Package ‘vistributions’

May 20, 2021

Type Package
Title Visualize Probability Distributions
Version 0.1.2
Description Visualize and compute percentiles/probabilities of normal, t, f, chi square
and binomial distributions.
Depends R(>= 3.2)
Imports ggplot2, magrittr, stats, utils
Suggests covr, knitr, rmarkdown, testthat, vdiffr, xplorerr
License MIT + file LICENSE
URL https://github.com/rsquaredacademy/vistributions,
https://vistributions.rsquaredacademy.com
BugReports https://github.com/rsquaredacademy/vistributions/issues
Encoding UTF-8
RoxygenNote 7.1.1
VignetteBuilder knitr
NeedsCompilation no
Author Aravind Hebbali [aut, cre]
Maintainer Aravind Hebbali <hebbali.aravind@gmail.com>
Repository CRAN
Date/Publication 2021-05-20 12:10:02 UTC

R topics documented:

  vdist_binom_plot ................................................. 2
  vdist_chisquare_plot ........................................ 3
  vdist_f_plot .................................................. 4
  vdist_launch_app ............................................. 6
  vdist_normal_plot ........................................... 6
  vdist_t ......................................................... 7
  vistributions ............................................... 8
vdist_binom_plot

Index

vdist_binom_plot  Visualize binomial distribution

Description

Visualize how changes in number of trials and the probability of success affect the shape of the binomial distribution. Compute & visualize probability from a given quantile and quantiles out of given probability.

Usage

vdist_binom_plot(n = 10, p = 0.3, print_plot = TRUE)

type = c("lower", "upper", "exact", "interval"),
print_plot = TRUE
)

vdist_binom_perc(n = 10, p = 0.5, tp = 0.05,
type = c("lower", "upper"),
print_plot = TRUE
)

Arguments

n Number of trials.

p Aggregate probability.

print_plot logical; if TRUE, prints the plot else returns a plot object.

s Number of success.

type Lower/upper/exact/interval.

tp Probability of success in a trial.

See Also

Binomial
vdist_chisquare_plot

Examples

# visualize binomial distribution
vdist_binom_plot(10, 0.3)

# visualize probability from a given quantile
vdist_binom_prob(10, 0.3, 4, type = 'exact')
vdist_binom_prob(10, 0.3, 4, type = 'lower')
vdist_binom_prob(10, 0.3, 4, type = 'upper')
vdist_binom_prob(10, 0.3, c(4, 6), type = 'interval')

# visualize quantiles out of given probability
vdist_binom_perc(10, 0.5, 0.05)
vdist_binom_perc(10, 0.5, 0.05, "upper")

vdist_chisquare_plot

Visualize chi square distribution

Description

Visualize how changes in degrees of freedom affect the shape of the chi square distribution. Compute & visualize quantiles out of given probability and probability from a given quantile.

Usage

vdist_chisquare_plot(
  df = 3,
  normal = FALSE,
  xaxis_range = 25,
  print_plot = TRUE
)

vdist_chisquare_perc(
  probs = 0.95,
  df = 3,
  type = c("lower", "upper"),
  print_plot = TRUE
)

vdist_chisquare_prob(
  perc = 13,
  df = 11,
  type = c("lower", "upper"),
  print_plot = TRUE
)
Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>df</td>
<td>Degrees of freedom.</td>
</tr>
<tr>
<td>normal</td>
<td>If TRUE, normal curve with same mean and sd as the chi square distribution is drawn.</td>
</tr>
<tr>
<td>xaxis_range</td>
<td>The upper range of the X axis.</td>
</tr>
<tr>
<td>print_plot</td>
<td>logical; if TRUE, prints the plot else returns a plot object.</td>
</tr>
<tr>
<td>probs</td>
<td>Probability value.</td>
</tr>
<tr>
<td>type</td>
<td>Lower tail or upper tail.</td>
</tr>
<tr>
<td>perc</td>
<td>Quantile value.</td>
</tr>
</tbody>
</table>

See Also

Chisquare

Examples

```r
# visualize chi square distribution
vdist_chisquare_plot()
vdist_chisquare_plot(df = 5)
vdist_chisquare_plot(df = 5, normal = TRUE)

# visualize quantiles out of given probability
vdist_chisquare_perc(0.165, 8, 'lower')
vdist_chisquare_perc(0.22, 13, 'upper')

# visualize probability from a given quantile.
vdist_chisquare_prob(13.58, 11, 'lower')
vdist_chisquare_prob(15.72, 13, 'upper')
```

Description

Visualize how changes in degrees of freedom affect the shape of the F distribution. Compute & visualize quantiles out of given probability and probability from a given quantile.

