

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
vforcats    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 -----
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 non-conflicting
```

```
library(janitor)
```

Attaching package: 'janitor'

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

chisq.test, fisher.test

```
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()

* Dig deeper into tidy modeling with R at https://www.tmwr.org
```

```
library(readxl)
```

```
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.
```

```
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")
```

```
tmk_2_edit <- tmk_2 |>  
  select(  
    country, duration, tmk.ordinal, genpol.ongoing, genpol.onset, group1.tmk.rel, group1.tmk  
  ) |>  
  filter(group1.tmk.rel == 1 | group1.tmk.eth == 1) |>  
  clean_names() |> mutate(primary_location = case_when(  
    primary_location == "Soviet Union" ~ "Russia",  
    primary_location == "DRC Congo (Zaire)" ~ "DR Congo",  
    primary_location == "Myanmar (Burma)" ~ "Myanmar",  
    primary_location == "Zanzibar" ~ "Tanzania",  
    primary_location == "Bosnia-Herzegovina" ~ "Bosnia-Herzogovina",  
    primary_location == "DR Congo (Zaire)" ~ "DR Congo",  
    primary_location == "Russia (Soviet Union)" ~ "Russia",  
    primary_location == "Serbia (Yugoslavia)" ~ "Serbia",  
    primary_location == "Sudan, Chad" ~ "Sudan",  
    primary_location == "India/Pakistan" ~ "India",  
    primary_location == "Cambodia (Kampuchea)" ~ "Cambodia",  
    TRUE ~ primary_location  
  ))
```

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

```
gen_2 <- gen_con |>  
  left_join(tmk_2_edit, 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(historical_reservation_made_to_article_ix_no_longer_in_effect))
```

```
# 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_effect == 1 ~ 1,  
    in_effect_ix_reservation == 0 & historical_reservation_made_to_article_ix_no_longer_in_effect == 0 ~ 0))
```

```
 ))
```

```
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
```

```
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 I")
```

```
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))
```

```
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

gen_joined |>
  filter(in_effect_ix_reservation == 1 | historical_reservation_made_to_article_ix_no_longer_in_effect)

# A tibble: 104 x 21
  participant signatory_status signature_date ratification_status
  <chr>       <fct>           <int>          <fct>
1 Albania      0                  NA 1
2 Algeria      0                  NA 1
3 Argentina    0                  NA 1
4 Argentina    0                  NA 1
5 Argentina    0                  NA 1
6 Argentina    0                  NA 1
7 Argentina    0                  NA 1
8 Argentina    0                  NA 1
9 Argentina    0                  NA 1
10 Argentina   0                  NA 1
# i 94 more rows
# i 17 more variables: ratification_type <chr>, ratification_year <chr>,
#   in_effect_ix_reservation <chr>,
#   historical_reservation_made_to_article_ix_no_longer_in_effect <chr>,
#   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>, ...

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

```