

02 Variable Exploration

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Load data

```
# Load PSP data, created in tjbrailey_wrangle_data.Rmd
psp <- rio::import(paste0(here::here(), "/data/tjbrailey_psp_clean.csv"))
psp <- psp[,-1]
variable.names(psp)
```

```
## [1] "country"          "year"
## [3] "cowc"             "cown"
## [5] "idc_mveto"        "idc_gcman"
## [7] "idc_gcimp"        "idc_auton"
## [9] "idc_jrevman"      "idc_relconstd"
## [11] "idc_relconstp"    "idc_milleg"
## [13] "idc_partynoethnic" "idc_jtenure"
## [15] "idc_jconst"       "idc_gcseats1"
## [17] "idc_gcseats2"     "idc_gcseats3"
## [19] "idc_unity"        "idc_resman"
## [21] "idc_resseats"     "idc_resseats2"
## [23] "idc_resseatsimp"  "idc_miman"
## [25] "idc_subtax"       "idc_subed"
## [27] "idc_subpolice"    "idc_fedunits"
## [29] "idc_state"        "idc_muni"
## [31] "qog_fe_etfra"     "qog_iaep_ebbp"
## [33] "qog_gle_gdp"      "qog_bti_ci"
## [35] "qog_cspf_sfi"     "qog_gtm_unit"
## [37] "qog_ccp_hr"       "qog_ffp_hr"
## [39] "qog_iiag_phr"     "qog_dpi_housesys"
## [41] "qog_jw_bicameral" "qog_bti_ig"
## [43] "qog_vdem_partipdem" "qog_iaep_nr"
## [45] "qog_bti_sop"      "bti_ffe"
```

```
## [47] "qog_gol_est"          "qog_gol_mt"
## [49] "qog_iaep_es"          "qog_no_ef"
## [51] "qog_no_ce"            "qog_iaep_eccdt"
## [53] "qog_iaep_ecdl"        "qog_iaep_eml"
## [55] "qog_iaep_epmf"        "qog_iaep_evp"
## [57] "qog_iaep_lcre"        "qog_iaep_lego"
## [59] "qog_iaep_lrit"        "qog_wbgi_pve"
## [61] "qog_hum_satdem"        "qog_hum_supdem"
## [63] "qog_hum_trust"        "qog_wdi_gini"
## [65] "qog_gle_pop"          "qog_al_ethnic"
## [67] "dpi_auton"            "qog_pt_federal"
## [69] "dpi_system"           "dpi_author"
## [71] "dpi_pr"               "dpi_sensys"
## [73] "dpi_eiec"             "vdem_e_miinterc"
## [75] "vdem_e_civil_war"     "v2elfrfair"
## [77] "ucdp_side_a"          "ucdp_side_b"
## [79] "ucdp_territory_name"  "ucdp_intensity_level"
## [81] "ucdp_cumulative_intensity" "ucdp_type_of_conflict"
## [83] "epr_reg_aut_dum"      "epr_reg_aut_cont"
## [85] "prio_onset"           "polity4_polity_score"
## [87] "polity4_fragment"     "rai_n_RAI"
## [89] "tb_other_provis"      "tb_aut"
## [91] "tb_conflict_length"
```

Exploration of core consociational provisions

```
# Exploring consociationalism
```

```
# States that employ mutual veto provisions
```

```
psp %>%
  dplyr::filter(idc_mveto == 1) %>%
  dplyr::distinct(country)
```

```
##           country
## 1           Belgium
## 2      Bosnia-Herz
## 3           Canada
## 4           Cyprus
## 5         Macedonia
## 6         Montenegro
## 7           Poland
## 8           Sudan
## 9         Yugoslavia
## 10 Yugoslavia (FRY)
```

```
# States that employ grand coalition provisions
```

```
psp %>%
  dplyr::filter(idc_gcman == 1 & idc_gcimp == 1) %>%
  dplyr::distinct(country)
```

```
##           country
## 1      Cote d'Ivoire
## 2             Fiji
## 3             Rwanda
```

```
## 4          South Africa
## 5          Yemen
## 6 Zaire (Democ Republic Congo)
# States that employ proportionality
psp %>%
  dplyr::filter(dpi_pr == 1) %>%
  dplyr::distinct(country)
```

```
##          country
## 1      Albania
## 2      Algeria
## 3      Angola
## 4      Argentina
## 5      Armenia
## 6      Australia
## 7      Austria
## 8      Belgium
## 9      Benin
## 10     Bolivia
## 11     Bosnia-Herz
## 12     Brazil
## 13     Bulgaria
## 14     Burkina Faso
## 15     Burundi
## 16     C. Verde Is.
## 17     Cambodia
## 18     Cameroon
## 19     Chad
## 20     Colombia
## 21     Costa Rica
## 22     Croatia
## 23     Cuba
## 24     Cyprus
## 25     Czech Rep.
## 26     Denmark
## 27     Djibouti
## 28     Dominican Republic
## 29     Ecuador
## 30     El Salvador
## 31     Eq. Guinea
## 32     Estonia
## 33     Finland
## 34     FRG/Germany
## 35     Georgia
## 36     Greece
## 37     Guatemala
## 38     Guinea
## 39     Guinea-Bissau
## 40     Guyana
## 41     Honduras
## 42     Hungary
## 43     Iceland
## 44     India
## 45     Indonesia
```

