Package 'WgtEff'

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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

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Repository CRAN

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Contents

DEFF *Calculate DEFF*

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 * (sum(x^2) / sum(x)^2)

Examples

```
DEFF(testweights$weights_column)
```

DEFT *Calculate DEFT*

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, wtcol=testweights$weights_column)
```

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testweights *An example weights column for a data set of 80 cases*

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 *Calculate weighting loss*

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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