Usage

```r
vdist_f_plot(num_df = 4, den_df = 30, normal = FALSE, print_plot = TRUE)

vdist_f_perc(
    probs = 0.95,
    num_df = 3,
    den_df = 30,
)```
vdist_f_plot

    type = c("lower", "upper"),
    print_plot = TRUE
  )

vdist_f_prob(
  perc = 2.35,
  num_df = 5,
  den_df = 32,
  type = c("lower", "upper"),
  print_plot = TRUE
)

Arguments

num_df Degrees of freedom associated with the numerator of f statistic.
den_df Degrees of freedom associated with the denominator of f statistic.
normal If TRUE, normal curve with same mean and sd as the F distribution is drawn.
print_plot logical; if TRUE, prints the plot else returns a plot object.
probs Probability value.
type Lower tail or upper tail.
perc Quantile value.

See Also

FDist

Examples

  # visualize F distribution
  vdist_f_plot()
  vdist_f_plot(6, 10, normal = TRUE)

  # visualize probability from a given quantile
  vdist_f_perc(0.95, 3, 30, 'lower')
  vdist_f_perc(0.125, 9, 35, 'upper')

  # visualize quantiles out of given probability
  vdist_f_prob(2.35, 5, 32)
  vdist_f_prob(1.5222, 9, 35, type = "upper")
vdist_launch_app  

**Launch shiny app**

**Description**

Launches shiny app for visualizing distributions.

**Usage**

vdist_launch_app()

**Examples**

```r
## Not run:
vdist_launch_app()

## End(Not run)
```

vdist_normal_plot  

**Visualize normal distribution**

**Description**

Visualize how changes in mean and standard deviation affect the shape of the normal distribution. Compute & visualize quantiles out of given probability and probability from a given quantile.

**Usage**

vdist_normal_plot(mean = 0, sd = 1, print_plot = TRUE)

vdist_normal_perc(
  probs = 0.95,
  mean = 0,
  sd = 1,
  type = c("lower", "upper", "both"),
  print_plot = TRUE
)

vdist_normal_prob(
  perc = 3,
  mean = 0,
  sd = 1,
  type = c("lower", "upper", "both"),
  print_plot = TRUE
)
vdist_t

Arguments

- **mean**: Mean of the normal distribution.
- **sd**: Standard deviation of the normal distribution.
- **print_plot**: Logical; if TRUE, prints the plot else returns a plot object.
- **probs**: Probability value.
- **type**: Lower tail, upper tail or both.
- **perc**: Quantile value.

See Also

- **Normal**

Examples

```r
# visualize normal distribution
vdist_normal_plot()
vdist_normal_plot(mean = 2, sd = 0.6)

# visualize quantiles out of given probability
vdist_normal_perc(0.95, mean = 2, sd = 1.36)
vdist_normal_perc(0.3, mean = 2, sd = 1.36, type = 'upper')
vdist_normal_perc(0.95, mean = 2, sd = 1.36, type = 'both')

# visualize probability from a given quantile
vdist_normal_prob(3.78, mean = 2, sd = 1.36)
vdist_normal_prob(3.43, mean = 2, sd = 1.36, type = 'upper')
vdist_normal_prob(c(-1.74, 1.83), type = 'both')
```

vdist_t

**Visualize t distribution**

Description

Visualize how degrees of freedom affect the shape of t distribution, visualize quantiles out of given probability and probability from a given quantile.

Usage

```r
vdist_t_plot(df = 3, print_plot = TRUE)

vdist_t_perc(
  probs = 0.95,
  df = 4,
  type = c("lower", "upper", "both"),
  print_plot = TRUE
)```
vdist_t_prob(perc = 1.6, df = 7, type = c("lower", "upper", "interval", "both"), print_plot = TRUE)

Arguments

df Degrees of freedom.
print_plot logical; if TRUE, prints the plot else returns a plot object.
probs Probability value.
type Lower tail, upper tail, interval or both.
perc Quantile value.

See Also

TDist

Examples

# visualize t distribution
vdist_t_plot()
vdist_t_plot(6)
vdist_t_plot(df = 8)

# visualize quantiles out of given probability
vdist_t_perc(probs = 0.95, df = 4, type = 'lower')
vdist_t_perc(probs = 0.35, df = 4, type = 'upper')
vdist_t_perc(probs = 0.69, df = 7, type = 'both')

# visualize probability from a given quantile
vdist_t_prob(2.045, 7, 'lower')
vdist_t_prob(0.945, 7, 'upper')
vdist_t_prob(1.445, 7, 'interval')
vdist_t_prob(1.6, 7, 'both')

vistributions vistributions package

Description

Visualize probability distributions.
Index

Binomial, 2

Chisquare, 4

FDist, 5

Normal, 7

TDist, 8

vdist_binom_perc (vdist_binom_plot), 2
vdist_binom_plot, 2
vdist_binom_prob (vdist_binom_plot), 2
vdist_chisquare_perc
  (vdist_chisquare_plot), 3
vdist_chisquare_plot, 3
vdist_chisquare_prob
  (vdist_chisquare_plot), 3
vdist_f_perc (vdist_f_plot), 4
vdist_f_plot, 4
vdist_f_prob (vdist_f_plot), 4
vdist_launch_app, 6
vdist_normal_perc (vdist_normal_plot), 6
vdist_normal_plot, 6
vdist_normal_prob (vdist_normal_plot), 6
vdist_t, 7
vdist_t_perc (vdist_t), 7
vdist_t_plot (vdist_t), 7
vdist_t_prob (vdist_t), 7
vdist_distributions, 8