Package: politicsR (via r-universe)

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Type Package

Title Calculating Political System Metrics

Version 0.1.0

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Description A toolbox to facilitate the calculation of political system indicators for researchers. This package offers a variety of basic indicators related to electoral systems, party systems, elections, and parliamentary studies, as well as others. Main references are: Loosemore and Hanby (1971) <doi:10.1017/S000712340000925X>; Gallagher (1991) <doi:10.1016/0261-3794(91)90004-C>; Laakso and Taagepera (1979) <doi:10.1177/001041407901200101>; Rae (1968) <doi:10.1177/001041406800100305>; Hirschman (1945) <ISBN:0-520-04082-1>; Kesselman (1966) <doi:10.2307/1953769>; Jones and Mainwaring (2003) <doi:10.1177/13540688030092002>; Rice (1925) <doi:10.2307/2142407>; Pedersen (1979) <doi:10.1111/j.1475-6765.1979.tb01267.x>; SANTOS (2002) <ISBN:85-225-0395-8>.

License GPL (>= 3)

Encoding UTF-8

LazyData true

RoxygenNote 7.2.3

Imports ineq,

BugReports https://github.com/silvadenisson/politicsR/issues

Depends R (>= 3.3.0)

Repository https://silvadenisson.r-universe.dev

RemoteUrl https://github.com/silvadenisson/politicsr

RemoteRef HEAD

RemoteSha 0e957fcccd8eaa3f7438844c2afcdb47feeb371e

Contents

`brazil` *Brazilian Lower Chamber Electoral Results*

Description

A dataset containing data on electoral results for the Brazilian lower chamber by party and by state from 1990 to 2018. The variables include country name, year and month of election, electoral district name and code, party name and code, and party vote share.

Usage

```
brazil
```

Format

'brazil' A data frame with rows and columns:

ctr_n Country name

yr Year of election

mn Month of election

cst_n Name of electoral district

cst Code of electoral district

pty_n Party name

pty Party code

pvs1 Party vote share

Details

This dataset is part of the Constituency-Level Elections Archive (CLEA) project, a repository that provides detailed election results at the constituency level for lower chamber and upper chamber legislative elections from around the world.

Value

This dataset is part of the Constituency-Level Elections Archive (CLEA). Brazilian Lower Chamber Electoral Results

Source

<https://electiondataarchive.org/>

References

Kollman, K., Hicken, A., Caramani, D., Backer, D., & Lublin, D. (2019). Constituency-level elections archive [data file and codebook]. Ann Arbor, MI: Center for Political Studies, University of Michigan [producer and distributor]. Retrieved from http://www.electiondataarchive.org.

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denmark *Danish Lower Chamber Electoral Results*

Description

A dataset containing data on electoral results for the Danish lower chamber by party and by electoral district from 1906 to 2019 (except the 1915 election). The variables include country name, year and month of election, electoral district name and code, party name and code, and party vote share.

Usage

```
denmark
```

Format

'denmark' A data frame with rows and columns:

ctr_n Country name

yr Year of election

mn Month of election

cst_n Name of electoral district

cst Code of electoral district

pty_n Party name

pty Party code

pvs1 Party vote share

Details

This dataset is part of the Constituency-Level Elections Archive (CLEA) project, a repository that provides detailed election results at the constituency level for lower chamber and upper chamber legislative elections from around the world.

Value

This dataset is part of the Constituency-Level Elections Archive (CLEA). Danish Lower Chamber Electoral Results

Source

<https://electiondataarchive.org/>

References

Kollman, K., Hicken, A., Caramani, D., Backer, D., & Lublin, D. (2019). Constituency-level elections archive [data file and codebook]. Ann Arbor, MI: Center for Political Studies, University of Michigan [producer and distributor]. Retrieved from http://www.electiondataarchive.org.

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enp *The Effective Number of Parties Index*

Description

'enp()' calculates the number of Effective Political Parties according to the formula proposed by Laakso and Taagepera (1979).

Usage

```
enp(x)
```

Arguments

x	(numeric). A numeric vector in the form of a proportion of votes or seats. The vector should between from 0 to 1.

Value

A value corresponding to the number of effective parties. Normally we deprecate the fraction in the analysis, leaving only the integer.

References

Laakso, M., & Taagepera, R. (1979). "Effective" Number of Parties: A Measure with Application to West Europe. Comparative Political Studies, 12(1), 3–27. https://doi.org/10.1177/001041407901200101

Examples

```
enp(c(0.2, 0.3, 0.5))
```

`fractionalization` *Fractionalization Index*

Description

'fractionalization()' calculates the rate of electoral fractionalization according to Douglas Rae's (1968) formula.

