Package 'heterometa'

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Type Package

Title Convert Various Meta-Analysis Heterogeneity Measures

Version 0.2

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Description Published meta-analyses routinely present one of the measures of heterogeneity introduced in Higgins and Thompson (2002) <doi:10.1002/sim.1186>. For critiquing articles it is often better to convert to another measure. Some conversions are provided here and confidence intervals are also available.

Depends R (>= 3.5.0)

Imports Rdpack (>= 0.7),mathjaxr (>= 0.8-3)

RdMacros Rdpack,mathjaxr

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LazyLoad yes

R topics documented:

`heterometa-package` *Convert Various Meta-Analysis Heterogeneity Measures*

Description

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```

Published meta–analyses often only provide a subset of the heterogeneity measures first described in Higgins and Thompson (2002). This package provides a way of converting between some of them. It also contains the data used as examples in that original article.

References

Higgins JPT, Thompson SG (2002). "Quantifying heterogeneity in a meta–analysis." *Statistics in Medicine*, **21**, 1539–1558. doi:10.1002/sim.1186.

`dat.higgins02` *Example data*

Description

The package contains the following dataset: `higgins02`.

Usage

```
data(dat.higgins02)
```

Format

A data frame with 5 observations (meta-analyses) on 13 variables:

`Q` Values of the heterogeneity χ^2

`trials` The number of studies in each meta-analysis

`tau2` The value of τ^2

`pval` The associated p-value

`H` The value of H

`Hlo` Lower limit of the interval for H

`Hhi` Upper limit of the interval for H

`R` The value of R

`Rlo` Lower limit of the interval for R

`Rhi` Upper limit of the interval for R

`I2` The value of I2

`I2lo` Lower limit of the interval for I2

`I2hi` Upper limit of the interval for I2

Note

These are values from Higgins and Thompson (2002). They are provided here for testing the package. The row names of the data frame are labels for the topic of the meta-analysis: Albumin, AdjuvantChemo, Sclerotherapy, CDPCholine, GammaNail. The value for I^2 for AdjuvantChemo is as given in the artricle but is almost certainly a typo for 29 not 20.

Not all the variables are used in this package but are presented for reference.

Author(s)

Michael Dewey

References

Higgins JPT, Thompson SG (2002). "Quantifying heterogeneity in a meta–analysis." *Statistics in Medicine*, **21**, 1539–1558. doi:10.1002/sim.1186.

Examples

```
data(dat.higgins02)
```

`higgins` *Compute heterogeneity statistics after Higgins*

Description

Computes various statistics recommended by Higgins et al for quantifying heterogeneity in meta-analysis

Usage

```
higgins(Q = NULL, k = NULL, pval = NULL, slab = NULL, conflevel = 0.95)
## S3 method for class 'higgins'
print(x, type = "I2", na.print = "", ...)
```

Arguments

`Q`	Numeric: a vector of heterogeneity χ^2 from the meta–analyses
`k`	Numeric: a vector of number of studies in each meta-analysis
`pval`	Numeric: a vector of p values
`slab`	Character: a vector of labels for the meta-analyses
`conflevel`	Numeric: a vector of confidence levels
`x`	An object of class `higgins`
`type`	One of "H", "I2", "both"
`na.print`	What to print instead of NA
`...`	Argument(s) to be passed through

Details

Either `Q` or `pval` should be provided. Limited error checks for illegal parameters are performed. A warning is given if any `conflevel` is < 0.5. A print method is provided.

Value

A list of type `higgins` containing

`H`	A data frame with columns Q, k, H, ll, ul, where ll and ul are the confidence limits
`I2`	A data frame with columns Q, k, I2, ll, ul
`call`	The call

Author(s)

Michael Dewey

References

Higgins JPT, Thompson SG (2002). "Quantifying heterogeneity in a meta–analysis." *Statistics in Medicine*, **21**, 1539–1558. doi:10.1002/sim.1186.

Examples

```
higgins(14.4, 24) # 1    (1, 1.34)      0 (0, 45)
higgins(14.1, 11) # 1.19 (1, 1.64)     20 (0, 65) probably a typo for 29
higgins(81.5, 19) # 2.13 (1.71, 2.64)  78 (66, 86)
higgins(41.5, 7)  # 2.63 (1.90, 3.65)  86 (72, 92)
higgins(130.3, 3) # 8.07 (6.08, 10.72) 98 (97, 99)
data(dat.higgins02)
with(dat.higgins02, higgins(Q, trials, slab = rownames(dat.higgins02)))
```

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