Thesis

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0.1 Quarto

Quarto enables you to weave together content and executable code into a finished document. To learn more about Quarto see https://quarto.org.

```
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   3.5.1     v tibble    3.2.1
v lubridate 1.9.3     v tidyr     1.3.1
v purrr     1.0.2
-- 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 becor
```

```
library(janitor)
```

```
Attaching package: 'janitor'

The following objects are masked from 'package:stats':

    chisq.test, fisher.test
```

```r
library(tinytex)
library(tidymodels)
```

```
-- Attaching packages --------------------------------------- tidymodels 1.2.0 --
v broom        1.0.6     v rsample      1.2.1
v dials        1.3.0     v tune         1.2.1
v infer        1.0.7     v workflows    1.1.4
v modeldata    1.4.0     v workflowsets 1.1.0
v parsnip      1.2.1     v yardstick    1.3.1
v recipes      1.1.0
-- Conflicts ------------------------------------------ tidymodels_conflicts() --
x scales::discard() masks purrr::discard()
x dplyr::filter()   masks stats::filter()
x recipes::fixed()  masks stringr::fixed()
x dplyr::lag()      masks stats::lag()
x yardstick::spec() masks readr::spec()
x recipes::step()   masks stats::step()
* Search for functions across packages at https://www.tidymodels.org/find/
```

```r
library(readxl)
```

```r
gen_con <- read_csv("data/gen_con_status.csv")
```

```
Rows: 154 Columns: 13
-- Column specification --------------------------------------------------------
Delimiter: ","
chr (11): Participant, Signature_Date, Ratification_Type, Ratification_Year,...
dbl  (2): Signatory_Status, Ratification_Status

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```r
tmk <- read_csv("data/edited_tmk_annual_release_1.2.csv")
```

```
Rows: 476 Columns: 8
-- Column specification --------------------------------------------------------
Delimiter: ","
chr (1): primary.location
dbl (7): year, pl.ccode, tmk.onset, genpol.onset, genpol.ongoing.sum, tmk.on...
```

```
i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
tmk_2 <- read_excel("data/tmk_events_release_1.2.xls")
```

```
gen_joined <- gen_con |>
  left_join(tmk, by = join_by(Participant == primary.location))
```

```
gen_joined <- gen_joined |>
  clean_names()
gen_joined <- gen_joined |>
  mutate(
    state_system_membership_year = as.integer(
      state_system_membership_year),
    signatory_status = as.factor(signatory_status),
    signature_date = as.integer(signature_date),
    ratification_status = as.factor(ratification_status

                                    ))
```

```
Warning: There were 2 warnings in `mutate()`.
The first warning was:
i In argument: `state_system_membership_year =
  as.integer(state_system_membership_year)`.
Caused by warning:
! NAs introduced by coercion
i Run `dplyr::last_dplyr_warnings()` to see the 1 remaining warning.
```

```
gen_joined |>
  mutate(in_effect_ix_reservation = as.factor(in_effect_ix_reservation),
         historical_reservation_made_to_article_ix_no_longer_in_effect = as.factor(historica
                                                ))
```

```
# A tibble: 521 x 20
   participant signatory_status signature_date ratification_status
   <chr>       <fct>                    <int> <fct>
 1 Afghanistan 0                           NA 1
 2 Afghanistan 0                           NA 1
 3 Afghanistan 0                           NA 1
 4 Afghanistan 0                           NA 1
```

```
 5 Afghanistan 0                                NA 1
 6 Afghanistan 0                                NA 1
 7 Afghanistan 0                                NA 1
 8 Afghanistan 0                                NA 1
 9 Afghanistan 0                                NA 1
10 Afghanistan 0                                NA 1
# i 511 more rows
# i 16 more variables: ratification_type <chr>, ratification_year <chr>,
#   in_effect_ix_reservation <fct>,
#   historical_reservation_made_to_article_ix_no_longer_in_effect <fct>,
#   reservation_withdrawn_year <chr>,
#   reservation_made_at_same_time_as_ratification_and_or_confirmed_upon_succession <chr>,
#   successor_state_entry <chr>, state_system_membership_year <int>, ...
```

```
gen_joined <- gen_joined |>
  mutate(ever_reserved = case_when(
    in_effect_ix_reservation == 1 | historical_reservation_made_to_article_ix_no_longer_in_ef
    in_effect_ix_reservation == 0 & historical_reservation_made_to_article_ix_no_longer_in_ef
  ))

gen_joined |>
  filter(genpol_onset == 1,
         ratification_year >= year) |>
  select(year, participant, ratification_year, state_system_membership_year)
```

```
# A tibble: 29 x 4
    year participant ratification_year state_system_membership_year
   <dbl> <chr>       <chr>                                    <int>
 1  1980 Bangladesh  1998                                      1971
 2  1972 Burundi     1997                                      1962
 3  1993 Burundi     1997                                      1962
 4  1995 Burundi     1997                                      1962
 5  1947 China       1983                                      1860
 6  1950 China       1983                                      1860
 7  1958 China       1983                                      1860
 8  1961 China       1983                                      1860
 9  1966 China       1983                                      1860
10  1960 DR Congo    1962                                      1960
# i 19 more rows
```

```r
gen_joined <- gen_joined |>
  mutate(ever_reserved = case_when(
    in_effect_ix_reservation == 1 | historical_reservation_made_to_article_ix_no_longer_in_e
    in_effect_ix_reservation == 0 & historical_reservation_made_to_article_ix_no_longer_in_e
  ))
```

```r
prior_gen_pol_events <- gen_joined |>
 filter(genpol_onset == 1,
        ratification_year >= year) |>
  group_by(participant) |>
  count()

gen_pol_prior <- c("Bangladesh", "Burundi", "China", "DR Congo", "India", "Nigeria", "North

gen_joined_2 <- gen_joined |>
  mutate(gen_bf_rat = if_else(participant %in% gen_pol_prior, 1, 0))

gen_joined_2 <- gen_joined_2 |>
  distinct(participant, .keep_all = TRUE)
gen_joined_2 <- gen_joined_2 |>
  mutate(ever_reserved = as.factor(ever_reserved),
         gen_bf_rat = as.factor(gen_bf_rat))
```

```r
gen_fit <- logistic_reg() |>
  fit(ever_reserved ~ gen_bf_rat, data = gen_joined_2)
tidy(gen_fit) |>
  mutate(est_exp = exp(estimate))
```

```
# A tibble: 2 x 6
  term        estimate std.error statistic  p.value est_exp
  <chr>          <dbl>     <dbl>     <dbl>    <dbl>   <dbl>
1 (Intercept)    -1.61     0.228     -7.05 1.84e-12   0.200
2 gen_bf_rat1     1.20     0.574      2.10 3.61e- 2   3.33
```

```r
write_csv(gen_joined, file = "gen-joined.csv")
```