Usage

```
fractionalization(x)
```

Arguments

`x`	(`numeric`). A numeric vector in the form of a proportion of votes or seats. The vector should range from 0 to 1.

Value

Returns a numerical vector with the estimate of party fractionalization. The result of the index is a value between 0 and 1. The closer to zero, the lower the fractionalization; the closer to 1, the higher the fractionalization.

References

Rae, D. (1968). A note on the fractionalization of some European party systems. Comparative Political Studies, 1(3), 413-418.

Examples

```
fractionalization(c(0.2, 0.3, 0.5))
```

hh *Herfindahl–Hirschman concentration index*

Description

'hh()' calculates the Herfindahl–Hirschman concentration index.

Usage

```
hh(x)
```

Arguments

x	(numeric). A numeric vector in the form of a proportion of votes or seats. The vector should range from 0 to 1.

Value

The result of the index is a value between 0 and 1. The closer to zero, the lower the concentration; the closer to 1, the higher the concentration.

References

Hirschman, Albert O. (1945). National Power and Structure of Foreign Trade, Berkley: Univ of California Press.

Herfindahl, Orris C. (1950). Concentration in the us steel industry. Unpublished PhD. Dissertation, Columbia University.

Examples

```
hh(c(0.2, 0.3, 0.5))
```

hiperfrac *Hyperfractionalization Index*

Description

'hiperfrac' calculates the hyperfractionalization index proposed by Kesselman (1966) and Wildgen (1971), which is useful for party system with many small parties.

Usage

```
hiperfrac(x)
```

Arguments

x	(numeric). A number vector in the form of a proportion of votes or seats. The vector should range from 0 to 1.

Details

This index places more weights to small parties compared to the Effective Number of Political Parties Index ('enp')

Value

A continued value, the larger the higher the fragmentation of the system

References

Kesselman, M. (1966). French Local Politics: A Statistical Examination of Grass Roots Consensus. American Political Science Review, 60(4), 963-973. doi:10.2307/1953769

Wildgen, J. K. (1971). The Measurement of Hyperfractionalization. Comparative Political Studies, 4(2), 233–243. https://doi.org/10.1177/001041407100400205

Examples

```
hiperfrac(c(0.1, 0.1, 0.05, 0.05, 0.01, 0.04, 0.65))
```

---

lh *Loosemore–Hanby Index*

Description

'lh()' calculates the electoral disproportionality between votes and seats as proposed by Loosemore and Hanby (1971).

Usage

```
lh(x, y)
```

Arguments

x	(numeric). Numeric vector with the vote share of parties
y	(numeric). Numeric vector with the seat share of parties

Value

If the input is a proportion the result is between 0 and 1. But if the input is a percentage it is between 0 and 100. In both cases the higher the value, the more disproportional the electoral system is.

References

Loosemore, J., & Hanby, V. (1971). The Theoretical Limits of Maximum Distortion: Some Analytic Expressions for Electoral Systems. British Journal of Political Science, 1(4), 467-477. doi:10.1017/S000712340000925X

Examples

```
votes <- c(0.2, 0.2, 0.6)
seats <- c(0.18, 0.17, 0.65)
lh(votes, seats)
```

`lsq` *Least Squares Index*

Description

'lsq()' calculates the electoral disproportionality between votes and seats by Least squares index method as proposed by Michael Gallagher.

Usage

```
lsq(x, y)
```

Arguments

`x`	(`numeric`). Numeric vector with the vote share of parties
`y`	(`numeric`). Numeric vector with the seat share of parties

Value

If the input is a proportion the result is between 0 and 1. But if the input is a percentage it is between 0 and 100. In both cases the higher the value, the more disproportional the electoral system is.

References

Gallagher, M. (1991). Proportionality, disproportionality and electoral systems. Electoral studies, 10(1), 33-51.

Examples

```
votes <- c(0.2, 0.2, 0.6)
seats <- c(0.18, 0.17, 0.65)
lsq(votes, seats)
```

nationalization *Party Nationalization Index*

Description

'nationalization()' calculates the Party Nationalization Index as proposed by Jones e Mainwaring (2003).

Usage

```
nationalization(x)
```

Arguments

x	(numeric). A numeric vector with the vote share for a given party x in each electoral district.

