 02, 2021 - 10:39:38

```
# create table
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
```

Table 5:

| Statistic | N | Mean | St. Dev. | Min | Pctl(25) | Pctl(75) | Max |
|---|---|---|---|---|---|---|---|
| gender | 28 | 0.500 | 0.509 | 0 | 0 | 1 | 1 |
| age | 28 | 52.929 | 12.101 | 29 | 45 | 64 | 73 |
| education | 28 | 5.857 | 1.325 | 3 | 5 | 7 | 7 |
| donation | 28 | 1.248 | 1.580 | 0 | 0.1 | 1.6 | 8 |
| pq01 | 28 | 3.929 | 1.086 | 2 | 3 | 5 | 6 |
| pq02 | 28 | 2.286 | 1.560 | 0 | 1 | 4 | 6 |
| pq03 | 28 | 4.036 | 0.881 | 3 | 3 | 5 | 6 |
| pq04 | 28 | 1.500 | 1.622 | 0 | 0 | 2 | 5 |
| pq05 | 28 | 4.500 | 1.106 | 2 | 4 | 5 | 6 |
| pq06 | 28 | 3.464 | 1.503 | 0 | 3 | 4 | 6 |
| pq07 | 28 | 5.036 | 1.232 | 1 | 5 | 6 | 6 |
| pq08 | 28 | 4.393 | 1.548 | 1 | 3.8 | 5 | 6 |
| pq09 | 28 | 1.179 | 1.926 | 0 | 0 | 1.2 | 6 |
| pq10 | 28 | 3.286 | 1.584 | 0 | 2 | 4.2 | 6 |
| pq11 | 28 | 3.821 | 1.124 | 1 | 3 | 4.2 | 6 |
| pq12 | 28 | 3.643 | 1.367 | 1 | 3 | 4.2 | 6 |
| pq13 | 28 | 3.393 | 1.423 | 0 | 2.8 | 4 | 6 |
| pq14 | 28 | 4.393 | 1.197 | 2 | 4 | 5 | 6 |

```
}

stargazer(lm(formula = gender ~ treatment, data = covs),
          lm(formula = age ~ treatment, data = covs),
          # lm(formula = switching_row ~ treatment, data = covs),
          lm(formula = donation ~ treatment, data = covs),

          column.labels = c("female", "age", "risk", "donations"),
          model.numbers = FALSE,
          dep.var.labels.include = FALSE,
          header=FALSE,
          covariate.labels = c("Replication"),

          type = type, digits = 2, omit.stat = c("adj.rsq", "f"), df = FALSE
          )
```

```
# create table
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
}

stargazer(lm(formula = pq01 ~ treatment, data = covs),
          lm(formula = pq02 ~ treatment, data = covs),
          lm(formula = pq03 ~ treatment, data = covs),
          lm(formula = pq04 ~ treatment, data = covs),
          lm(formula = pq05 ~ treatment, data = covs),

          column.labels = c("quick thinker", "easily offended", "very satisfied", "very dependent", "ge
```

Table 6:

| | *Dependent variable:* | | |
|---|---|---|---|
| | female | age | risk |
| Replication | 0.12 | 22.20*** | 0.57 |
| | (0.11) | (1.34) | (0.35) |
| Constant | 0.38*** | 30.73*** | 0.68*** |
| | (0.05) | (0.65) | (0.17) |
| Observations | 120 | 120 | 120 |
| $R^2$ | 0.01 | 0.70 | 0.02 |
| Residual Std. Error | 0.49 | 6.23 | 1.63 |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 | | |

```
          model.numbers = FALSE,
          dep.var.labels.include = FALSE,
          header=FALSE,
          covariate.labels = c("Replication"),

          type = type, digits = 2, omit.stat = c("adj.rsq", "f"), df = FALSE
          )
```

