Package 'ccaR'

September 3, 2022

Type Package

Title Calculates the Corrected Covered Area Index and Creates a Heatmap

Version 0.1.0

Author Theodoros Diakonidis, Konstantinos Bougioukas

Maintainer Theodoros Diakonidis <diakonidis@auth.gr>

Description Calculates and depicts the corrected covered area (CCA) index. This index is useful for asessesing the degree of primary study overlap across systematic reviews included in an overview. All the functions enable the incorporation of structural missingness in the citation matrix. The generated ``ggplot2"-based heatmap is a publication-ready plot and may be useful for authors who conduct overviews of reviews.

License GPL-2

Encoding UTF-8

LazyData FALSE

Imports ggplot2,
readxl,
utils

RoxygenNote 7.2.0

Depends R (>= 2.10)

VignetteBuilder knitr

Suggests markdown,knitr

R topics documented:

cca *Calculates the overall Corrected Covered Area (CCA) Index*

Description

It calculates the overall CCA index for the entire citation matrix. It is taking as input the citation matrix.

Usage

```
cca(cm)
```

Arguments

cm	Defines the data frame containing 1s, 0s, and NAs (in case of structural missingness).

Value

res

Examples

```
DATASET <- readxl::read_excel(system.file('extdata','cca.xlsx', package = 'ccaR'))

tb <- cca(DATASET)
```

cca_heatmap *Plots the cca heatmap*

Description

This function plots the cca heatmap. The tiles within the upper triangular matrix contain color-coded data that demonstrate the degree of overlap between pairs of reviews using the corrected covered area (CCA) measure. It is taking as input the citation matrix, the font size of the text in the tiles and the color used in the heatmap.

Usage

```
cca_heatmap(
  cm,
  fontsize = 5,
  fontsize_diag = 4,
  chroma = "#527e11",
  decimal_digits = 1
)
```

Arguments

cm	Defines the data frame containing 1s, 0s, and NAs (in case of structural missingness).
fontsize	Defines the size of the font in the tiles. Default is fontsize=5.
fontsize_diag	Defines the size of the font in the diagonal grey tiles. Default is fontsize_diag=4.
chroma	Defines the color of the plot. Default is chroma="#527e11".
decimal_digits	Defines the number of digits in the tiles. Default is decimal_digits=1 and it can also be set as 0.

Value

cca_heatmap

Examples

```
DATASET<-readxl::read_excel(system.file('extdata','cca.xlsx', package = 'ccaR'))


cca_heatmap(DATASET, 3) +
    ggplot2::theme(
       plot.caption = ggplot2::element_text(size = 16, margin=ggplot2::margin(30,0,0,0)),
        legend.title = ggplot2::element_text(size = 16, face = "bold", vjust=4),
        legend.text = ggplot2::element_text(size = 16),
        legend.key.size = ggplot2::unit(1.0, "cm"),
        legend.title.align = 0.5,
        legend.text.align = 0.5,
        axis.text.x=ggplot2::element_text(size = 16),
        axis.text.y=ggplot2::element_text(size = 16),
        axis.title=ggplot2::element_blank(),
        axis.ticks=ggplot2::element_blank(),
        axis.line=ggplot2::element_blank(),
        panel.border=ggplot2::element_blank(),
       panel.grid.major.x=ggplot2::element_line(colour = "grey80", linetype = "dashed"))
```

---

cca_table *Calculates the Corrected Covered Area (CCA) Index*

Description

It creates a data frame with the pairwise CCA for each possible pair of SRs from the citation matrix and the overall CCA. It is taking as input the citation matrix.

Usage

```
cca_table(cm)
```

Arguments

cm	Defines the data frame containing 1s, 0s, and NAs (in case of structural missingness).

Value

res

Examples

```
DATASET <- readxl::read_excel(system.file('extdata','cca.xlsx', package = 'ccaR'))

tb <- cca_table(DATASET)
```

---

dt *The dataset from the publication*

Description

The dataset contaoineing the publications

Usage

```
data(dt)
```

Format

A data frame with 14 rows and 6 variables:

Chasan2014 The publication of Chasan2014

Gilinsky2015 The publication of Gilinsky2015

Guo2016 The publication of Guo2016

Middleton2014 The publication of Middleton2014

Morton2014 The publication of Morton2014

Peacock2014 The publication of Peacock2014

Source

https://hsda.med.auth.gr/

Index