Regression Analysis of 2024 Russian presidential election abroad

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```r
# Manage packages

  ## Package list
  packages <- c("readxl", "tidyverse", "lubridate", "lme4", "summarytools",
                "nnet", "reshape2", "stargazer")

  ## Install packages not yet installed
  installed_packages <- packages %in% rownames(installed.packages())
  if (any(installed_packages == FALSE)) {
    install.packages(packages[!installed_packages])
  }

  ## Load packages
  invisible(lapply(packages, library, character.only = TRUE))


  # Set options
options(scipen = 999)

# Define global functions

  ## Fitting stargazer onto the page
  resizebox.stargazer = function(..., tab.width = "!", tab.height = "!")
      {
    require(stringr)
    res = capture.output(stargazer::stargazer(...))
    tab.width = tab.width
    tab.height = tab.height
    res = prepend(res, "}", before = length(res))

    res = c(res[1:str_which(res, "^\\\\begin\\{tabular\\}.*")-1],
        paste0("\\resizebox*{",tab.width,"}{",tab.height,"}{%"),
        res[str_which(res, "^\\\\begin\\{tabular\\}.*"):length(res)]
        )
    cat(res, sep = "\n")
  }


# Load translation and data prep for raw data
library(here)
source(here("scripts", "raw_data_prep.R"))
```

```
# Data

  ## exit poll 18-03-24 11:21 CET
  # ep <- read_excel("data/exitpoll_18-03-24_11-21CET.xlsx")
  ep <- read_excel(here("data", "exitpoll_18-03-24_20-29CET.xlsx"), sheet = 2)

  ## exit poll raw data
  #ep_raw <- read_excel(here("data", "exitpoll_rawdata.xlsx"),
                      #  sheet = 4, guess_max = 69262)

  ## yandex search data
  yandex_weekly <- read_csv(here("data", "df_countries_weekly.csv"))

  ## old
  bilat_migration <- read_csv(here("data", "bilat_mig_sex.csv"))

  ## official election results
  # off_res <- read_tsv(here("results-uik-20240318T1503UTC.tsv")


ep_raw_regready <- ep_raw_clean |>
  filter(vote %in% c("Putin", "Declined to answer", "Davankov", "Spoiled ballot"),
         sex != "Declined to answer",
         age_bin != "Declined to answer",
         out_of_Russia_time != "< 2 years", out_of_Russia_time != "6 - 10 years",
         time_to_vs != "> 2 hours",
         countryname_en != "Australia", countryname_en != "New Zealand") |>
  mutate(vote = relevel(as.factor(vote), ref = "Putin"),
         sex = relevel(as.factor(sex), ref = "Male"),
         age_bin = relevel(as.factor(age_bin), ref = "25-44"),
         out_of_Russia_time = relevel(as.factor(out_of_Russia_time), ref = "6 months - 2 years"),
         time_to_vs = relevel(as.factor(time_to_vs), ref = "<30 minutes"))


m1 <- multinom(vote ~ time_to_vs + out_of_Russia_time + result_trust + age_bin + sex,
         data = ep_raw_regready)
```

weights: 96 (69 variable)

initial value 83088.938828 iter 10 value 40508.710147 iter 20 value 39907.328443 iter 30 value 38822.299875 iter 40 value 38096.762411 iter 50 value 37773.329080 iter 60 value 37671.760298 iter 70 value 37592.940540 iter 80 value 37557.640189 final value 37557.234838 converged

```
m2 <- multinom(vote ~ time_to_vs + out_of_Russia_time + result_trust + age_bin + sex + as.factor(city_en),
         data = ep_raw_regready)
```

weights: 344 (255 variable)

initial value 83088.938828 iter 10 value 39319.180255 iter 20 value 38595.984243 iter 30 value 37909.438753 iter 40 value 37242.575324 iter 50 value 36866.912888 iter 60 value 36647.178197

iter 70 value 36588.880500 iter 80 value 36569.801912 iter 90 value 36553.591433 iter 100 value 36539.937837 final value 36539.937837 stopped after 100 iterations

