Replication - Main Tables

2025-06-15

Replication of the main tables

Table 1 - Incumbent 2010

Packages to install if not done already.

```
install.packages(c("tidyverse","stargazer","knitr","broom","haven","fixest","modelsummary","gt","websho
```

```
## Installing packages into '/usr/local/lib/R/site-library'
## (as 'lib' is unspecified)
```

Required libraries.

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.2     v tibble    3.2.1
## v lubridate 1.9.4     v tidyr     1.3.1
## v purrr     1.0.4
## -- Conflicts ---------------------------------------- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become error
```

```
library(stargazer)
```

```
##
## Please cite as:
##
##  Hlavac, Marek (2022). stargazer: Well-Formatted Regression and Summary Statistics Tables.
##  R package version 5.2.3. https://CRAN.R-project.org/package=stargazer
```

```
library(knitr)
library(broom)
library(haven)
library(fixest)
library(modelsummary)
library(gt)
library(webshot2)
```

Macros, controls, and sample selection.

```
# Defining the control variables
gpcontrols <- c("GP_population", "GP_lit", "GP_sc", "GP_st", "GP_nbvillages",
                "RES00_gender", "RES00_obc", "RES00_sc", "RES00_st",
                "RES10_obc", "RES10_sc", "RES10_st", "RES05_obc", "RES05_sc", "RES05_st")
```

```r
# Defining the dependent variables
incum_dep_vars1 <- c("INC05_running", "INC05_voteshare", "INC05_won",
                     "INCSPOUSE05_running", "INCSPOUSE05_voteshare", "INCSPOUSE05_won",
                     "INCOTHER05_running", "INCOTHER05_voteshare", "INCOTHER05_won",
                     "INCorFAM05_running", "INCorFAM05_voteshare", "INCorFAM05_won")

# Loading the data
# Change the path if necessary.
data <- read_dta("~/work/Electoral data cleaned.dta")

# Filtering the data (keeping non-reserved GPs, and only 1 observation)
data_filtered <- data %>%
  filter(RES10_gender == 0 & SAMPLE_hhsurvey == 1 & GP_tag == 1 & INC05_can_run == 1) %>%
  mutate(
    FAMnotINC05_running = INCorFAM05_running - INC05_running,
    FAMnotINC05_voteshare = INCorFAM05_voteshare - INC05_voteshare,
    FAMnotINC05_won = INCorFAM05_won - INC05_won
  )
```

Model estimation.

```r
# Function for the regression formulas
create_formula <- function(dep_var, model_type) {
  base_controls <- paste(gpcontrols, collapse = " + ")

  if (model_type == "any_treatment") {
    formula_str <- paste(dep_var, "~ INT_treatment + RES05_gender + X_anytr_genderres05 +",
                         base_controls, "+ factor(district)")
  } else if (model_type == "gender_general") {
    formula_str <- paste(dep_var, "~ INT_treatment_gender + INT_treatment_general + RES05_gender +",
                         "X_generaltr_genderres05 + X_gendertr_genderres05 +",
                         base_controls, "+ factor(district)")
  }

  return(as.formula(formula_str))
}

# Function for the statistical tests
calculate_tests <- function(model, model_type) {
  if (model_type == "any_treatment") {
    # Test: RES05_gender + X_anytr_genderres05 = 0
    test1 <- car::linearHypothesis(model, "RES05_gender + X_anytr_genderres05 = 0")
    pval1 <- test1$`Pr(>F)`[2]

    # Test: INT_treatment = RES05_gender
    test2 <- car::linearHypothesis(model, "INT_treatment - RES05_gender = 0")
    pval2 <- test2$`Pr(>F)`[2]

    return(list(pval1 = round(pval1, 2), pval2 = round(pval2, 2)))

  } else if (model_type == "gender_general") {
    # Test: INT_treatment_gender = INT_treatment_general
    test1 <- car::linearHypothesis(model, "INT_treatment_gender - INT_treatment_general = 0")
    pval1 <- test1$`Pr(>F)`[2]
```

