

Package ‘radiant.design’

October 13, 2016

Type Package

Title Design Menu for Radiant: Business Analytics using R and Shiny

Version 0.6.0

Date 2016-9-14

Description The Radiant Design menu includes interfaces for design of experiments, sampling, and sample size calculation. The application extends the functionality in radiant.data.

Depends R ($\geq 3.3.0$),
radiant.data (≥ 0.6),
mvtnorm

Imports dplyr (≥ 0.5),
shiny (≥ 0.14),
AlgDesign ($\geq 1.1.7.3$),
import ($\geq 1.1.0$),
polycor,
methods

Suggests testthat ($\geq 1.0.0$),

URL <https://github.com/radiant-rstats/radiant.design>, <https://radiant-rstats.github.io/docs>

BugReports <https://github.com/radiant-rstats/radiant.design/issues>

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LazyData true

RoxygenNote 5.0.1

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| | |
|-----|--|
| doe | <i>Create (partial) factorial design</i> |
|-----|--|

Description

Create (partial) factorial design

Usage

```
doe(factors, int = "", trials = NA, seed = NA)
```

Arguments

| | |
|---------|---|
| factors | Categorical variables used as input for design |
| int | Vector of interaction terms to consider when generating design |
| trials | Number of trial to create. If NA then all feasible designs will be considered until a design with perfect D-efficiency is found |
| seed | Random seed to use as the starting point |

Details

See <https://radiant-rstats.github.io/docs/design/doe.html> for an example in Radiant

Value

A list with all variables defined in the function as an object of class doe

See Also

[summary.doe](#) to summarize results

Examples

```
"price; $10; $13; $16\nfood; popcorn; gourmet; no food" %>% doe
```

| | |
|----------------|-----------------------|
| radiant.design | <i>radiant.design</i> |
|----------------|-----------------------|

Description

radiant.design
Launch Radiant in the default browser

Usage

```
radiant.design()
```

Details

See <https://radiant-rstats.github.io/docs> for documentation and tutorials

| | |
|-----------------------|-------------------------|
| <code>rndnames</code> | <i>100 random names</i> |
|-----------------------|-------------------------|

Description

100 random names

Usage

```
data(rndnames)
```

Format

A data frame with 100 rows and 2 variables

Details

A list of 100 random names generated by listofrandomnames.com. Description provided in `attr(rndnames,"description")`

| | |
|--------------------------|--------------------------------|
| <code>sample_size</code> | <i>Sample size calculation</i> |
|--------------------------|--------------------------------|

Description

Sample size calculation

Usage

```
sample_size(type = "mean", err_mean = 2, sd_mean = 10, err_prop = 0.1,
  p_prop = 0.5, conf_lev = 1.96, incidence = 1, response = 1,
  pop_correction = "no", pop_size = 1000000)
```

Arguments

| | |
|-----------------------------|--|
| <code>type</code> | Choose "mean" or "proportion" |
| <code>err_mean</code> | Acceptable Error for Mean |
| <code>sd_mean</code> | Standard deviation for Mean |
| <code>err_prop</code> | Acceptable Error for Proportion |
| <code>p_prop</code> | Initial proportion estimate for Proportion |
| <code>conf_lev</code> | Confidence level |
| <code>incidence</code> | Incidence rate (i.e., fraction of valid respondents) |
| <code>response</code> | Response rate |
| <code>pop_correction</code> | Apply correction for population size ("yes","no") |
| <code>pop_size</code> | Population size |

Details

See https://radiant-rstats.github.io/docs/design/sample_size.html for an example in Radiant

Value

A list of variables defined in sample_size as an object of class sample_size

See Also

[summary.sample_size](#) to summarize results

Examples

```
result <- sample_size(type = "mean", err_mean = 2, sd_mean = 10)
```

sample_size_comp

Sample size calculation for comparisons

Description

Sample size calculation for comparisons

Usage

```
sample_size_comp(type, n = NULL, p1 = NULL, p2 = NULL, delta = NULL,
  sd = NULL, conf_lev = NULL, power = NULL, ratio = 1,
  alternative = "two.sided")
```

