

Package: WgtEff (via r-universe)

November 4, 2024

Title Functions for Weighting Effects

Version 0.1.2

Description Functions for determining the effect of data weights on the variance of survey data: users will load a data set which has a weights column, and the package will calculate the design effect (DEFF), weighting loss, root design effect (DEFT), effective sample size (ESS), and/or weighted margin of error.

Imports stats

Depends R (>= 3.5)

License GPL (>= 2)

Encoding UTF-8

LazyData true

RoxygenNote 6.1.1

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

Author Joshua Miller [aut, cre]

Maintainer Joshua Miller <joshlmiller@msn.com>

Date/Publication 2019-06-09 22:30:03 UTC

Repository <https://joshlmiller1978.r-universe.dev>

RemoteUrl <https://github.com/cran/WgtEff>

RemoteRef HEAD

RemoteSha 21ea99d9f0c054a3132b7e4232c54de90dc08fd8

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DEFF	<i>Calculate DEFF</i>
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Description

Calculates design effect (DEFF)

Usage

DEFF(x)

Arguments

x = weights vector (name of weights column)

Value

Design effect (DEFF)

References

Design effect (DEFF) due to weighting => $n * (\text{sum}(x^2) / \text{sum}(x)^2)$

Examples

DEFF(testweights\$weights_column)

DEFT	<i>Calculate DEFT</i>
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Description

Calculates root design effect (DEFT)

Usage

DEFT(x)

Arguments

x = weights vector (name of weights column)

Value

Root design effect (DEFT)

References

Root design effect (DEFT) => square root of DEFF

Examples

```
DEFT(testweights$weights_column)
```

ESS

Calculate ESS

Description

Calculates effective sample size (ESS)

Usage

```
ESS(x)
```

Arguments

x = weights vector (name of weights column)

Value

Effective sample size (ESS)

References

Effective sample size (ESS) => $\sum(x)^2 / \sum(x^2)$

Examples

```
ESS(testweights$weights_column)
```

FULL *Calculate Full Statistics*

Description

Calculates DEFF, weighting loss, DEFT, ESS, and MOE

Usage

```
FULL(p = 50, conf = 95, N, wtcol)
```

Arguments

p = percentage for which MOE is calculated (optional, default is p = 50)
 conf = level of confidence (optional, default is conf = 95)
 N = population size (optional, used for finite population correction)
 wtcol = Weights vector (name of weights column)

Value

DEFF, weighting loss, DEFT, ESS, and MOE

Examples

```
FULL(N=3000, wtcol=testweights$weights_column)
```

MOE *Calculate MOE*

Description

Calculates weighted margin of error (MOE)

Usage

```
MOE(p = 50, conf = 95, N, wtcol)
```

Arguments

p = percentage for which MOE is calculated (optional, default is p = 50)
 conf = level of confidence (optional, default is conf = 95)
 N = population size (optional, used for finite population correction)
 wtcol = Weights vector (name of weights column)

Value

Weighted margin of error (MOE)

References

Weighted margin of error (MOE) => unweighted MOE * DEFT

Examples

```
MOE(N=3000, wtc1=testweights$weights_column)
```

testweights	<i>An example weights column for a data set of 80 cases</i>
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Description

An example weights column for a data set of 80 cases

Usage

```
testweights
```

Format

A data frame with 80 rows and 1 variable

weights_column data weights

Source

Example data generated by author

WTGLOSS	<i>Calculate weighting loss</i>
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Description

Calculates weighting loss

Usage

```
WTGLOSS(x)
```

Arguments

x = weights vector (name of weights column)

Value

Weighting loss

References

Weighting loss => DEFF-1

Examples

```
WTGLOSS(testweights$weights_column)
```

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