## 46	Iraq
## 47	Ireland
## 48	Israel
## 49	Italy
## 50	Japan
## 51	Kazakhstan
## 52	Kyrgyzstan
## 53	Latvia
## 54	Lesotho
## 55	Liberia
## 56	Lithuania
## 57	Luxembourg
## 58	Macedonia
## 59	Madagascar
## 60	Malta
## 61	Mauritania
## 62	Mexico
## 63	Moldova
## 64	Mongolia
## 65	Morocco
## 66	Mozambique
## 67	Namibia
## 68	Nepal
## 69	Netherlands
## 70	New Zealand
## 71	Nicaragua
## 72	Niger
## 73	Nigeria
## 74	Norway
## 75	Oman
## 76	P. N. Guinea
## 77	Panama
## 78	Paraguay
## 79	Peru
## 80	Philippines
## 81	Poland
## 82	Portugal
## 83	Romania
## 84	Russia
## 85	Rwanda
## 86	Senegal
## 87	Sierra Leone
## 88	Slovakia
## 89	Slovenia
## 90	South Africa
## 91	South Korea
## 92	Soviet Union
## 93	Spain
## 94	Sri Lanka
## 95	Suriname
## 96	Sweden
## 97	Switzerland
## 98	Taiwan
## 99	Timor-Leste

```
## 100                Togo
## 101                Tunisia
## 102                Turkey
## 103                Ukraine
## 104                Uruguay
## 105                Venezuela
## 106                Yugoslavia (FRY)
## 107 Zaire (Democ Republic Congo)
```

```
# States that employ segmental autonomy
psp %>%
  dplyr::filter(idc_auton == 1) %>%
  dplyr::distinct(country)
```

```
##          country
## 1    Azerbaijan
## 2      Bolivia
## 3        China
## 4    Comoro Is.
## 5      Denmark
## 6      Ecuador
## 7      Ethiopia
## 8         Fiji
## 9      Finland
## 10     France
## 11     Georgia
## 12     Greece
## 13    Indonesia
## 14        Iraq
## 15        Italy
## 16    Mauritius
## 17     Moldova
## 18    Montenegro
## 19    Nicaragua
## 20    P. N. Guinea
## 21     Pakistan
## 22     Panama
## 23    Philippines
## 24     Portugal
## 25        Russia
## 26     Serbia
## 27    South Africa
## 28    South Korea
## 29    Soviet Union
## 30         Spain
## 31         Sudan
## 32    Tajikistan
## 33     Tanzania
## 34          UK
## 35     Ukraine
## 36         USA
## 37    Uzbekistan
## 38     Venezuela
## 39     Vietnam
## 40    Yugoslavia
```

```
## 41 Yugoslavia (FRY)
```

