Package: inferit (via r-universe)

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Type Package

Version 0.3.1

Title Hypothesis Tests and Statistical Distributions for 'SciViews::R'

Description Statistical distributions (including their visual representation) and hypothesis tests with rich-formatted tabular outputs for the 'SciViews::R' dialect.

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Depends R (>= 4.2.0)

Imports chart (>= 1.5.0), distributional (>= 0.3.2), flextable (>= 0.9.1), ggplot2 (>= 3.4.2), knitr (>= 1.42), rlang (>= 1.1.1), stats (>= 4.2.0), tabularise (>= 0.6.0)

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Remotes SciViews/chart, SciViews/tabularise

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URL https://github.com/SciViews/inferit, https://www.sciviews.org/inferit/

BugReports https://github.com/SciViews/inferit/issues

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Contents

`inferit-package` *Hypothesis Tests and Statistical Distributions for 'SciViews::R'*

Description

Statistical distributions and hypothesis tests objects with rich-formatted charts and tables.

Important functions

- `tabularise()` methods for **htest** objects.
- `stddev()` for **distribution** objects.
- `dfun()`, `cdfun()` density function for **distribution** objects.
- `chart()` method for **distribution** objects.
- `geom_funfill()` fills a part of a distribution density function.

`dfun` *Create and plot density functions for distribution objects*

Description

The **distribution** objects represent one or more statistical distributions. The functions `dfun()` and `geom_funfill()`, together with `chart()` allow to plot them.

Usage

```
dfun(object, i = 1)

cdfun(object, i = 1)

## S3 method for class 'distribution'
autoplot(
  object,
  n = 500,
  xlim = NULL,
  size = 99.5,
  xlab = "Quantile",
```

```
  ylab = if (type == "density") "Probability density" else
    "Cumulative probability density",
  plot.it = TRUE,
  use.chart = FALSE,
  ...,
  type = "density",
  theme = NULL
)

## S3 method for class 'distribution'
chart(data, ..., type = "density", env = parent.frame())

geom_funfill(
  mapping = NULL,
  data = NULL,
  fun,
  from,
  to,
  geom = "area",
  fill = "salmon",
  alpha = 0.5,
  ...
)
```

Arguments

object	A **distribution** object, as from the {distributional} package.
i	The distribution to use from the list (first one by default)
n	The number of points to use to draw the density functions (500 by default) of continuous distributions.
xlim	Two numbers that limit the X axis.
size	If xlim= is not provided, it is automatically calculated using the size of the CI between 0 and 100 (99.5 by default) for continuous distributions.
xlab	The label of the X axis ("Quantile" by default).
ylab	The label of the Y axis ("Probability density" or "Cumulative probability density" by default).
plot.it	Should the densities be plotted for all the distributions (TRUE by default)?
use.chart	Should chart() be used (TRUE by default)? Otherwise, ggplot() is used.
...	Further arguments to stat_function().
type	The type of plot ("density" by default, or "cumulative").
theme	The theme for the plot (ignored for now).
data	The data frame to use (NULL by default).
env	The environment to use to evaluate expressions.
mapping	the mapping to use (NULL by default.

fun	The function to use (could be dfun(distribution_object)).
from	The first quantile to delimit the filled area.
to	The second quantile to delimit the filled area.
geom	The geom to use ("area" by default).
fill	The color to fill the area ("salmon" by default).
alpha	The alpha transparency to apply, 0.5 by default.

Value

Either a function or a ggplot object.

Examples

```
library(distributional)
library(chart)
di1 <- dist_normal(mu = 1, sigma = 1.5)
chart(di1) +
  geom_funfill(fun = dfun(di1), from = -5, to = 1)

# With two distributions
di2 <- c(dist_normal(10, 1), dist_student_t(df = 3, 13, 1))
chart(di2) +
  geom_funfill(fun = dfun(di2, 1), from = -5, to = 0) +
  geom_funfill(fun = dfun(di2, 2), from = 2, to = 6, fill = "turquoise3")
chart$cumulative(di2)
# A discrete distribution
di3 <- dist_binomial(size = 7, prob = 0.5)
chart(di3)
chart$cumulative(di3)
# A continuous together with a discrete distribution
di4 <- c(dist_normal(mu = 4, sigma = 2), dist_binomial(size = 8, prob = 0.5))
chart(di4)
chart$cumulative(di4)
```

---

stddev *Get standard deviation for a distribution objects*

Description

The **distribution** objects represent one or more statistical distributions. The generic functions stddev() returns the standard deviation for these distributions.

Usage

```
stddev(x, ...)

## Default S3 method:
```

```
stddev(x, ...)

## S3 method for class 'distribution'
stddev(x, ...)
```

Arguments

x	A **distribution** object, as from the {distributional} package.
...	Further arguments (not used yet).

Value

A numeric vector with one or more standard deviations.

Examples

```
library(distributional)
n1 <- dist_normal(mu = 1, sigma = 1.5)
n1
class(n1)
family(n1)
mean(n1)
variance(n1)
stddev(n1)
```

---

tabularise_default.htest

Create a rich-formatted table from an htest object

Description

`tabularise()` an **htest** object (into a a **flextable**) that can be further post-edited..

Usage

```
## S3 method for class 'htest'
tabularise_default(
  data,
  header = TRUE,
  title = NULL,
  lang = getOption("data.io_lang", "en"),
  show.signif.stars = getOption("show.signif.stars", TRUE),
  ...,
  kind = "ft",
  env = parent.frame()
)
```

Arguments

data	An **htest** object
header	If TRUE (by default), add a header to the table
title	If TRUE, add a title to the table header. Default to the same value than header, except outside of a chunk where it is FALSE if a table caption is detected (tbl-cap YAML entry).
lang	The natural language to use. The default value can be set with, e.g., options(data.io_lang = "fr") for French.
show.signif.stars	If TRUE, add the significance stars to the table. The default value is obtained from getOption("show.signif.stars"").
...	Additional arguments (unused for now).
kind	The kind of table to produce: "tt" for tinytable, or "ft" for flextable (default).
env	The environment where to evaluate lazyeval expressions (unused for now).

Value

A **flextable** object you can print in different forms or rearrange with the {flextable} functions.

Examples

```
data(iris)
iris_cor <- cor.test(iris$Sepal.Length, iris$Sepal.Width)
tabularise::tabularise(iris_cor)

tabularise::tabularise(t.test(x = 1:10, y = 7:20), lang = "fr")
```

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