Table 7:

| | *Dependent variable:* | | | | |
|---|---|---|---|---|---|
| | quick thinker | easily offended | very satisfied | very dependent | generally happy |
| Replication | −1.15*** | −1.42*** | −0.95*** | −1.29*** | −1.14*** |
| | (0.27) | (0.34) | (0.25) | (0.30) | (0.24) |
| Constant | 5.08*** | 3.71*** | 4.99*** | 2.79*** | 5.64*** |
| | (0.13) | (0.17) | (0.12) | (0.15) | (0.11) |
| Observations | 120 | 120 | 120 | 120 | 120 |
| $R^2$ | 0.14 | 0.13 | 0.11 | 0.13 | 0.17 |
| Residual Std. Error | 1.23 | 1.59 | 1.16 | 1.41 | 1.09 |
| *Note:* | | | | | *p<0.1; **p<0.05; ***p<0.01 |

```
# create table
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
}

stargazer(lm(formula = pq06 ~ treatment, data = covs),
          lm(formula = pq07 ~ treatment, data = covs),
          lm(formula = pq08 ~ treatment, data = covs),
          lm(formula = pq09 ~ treatment, data = covs),
```

```r
          lm(formula = pq10 ~ treatment, data = covs),

          column.labels = c("work important", "family important", "friends important", "religion importa
          model.numbers = FALSE,
          dep.var.labels.include = FALSE,
          header=FALSE,
          covariate.labels = c("Replication"),

          type = type, digits = 2, omit.stat = c("adj.rsq", "f"), df = FALSE
          )
```

Table 8:

| | *Dependent variable:* | | | | |
|---|---|---|---|---|---|
| | work important | family important | friends important | religion important | politics importan |
| Replication | $-1.25^{***}$ | $-0.45$ | $-1.55^{***}$ | $-1.26^{***}$ | $-0.41$ |
| | (0.30) | (0.32) | (0.27) | (0.38) | (0.33) |
| Constant | $4.72^{***}$ | $5.49^{***}$ | $5.95^{***}$ | $2.43^{***}$ | $3.70^{***}$ |
| | (0.15) | (0.16) | (0.13) | (0.18) | (0.16) |
| Observations | 120 | 120 | 120 | 120 | 120 |
| $R^2$ | 0.13 | 0.02 | 0.22 | 0.08 | 0.01 |
| Residual Std. Error | 1.40 | 1.50 | 1.25 | 1.77 | 1.52 |
| *Note:* | | | | | *p<0.1; **p<0.05; ***p<0.0 |

```r
# create table
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
}

stargazer(lm(formula = pq11 ~ treatment, data = covs),
          lm(formula = pq12 ~ treatment, data = covs),
          lm(formula = pq13 ~ treatment, data = covs),
          lm(formula = pq14 ~ treatment, data = covs),

          column.labels = c("most people trusted", "hard work better", "government responsible", "income
          model.numbers = FALSE,
          dep.var.labels.include = FALSE,
          header=FALSE,
          covariate.labels = c("Replication"),

          type = type, digits = 2, omit.stat = c("adj.rsq", "f"), df = FALSE
          )
```

```r
# create table
if(knitr::is_html_output()){
  type <- "html"
} else {
  type = "latex"
```

Table 9:

| | *Dependent variable:* | | | |
|---|---|---|---|---|
| | most people trusted | hard work better | government responsible | incomes equal |
| Replication | −0.05 | −1.79*** | −0.92*** | 0.57* |
| | (0.28) | (0.31) | (0.30) | (0.33) |
| Constant | 3.87*** | 5.43*** | 4.32*** | 3.83*** |
| | (0.14) | (0.15) | (0.14) | (0.16) |
| Observations | 120 | 120 | 120 | 120 |
| $R^2$ | 0.0002 | 0.22 | 0.08 | 0.02 |
| Residual Std. Error | 1.31 | 1.44 | 1.37 | 1.55 |
| *Note:* | | | | *p<0.1; **p<0.05; ***p<0.01 |

```
}

olsStock1 <- lm(formula = stock ~ gender + age +
                  # switching_row +
                  pq01 + pq02 + pq03 + pq04 +
                  pq05 + pq06 + pq07 +pq08 + pq09 + pq10 + pq11 + pq12 + pq13 + pq14,
                data = covariates[treatment == "replication"])
olsStock2  <- lm(formula = stock ~ gender + age, # + switching_row,
                data = covariates[treatment == "replication"])
olsGINI1  <- lm(formula = gini ~ gender + age +
                  # switching_row +
                  pq01 + pq02 + pq03 + pq04 +
                  pq05 + pq06 + pq07 + pq08 + pq09 + pq10 + pq11 + pq12 + pq13 + pq14,
                data = covariates[treatment == "replication"])
olsGINI2  <- lm(formula = gini ~ gender + age, # + switching_row,
                data = covariates[treatment == "replication"])

stargazer(olsStock1, olsStock2,
          olsGINI1, olsGINI2,

          se = list(coef(summary(olsStock1, cluster = c("groupID")))[, 2],
                    coef(summary(olsStock2, cluster = c("groupID")))[, 2],
                    coef(summary(olsGINI1,  cluster = c("groupID")))[, 2],
                    coef(summary(olsGINI2,  cluster = c("groupID")))[, 2]),

          column.labels   = c("Wealth", "Gini"),
          dep.var.labels.include = FALSE,
          column.separate = c(2, 2),
          model.numbers = FALSE,
          header=FALSE,
          covariate.labels = c("female", "age",
                               # "risk",
                               "quick thinker",
                               "easily offended",
                               "very satisfied",
                               "very dependent",
```

```r
                                "generally happy",
                                "work important",
                                "family important",
                                "friends important",
                                "religion important",
                                "politics important",
                                "most people trusted",
                                "hard work better",
                                "government responsible",
                                "incomes equal"),
          notes = "Robust standard errors in parentheses, clustered by group ID.",

          type = type, digits = 2, omit.stat = c("adj.rsq", "f"), df = FALSE
          )
```