```
resizebox.stargazer(m1, m2, tab.height = "\\textheight", tab.width= "\\textwidth", omit = "factor")
```

% Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.com % Date and time: Wed, Mar 20, 2024 - 2:02:31 PM

Table 1

	Dependent variable:					
	Davankov	Declined to answer	Spoiled ballot	Davankov	Declined to answer	Spoiled ballot
	(1)	(2)	(3)	(4)	(5)	(6)
time_to_vs>4 hours (staying for the night)	0.816***	0.087	0.779***	0.586***	−0.058	0.559***
	(0.157)	(0.149)	(0.160)	(0.170)	(0.159)	(0.173)
time_to_vs1 - 2 hours	0.454***	−0.104	0.413***	0.110	−0.220**	0.021
	(0.088)	(0.078)	(0.092)	(0.098)	(0.086)	(0.102)
time_to_vs2 - 3 hours	0.465***	−0.134	0.487***	0.130	−0.381***	0.088
	(0.134)	(0.124)	(0.139)	(0.146)	(0.134)	(0.151)
time_to_vs3 - 4 hours	0.376**	−0.161	0.456***	0.068	−0.467***	0.099
	(0.169)	(0.157)	(0.174)	(0.182)	(0.166)	(0.187)
time_to_vs30 minutes - 1 hour	0.361***	0.059	0.388***	0.079	−0.055	0.055
	(0.069)	(0.060)	(0.072)	(0.076)	(0.066)	(0.079)
time_to_vsDeclined to answer	−0.848***	0.878***	−0.546***	−1.179***	0.667***	−0.957***
	(0.169)	(0.134)	(0.188)	(0.181)	(0.145)	(0.200)
out_of_Russia_time<6 months	−0.853***	−0.336**	−1.012***	−0.843***	−0.334**	−1.018***
	(0.144)	(0.138)	(0.154)	(0.152)	(0.144)	(0.161)
out_of_Russia_time>10 years	−1.918***	−0.646***	−1.185***	−2.211***	−0.963***	−1.686***
	(0.087)	(0.083)	(0.090)	(0.098)	(0.091)	(0.101)
out_of_Russia_time>5 years	−1.270***	−0.710***	−0.742***	−1.463***	−0.898***	−1.146***
	(0.111)	(0.112)	(0.114)	(0.120)	(0.119)	(0.123)
out_of_Russia_time2 - 5 years	−0.830***	−0.523***	−0.600***	−1.020***	−0.609***	−0.924***
	(0.101)	(0.105)	(0.104)	(0.109)	(0.111)	(0.112)
out_of_Russia_timeDeclined to answer	−2.072***	0.667***	−1.801***	−2.224***	0.451***	−2.067***
	(0.158)	(0.128)	(0.178)	(0.166)	(0.136)	(0.187)
out_of_Russia_timeTourist (lives in Russia)	−1.592***	−0.891***	−1.681***	−1.459***	−0.757***	−1.551***
	(0.131)	(0.118)	(0.146)	(0.140)	(0.124)	(0.154)
result_trustDefinitely no	3.725***	1.006***	3.946***	3.793***	0.894***	3.983***
	(0.171)	(0.156)	(0.186)	(0.188)	(0.171)	(0.202)
result_trustDefinitely yes	−4.500***	−2.824***	−4.947***	−4.644***	−3.141***	−4.891***
	(0.156)	(0.115)	(0.201)	(0.171)	(0.127)	(0.209)
result_trustDon't know	0.496***	−0.390***	−0.599***	0.375**	−0.768***	−0.730***
	(0.146)	(0.117)	(0.179)	(0.159)	(0.130)	(0.191)
result_trustProbably no	2.682***	0.481**	1.825***	2.619***	0.274	1.734***
	(0.201)	(0.195)	(0.218)	(0.214)	(0.206)	(0.230)
result_trustProbably yes	−2.177***	−2.312***	−3.226***	−2.223***	−2.599***	−3.236***
	(0.153)	(0.132)	(0.208)	(0.166)	(0.142)	(0.217)
age_bin18-24	0.034	−0.004	0.027	−0.020	−0.066	−0.078
	(0.105)	(0.104)	(0.108)	(0.111)	(0.109)	(0.115)
age_bin45-64	−1.357***	−0.204***	−0.536***	−1.460***	−0.328***	−0.634***
	(0.070)	(0.055)	(0.073)	(0.074)	(0.058)	(0.076)
age_bin65+	−1.964***	−0.168**	−0.956***	−2.203***	−0.411***	−1.192***
	(0.120)	(0.068)	(0.126)	(0.129)	(0.074)	(0.133)
sexFemale	−0.473***	−0.047	−0.263***	−0.427***	0.094*	−0.239***
	(0.056)	(0.047)	(0.058)	(0.059)	(0.050)	(0.061)
sexOther	0.546**	−1.126***	1.213***	−0.317	−0.473*	0.303
	(0.253)	(0.249)	(0.258)	(0.285)	(0.257)	(0.290)
Constant	2.940***	1.654***	1.441***	3.359***	1.977***	1.551***
	(0.158)	(0.137)	(0.176)	(0.283)	(0.254)	(0.301)
Akaike Inf. Crit.	75,252.470	75,252.470	75,252.470	73,589.880	73,589.880	73,589.880

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