```
    # Test: INT_treatment_gender + X_gendertr_genderres05 = INT_treatment_general + X_generaltr_genderr
    test2 <- car::linearHypothesis(model,
                                   "INT_treatment_gender + X_gendertr_genderres05 - INT_treatment_genera
    pval2 <- test2$`Pr(>F)`[2]

    return(list(pval1 = round(pval1, 2), pval2 = round(pval2, 2)))
  }
}

# Estimating the models
models_list <- list()
control_means <- list()
test_results <- list()


### Models with "any treatment"
for (i in 1:length(incum_dep_vars1)) {
  dep_var <- incum_dep_vars1[i]

  # control mean
  control_mean <- data_filtered %>%
    filter(INT_treatment == 0 & RES05_gender == 0) %>%
    summarise(mean = mean(!!sym(dep_var), na.rm = TRUE)) %>%
    pull(mean) %>%
    round(2)

  control_means[[i]] <- control_mean

  # model estimate
  formula <- create_formula(dep_var, "any_treatment")
  model <- lm(formula, data = data_filtered)
  models_list[[i]] <- model

  # statistical tests
  test_results[[i]] <- calculate_tests(model, "any_treatment")
}

### Models with "gender and general treatment"
for (i in 1:length(incum_dep_vars1)) {
  dep_var <- incum_dep_vars1[i]
  j <- i + length(incum_dep_vars1)

  # control mean
  control_means[[j]] <- control_means[[i]]

  # model estimate
  formula <- create_formula(dep_var, "gender_general")
  model <- lm(formula, data = data_filtered)
  models_list[[j]] <- model

  # statistical tests
  test_results[[j]] <- calculate_tests(model, "gender_general")
}
```

Table.

```r
# variables to display
outregvar2 <- c("INT_treatment", "INT_treatment_gender", "INT_treatment_general")

# colnames
col_names <- c(
  paste("Any Treat", 1:12),
  paste("Gender/General", 1:12)
)

# additional lines for means and test results!
additional_lines <- list(
  c("District FE", rep("Yes", length(models_list))),
  c("GP Controls", rep("Yes", length(models_list))),
  c("Mean in Control not WR in 2005", unlist(control_means)),
  c("Test Treat Effect in WR=0", sapply(test_results, function(x) x$pval1))
)

# generate table
stargazer(models_list,
          type = "text",
          column.labels = col_names,
          keep = outregvar2,
          add.lines = additional_lines,
          digits = 2,
          title = "Table 1: Effects on Incumbent and Family Candidate Entry (2005)",
          out = "Table1_Incumbent_2010.txt")
```

```
##
## Table 1: Effects on Incumbent and Family Candidate Entry (2005)
## ==========================================================================================
##
##                                 ---------------------------------------------------------
##                                     INC05_running        INC05_voteshare          INC05_won       INC
##                                      Any Treat 1           Any Treat 2           Any Treat 3
##                                          (1)                   (2)                   (3)
## -----------------------------------------------------------------------------------------
## INT_treatment                         -0.26***              -6.27***               -0.01
##                                        (0.09)                (2.35)                (0.05)
##
## INT_treatment_gender
##
##
## INT_treatment_general
##
##
## -----------------------------------------------------------------------------------------
## District FE                             Yes                   Yes                   Yes
## GP Controls                             Yes                   Yes                   Yes
## Mean in Control not WR in 2005          0.46                  10.1                  0.06
## Test Treat Effect in WR=0               0.86                  0.71                  0.83
## Observations                            152                   149                   152
## R2                                      0.32                  0.39                  0.11
## Adjusted R2                             0.21                  0.29                  -0.03
```

```
## Residual Std. Error               0.40 (df = 131)        9.94 (df = 128)       0.21 (df = 131)      0
## F Statistic                    3.02*** (df = 20; 131) 4.01*** (df = 20; 128) 0.77 (df = 20; 131) 1.80
## ================================================================================================
## Note:
```

Table 2 - Performance 2010

Table 3 - Challengers 2010

Table 4- Candidates 2015

Table 5 - Voters perception