

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 become
```

```
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.tmw.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.eth
  ) |>
  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-Herzegovina",
    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 ~ TRUE,  
    in_effect_ix_reservation == 0 & historical_reservation_made_to_article_ix_no_longer_in_effect == 0 ~ FALSE,  
    TRUE ~ NA))
```

```

))

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")
```