Exploration of segmental autonomy

```
# idc_auton missingness/summary
auton_sum <- psp %>%
  dplyr::select(country, year, idc_auton) %>%
  dplyr::group_by(idc_auton) %>%
  dplyr::summarize(summary = n())

## Warning: Calling `n()` without importing or prefixing it is deprecated, use `dplyr::n()`.
## This warning is displayed once per session.

# States that have employed segmental autonomy provisions
seg_states <- psp %>%
  dplyr::filter(idc_auton == 1) %>%
  dplyr::distinct(country) %>%
  dplyr::pull(country)

seg_states_dat <- psp %>%
  dplyr::filter(country %in% c(seg_states))

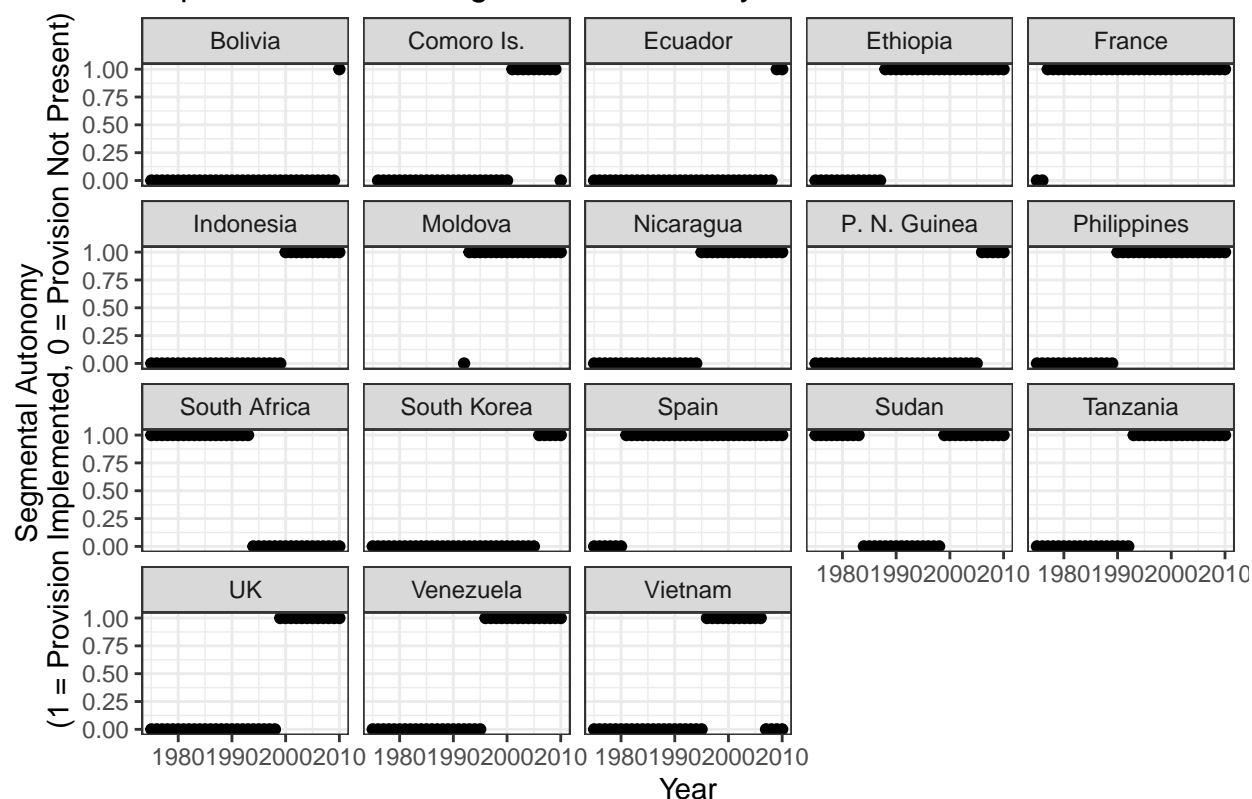
# States that have, between 1975 and 2010, employed segmental autonomy provisions
seg_imp <- seg_states_dat %>%
  dplyr::filter(idc_auton == 0) %>%
  dplyr::distinct(country) %>%
  dplyr::pull()

seg_imp_dat <- psp %>%
  dplyr::filter(country %in% c(seg_imp))
```

Visualizing Segmental Autonomy Implementation

```
gp1 <- ggplot(seg_imp_dat, aes(x = year, y = idc_auton)) +
  geom_point() +
  facet_wrap(~ country) +
  labs(x = "Year",
       y = "Segmental Autonomy
           (1 = Provision Implemented, 0 = Provision Not Present)",
       title = "Implementation of Segmental Autonomy Provisions") +
  theme_bw()
gp1
```