Arguments

| | |
|-------------|--|
| type | Choose "mean" or "proportion" |
| n | Sample size |
| p1 | Proportion 1 (only used when "proportion" is selected) |
| p2 | Proportion 2 (only used when "proportion" is selected) |
| delta | Difference in means between two groups (only used when "mean" is selected) |
| sd | Standard deviation (only used when "mean" is selected) |
| conf_lev | Confidence level |
| power | Power |
| ratio | Sampling ratio (n1 / n2) |
| alternative | Two or one sided test |

Details

See https://radiant-rstats.github.io/docs/design/sample_size_comp.html for an example in Radiant

Value

A list of variables defined in `sample_size_comp` as an object of class `sample_size_comp`

See Also

[summary.sample_size_comp](#) to summarize results

| | |
|----------|-------------------------------|
| sampling | <i>Simple random sampling</i> |
|----------|-------------------------------|

Description

Simple random sampling

Usage

```
sampling(dataset, var, sample_size, data_filter = "")
```

Arguments

| | |
|-------------|--|
| dataset | Dataset name (string). This can be a dataframe in the global environment or an element in an <code>r_data</code> list from Radiant |
| var | The variable to sample from |
| sample_size | Number of units to select |
| data_filter | Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000") |

Details

See <https://radiant-rstats.github.io/docs/design/sampling.html> for an example in Radiant

Value

A list of variables defined in `sampling` as an object of class `sampling`

See Also

[summary.sampling](#) to summarize results

Examples

```
result <- sampling("rndnames", "Names", 10)
```

| | |
|-------------|--|
| summary.doe | <i>Summary method for doe function</i> |
|-------------|--|

Description

Summary method for doe function

Usage

```
## S3 method for class 'doe'  
summary(object, eff = TRUE, part = TRUE, full = TRUE, ...)
```

Arguments

| | |
|--------|--|
| object | Return value from doe |
| eff | If TRUE print efficiency output |
| part | If TRUE print partial factorial |
| full | If TRUE print full factorial |
| ... | further arguments passed to or from other methods. |

Details

See <https://radiant-rstats.github.io/docs/design/doe.html> for an example in Radiant

See Also

[doe](#) to calculate results

Examples

```
"price; $10; $13; $16\nfood; popcorn; gourmet; no food" %>% doe %>% summary
```

| | |
|---------------------|--|
| summary.sample_size | <i>Summary method for the sample_size function</i> |
|---------------------|--|

Description

Summary method for the sample_size function

Usage

```
## S3 method for class 'sample_size'  
summary(object, ...)
```

Arguments

| | |
|--------|---|
| object | Return value from sample_size |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/design/sample_size.html for an example in Radiant

See Also

[sample_size](#) to generate the results

Examples

```
result <- sample_size(type = "mean", err_mean = 2, sd_mean = 10)
summary(result)
```

```
summary.sample_size_comp
```

Summary method for the sample_size_comp function

Description

Summary method for the sample_size_comp function

Usage

```
## S3 method for class 'sample_size_comp'
summary(object, ...)
```

Arguments

| | |
|--------|--|
| object | Return value from sample_size_comp |
| ... | further arguments passed to or from other methods |

Details

See https://radiant-rstats.github.io/docs/design/sample_size_comp.html for an example in Radiant

See Also

[sample_size_comp](#) to generate the results

| | |
|------------------|---|
| summary.sampling | <i>Summary method for the sampling function</i> |
|------------------|---|

Description

Summary method for the sampling function

Usage

```
## S3 method for class 'sampling'  
summary(object, print_sf = TRUE, ...)
```

Arguments

| | |
|----------|---|
| object | Return value from sampling |
| print_sf | Print full sampling frame. Default is TRUE |
| ... | further arguments passed to or from other methods |

Details

See <https://radiant-rstats.github.io/docs/design/sampling.html> for an example in Radiant

See Also

[sampling](#) to generate the results

Examples

```
set.seed(1234)  
result <- sampling("rndnames", "Names", 10)  
summary(result)
```


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