Package ‘besthr’

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**estimate**

Perform bootstrap estimation of confidence intervals of ranked HR scores

**Description**

`estimate` carries out estimation of bootstrap confidence intervals on ranked score data. Returns a `hrest` object of the result. Proceeds by calculating score ranks, then bootstrapping ranks in non-control groups retaining the mean for each bootstrap iteration. Calculates low and high quantiles of bootstrap mean distributions for each group. If technical replicates are provided in a second grouping column these will be averaged before proceeding.

**Usage**

`estimate(df, ..., control = "A", nits = 100, low = 0.025, high = 0.975)`

**Arguments**

- `df`: data frame of score and group data. Contains minimally a score and group column.
- `...`: bare names of columns to use, minimally the score column and the group column in that order. Optionally a third technical replicate column can be provided.
- `control`: the value of the grouping column taken to be the control group.
- `nits`: the number of bootstrap iterations to be done.
- `low`: the low probability value of the quantile.
- `high`: the high probability value of the quantile.

**Value**

a list object of class "hrest"

**Examples**

```r
d1 <- make_data()
estimate(d1, score, group)

d2 <- make_data2()
estimate(d2, score_column_name, sample_column_name, rep_column_name)

d3 <- make_data3()
estimate(d3, score, sample, rep, nits = 1000)
```
**make_data**

*Description*

return a sample data set of random values for two groups

*Usage*

`make_data()`

*Value*

tibble of random values for two groups

*Examples*

```r
d1 <- make_data()
```

**make_data2**

*Description*

return a sample data set of random values for two groups with three technical reps per group

*Usage*

`make_data2()`

*Value*

tibble of random values for two groups with three technical reps per group

*Examples*

```r
d2 <- make_data2()
```
### make_data3

Return a sample data set of random values for three groups with three technical reps per group.

**Description**

@examples

**Usage**

make_data3()

**Details**

d3 <- make_data3()

**Value**

tibble of random values for three groups with three technical reps per group

### plot.hrest

Plots the hrest object.

**Description**

Returns a ggplot object representing the hrest object from estimate. The content of left panel varies according to the value of the which parameter. If which = "rank_simulation" is used a plot of rank score values will be plotted in the left panel. In this case technical replicates will be averaged if provided. If which = "just_data" a plot of scores only is created and technical replicates are displayed as is. In each case, the right hand panel shows the rank bootstrap distribution and confidence interval boundaries for all non-control groups.

**Usage**

## S3 method for class 'hrest'

plot(x, ..., which = "rank_simulation")

**Arguments**

- `x` the hrest object from estimate
- `...` Other parameters
- `which` the type of left hand panel to create. Either "rank_simulation" or "just_data"

**Value**

ggplot object
print.hrest

Examples

d1 <- make_data()
hr_est <- estimate(d1, score, group)
plot(hr_est)

print.hrest  print a summary of the hrest object

Description

print a summary of the hrest object

Usage

## S3 method for class 'hrest'
print(x, ...)

Arguments

x  hrest object
...
other parameters

Value

null

Examples

d1 <- make_data()
hr_est <- estimate(d1, score, group)
plot(hr_est)
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