Implementation of Segmental Autonomy Provisions



```
ggsave(gp1, filename = paste0(here::here(), "/vis/seg_auton_implement.png"), units = "in",
width = 11, height = 7)
```

```
# Subdivisions of segmental autonomy
subed <- psp %>%
  dplyr::filter(idc_subed == 1) %>%
  dplyr::distinct(country, year)
unique(subed$country)
```

```
## [1] "Afghanistan"
## [3] "Australia"
## [5] "Belgium"
## [7] "Bolivia"
## [9] "Botswana"
## [11] "Bulgaria"
## [13] "Cambodia"
## [15] "Chile"
## [17] "Colombia"
## [19] "Cuba"
## [21] "Finland"
## [23] "FRG/Germany"
## [25] "German Democratic Republic"
## [27] "India"
## [29] "Ireland"
## [31] "Japan"
## [33] "Latvia"
## [35] "Malaysia"
"Argentina"
"Austria"
"Bhutan"
"Bosnia-Herz"
"Brazil"
"Burundi"
"Canada"
"China"
"Croatia"
"Denmark"
"France"
"Georgia"
"Haiti"
"Iraq"
"Italy"
"Kazakhstan"
"Macedonia"
"Mexico"
```

```
## [37] "Mongolia"           "Montenegro"
## [39] "P. N. Guinea"       "Pakistan"
## [41] "Paraguay"           "Peru"
## [43] "Philippines"         "Poland"
## [45] "Russia"              "Slovakia"
## [47] "South Africa"        "South Korea"
## [49] "Spain"               "Sri Lanka"
## [51] "Sudan"               "Sweden"
## [53] "Switzerland"         "Taiwan"
## [55] "Thailand"             "UAE"
## [57] "Uganda"              "UK"
## [59] "Ukraine"             "USA"
## [61] "Venezuela"           "Vietnam"
## [63] "W. Samoa"            "Yugoslavia (FRY)"
## [65] "Zaire (Democ Republic Congo)"
```

```
subtax <- psp %>%
  dplyr::filter(idc_subtax == 1) %>%
  dplyr::distinct(country, year)

subpolice <- psp %>%
  dplyr::filter(idc_subpolice == 1) %>%
  dplyr::distinct(country, year)

fedunits <- psp %>%
  dplyr::filter(idc_fedunits == 1) %>%
  dplyr::distinct(country, year)

author <- psp %>%
  dplyr::filter(dpi_author == 1) %>%
  dplyr::distinct(country, year)
unique(author$country)
```

```
## [1] "Argentina"      "Australia"      "Austria"        "Belgium"
## [5] "Benin"          "Bosnia-Herz"    "Botswana"        "Brazil"
## [9] "Canada"         "Colombia"       "Comoro Is."      "Czech Rep."
## [13] "Ethiopia"       "Fiji"           "Finland"         "France"
## [17] "FRG/Germany"    "India"          "Italy"           "Malaysia"
## [21] "Mexico"         "Nepal"          "Philippines"     "Senegal"
## [25] "Spain"          "Sudan"          "Sweden"          "Switzerland"
## [29] "Trinidad-Tobago" "UAE"            "USA"             "Venezuela"
## [33] "Yugoslavia"     "Yugoslavia (FRY)"
```

Subset code

```
# By states that exhibit change in the auton variable
aut_t <- psp %>%
  dplyr::filter(idc_auton == 1) %>%
  dplyr::distinct(country) %>%
  dplyr::pull()

aut_f <- psp %>%
  dplyr::filter(idc_auton == 0) %>%
  dplyr::distinct(country) %>%
```



```

dplyr::pull()

aut_t <- dplyr::as_tibble(aut_t)

## Warning: Calling `as_tibble()` on a vector is discouraged, because the behavior is likely to change
## This warning is displayed once per session.

aut_f <- dplyr::as_tibble(aut_f)

country_aut <- aut_t %>%
  dplyr::filter(value %in% unique(aut_f$value))

psp_aut_variation <- psp %>%
  dplyr::filter(country %in% c(country_aut$value))

# By states that have never had autonomy
psp_no_aut <- psp %>%
  dplyr::group_by(country) %>%
  dplyr::mutate(no_aut = sum(idc_auton, na.rm = TRUE)) %>%
  dplyr::filter(sum(no_aut) != 0)

# By ethnic fractionalization index
mean(psp$qog_al_ethnic, na.rm = TRUE)

## [1] 0.4509707

median(psp$qog_al_ethnic, na.rm = TRUE)

## [1] 0.4840572

quantile(psp$qog_al_ethnic, .67, na.rm = TRUE)

##      67%
## 0.6252

# By auton and ethnic fractionalization
psp_no_aut_frac <- psp_no_aut %>%
  dplyr::filter(qog_al_ethnic > median(psp$qog_al_ethnic, na.rm = TRUE))

```