Value

The result of the index is a value between 0 and 1. A high score indicates a high level of nationalization

References

Jones, M. P., & Mainwaring, S. (2003). The Nationalization of Parties and Party Systems: An Empirical Measure and an Application to the Americas. Party Politics, 9(2), 139–166. https://doi.org/10.1177/135406880300920

Examples

```
x <- runif(27, 0.03, 0.2)
nationalization(x)
```

renewal *Parliamentary Renewal*

Description

'renewal' calculates parliamentary renewal rates

Usage

```
renewal(
  seats = NULL,
  dropout = NULL,
  defeated = NULL,
  reelected = NULL,
  type = "all"
)
```

Arguments

seats	(numeric). Number of legislative seats in dispute
dropout	(numeric). Number of parliamentarians who gave up the legislative career and vacancy for various reasons
defeated	(numeric). Number of defeated parliamentarians
reelected	(numeric). Number of re-elected parliamentarians
type	(character). type of renewal to be calculated. by default it is "all". But only one renewal can be chosen: "grr" (gross renewal rate), "crr" (compulsory renewal rate), "nrr" (net renewal rate).

Details

gross renewal rate = ((dropout + defeated) / seats) * 100

compulsory renewal rate = (dropout / seats) * 100

net renewal rate = (defeated / (reelected + defeated)) * 100

Value

A percentage which is the Renewal Rate. See parameter type.

References

SANTOS, W. G. D. (2002). Votos e partidos: almanaque de dados eleitorais. Brasil e outros países. Rio de Janeiro: Editora FGV.

Examples

```
seats <- 27
dropout <- 9
defeated <- 6
reelected <- 12

renewal(seats, dropout, defeated, reelected)
```

rice *Rice Index*

Description

'rice' proposed by Rice (1925) is used to measure party cohesion in parliamentary votes by considering two voting blocks (usually government and opposition)

Usage

```
rice(x)
```

Arguments

x	(factor). A factor vector with two levels (i.e., Yay or Nay)

Value

The index ranges from 0 to 1, where 1 is complete cohesion and 0 the formation of two equally sized subgroups within the party.

References

Rice, S. A. (1925). The Behavior of Legislative Groups: A Method of Measurement. Political Science Quarterly, 40(1), 60–72. https://doi.org/10.2307/2142407

Examples

```
voting <- as.factor(c(rep("Yes", 90), rep("No", 10)))
rice(voting)
```

spain *Spanish Lower Chamber Electoral Results*

Description

A dataset containing data on electoral results for the Spanish lower chamber by party and by electoral district from 1977 to 2019. The variables include country name, year and month of election, electoral district name and code, party name and code, and party vote share.

Usage

```
spain
```

Format

'spain' A data frame with rows and columns:

ctr_n Country name

yr Year of election

mn Month of election

cst_n Name of electoral district

cst Code of electoral district

pty_n Party name

pty Party code

pvs1 Party vote share

Details

This dataset is part of the Constituency-Level Elections Archive (CLEA) project, a repository that provides detailed election results at the constituency level for lower chamber and upper chamber legislative elections from around the world.

Value

This dataset is part of the Constituency-Level Elections Archive (CLEA) projec. Spanish Lower Chamber Electoral Results

Source

<https://electiondataarchive.org/>

References

Kollman, K., Hicken, A., Caramani, D., Backer, D., & Lublin, D. (2019). Constituency-level elections archive [data file and codebook]. Ann Arbor, MI: Center for Political Studies, University of Michigan [producer and distributor]. Retrieved from http://www.electiondataarchive.org.

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tbi *T Imbalance Index*

Description

'tbi()' calculates T index of inbalance according to the proposition of Taagepera (1979).

Usage

```
tbi(x)
```

Arguments

x	(numeric). A number vector with share of votes or seats. The vector should range from 0 to 1 (if not, the function will automatically make the vector elements sum to one).

Value

The index ranges from 0 to 1, with 0 being total equilibrium, and 1 total imbalance. When used as an indicator of competitiveness, 0 is the scenario of total competitiveness and 1 is a scenario dominated by one or a few competitors.

References

Taagepera, R. (1979). Inequality, Concentration, Imbalance. Political Methodology, 6(3), 275–291. http://www.jstor.org/stable/25791080

Examples

```
tbi(c(0.2, 0.3, 0.5))
```

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volatility *Electoral Volatility Index*

Description

'volatility()' calculates electoral volatility index developed by Perdersen (1979).

Usage

```
volatility(x, y)
```

Arguments

x	(numeric). Numeric vector with the vote share for selected parties in a given election in t.
y	(numeric). Numeric vector with the vote share for selected parties in the t+1 election.

Value

If the input is a proportion the result is between 0 and 1. But if the input is a percentage it is between 0 and 100. In both cases the higher the value the more volatile is the electoral system.

References

Pedersen, M. N. (1979). The dynamics of European party systems: changing patterns of electoral volatility. European journal of political research, 7(1), 1-26.

Examples

```
x <- c(0.3, 0.7)
y <- c(0.5, 0.5)
volatility(x, y)
```

Index