Chen, Daniel L., Martin Schonger, and Chris Wickens. 2016. "oTree-an Open-Source Platform for Laboratory, Online, and Field Experiments." *Journal of Behavioral and Experimental Finance* 9: 88–97. https://doi.org/10.1016/j.jbef.2015.12.001.

Gächter, Simon, Friederike Mengel, Elias Tsakas, and Alexander Vostroknutov. 2017. "Growth and Inequality in Public Good Provision." *Journal of Public Economics* 150: 1–13. https://doi.org/10.1016/j.jpubeco.2017.03.002.

Table 10:

| | *Dependent variable:* | | | |
|---|---|---|---|---|
| | Wealth | | Gini | |
| female | $-121.63^{*}$ | 22.01 | $-0.001$ | 0.01 |
| | (69.58) | (56.82) | (0.04) | (0.02) |
| age | $-5.32$ | $-2.31$ | $-0.0004$ | $-0.001$ |
| | (3.73) | (2.39) | (0.002) | (0.001) |
| quick thinker | $-75.08$ | | 0.01 | |
| | (47.43) | | (0.03) | |
| easily offended | $-3.76$ | | 0.01 | |
| | (32.14) | | (0.02) | |
| very satisfied | $-128.98^{**}$ | | 0.004 | |
| | (63.60) | | (0.03) | |
| very dependent | $-0.75$ | | 0.003 | |
| | (26.11) | | (0.01) | |
| generally happy | 44.97 | | $-0.02$ | |
| | (48.06) | | (0.03) | |
| work important | 5.64 | | 0.002 | |
| | (19.54) | | (0.01) | |
| family important | $65.59^{**}$ | | 0.003 | |
| | (30.47) | | (0.02) | |
| friends important | $-21.97$ | | $-0.004$ | |
| | (22.59) | | (0.01) | |
| religion important | $-70.07^{***}$ | | $-0.004$ | |
| | (22.28) | | (0.01) | |
| politics important | $64.36^{**}$ | | $-0.003$ | |
| | (26.00) | | (0.01) | |
| most people trusted | 50.10 | | $-0.01$ | |
| | (33.41) | | (0.02) | |
| hard work better | 12.58 | | 0.03 | |
| | (36.98) | | (0.02) | |
| government responsible | $57.31^{*}$ | | $-0.01$ | |
| | (33.17) | | (0.02) | |
| incomes equal | $-40.07$ | | 0.01 | |
| | (34.59) | | (0.02) | |
| Constant | 673.58 | $457.66^{***}$ | 0.13 | $0.24^{***}$ |
| | (500.82) | (138.66) | (0.27) | (0.05) |
| Observations | 28 | 28 | 28 | 28 |
| $R^2$ | 0.70 | 0.05 | 0.37 | 0.08 |
| Residual Std. Error | 124.04 | 146.35 | 0.07 | 0.05 |

*Note:* $^{*}$p<0.1; $^{**}$p<0.05; $^{***}$p<0.01