Package 'kitesquare'

March 20, 2025

Title Visualize Contingency Tables Using Kite-Square Plots

Version 0.0.2

Description Create a kite-square plot for contingency tables using 'ggplot2', to display their relevant quantities in a single figure (marginal, conditional, expected, observed, chi-squared). The plot resembles a flying kite inside a square if the variables are independent, and deviates from this the more dependence exists.

License LGPL (>= 3)

Encoding UTF-8

URL https://github.com/HUGLeipzig/kitesquare

BugReports https://github.com/HUGLeipzig/kitesquare/issues

RoxygenNote 7.3.2

VignetteBuilder quarto

Imports tidyr, dplyr, ggplot2, ggh4x, scales, rlang

Suggests knitr, quarto

Config/Needs/website quarto

NeedsCompilation no

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Repository CRAN

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Contents

`kitesquare` *Create a kite-square plot*

Description

Given a data frame or tibble, creates a kite-square plot to visualize the contingency table of two discrete variables.

Usage

```
kitesquare(
  df,
  x,
  y,
  obs,
  normalize = FALSE,
  full_range = FALSE,
  center_x = TRUE,
  center_y = TRUE,
  center = NULL,
  fill_x = FALSE,
  fill_y = FALSE,
  fill = NULL,
  kite = TRUE,
  spars = TRUE,
  square = TRUE,
  chi2 = TRUE,
  bars_x = TRUE,
  bars_y = TRUE,
  bars = NULL,
  intersect_x = TRUE,
  intersect_y = TRUE,
  intersect = NULL,
  color_x = "#e31a1c",
  color_y = "#1f78b4",
  kite_color = "black",
  square_color = "black",
  spars_color = "black",
  chi2_color = "#bebebe",
  border_color = "black",
  alpha_fill = 0.3,
  alpha_chi2 = 0.3,
  alpha = NULL,
  pointsize = 3,
  linewidth = 1,
  whisker_length = 0.05,
  extend_whiskers = FALSE,
```

```
  dodge_x = 2,
  ...
)
```

Arguments

df	A tibble or data frame of observations.
x, y	Name of the variable in df for x (columns) and y (rows), as string or expression.
obs	Name of observation counts in df. If a combination of y and x appears multiple times in df, obs are added together. If not provided, a value of 1 will be assumed for each line in df.
normalize	Should values te normalized to probabilities and expressed in percent?
full_range	If normalize is TRUE, should all axes limits be from 0 to 1?
center_x, center_y, center	Should a binary x or y variable be centered (axis reversed) so that the spars meet? center overrides both.
fill_x, fill_y, fill	Should the space between x or y bars and the axis be filled? fill overrides both.
kite, square, spars, chi2	Should the kite, square, spars and χ^2 patches be drawn?
bars_x, bars_y, bars	Should the bars for the x and y variables be drawn? bars overrides both.
intersect_x, intersect_y, intersect	Should the intersect positions for x and y variables with their axes be drawn? intersect overrides both.
color_x, color_y	Colors for x and y.
kite_color, square_color, spars_color, chi2_color	Color of the kite, square, spars and χ^2 patches.
border_color	Color for the border around each cell.
alpha_fill, alpha_chi2, alpha	Transparency for fill and χ^2 patches. alpha overrides both.
pointsize	The point size for intersects and spars.
linewidth	The line width for bars and spars.
whisker_length	The length of bar whiskers.
extend_whiskers	Should the bar whiskers be extended to wrap around the χ^2 patches?
dodge_x	The number of levels the x axis labels should dodge.
...	Further arguments passed to ggplot2::facet_grid().

Value

A ggplot object, with an extra $table key. The latter contains the tibble of coordinates created internally for plotting.

Examples

```
df <- dplyr::tibble(
  X=c('A', 'A', 'B', 'B', 'B'),
  Y=c('U', 'V', 'U', 'V', 'V'),
  count=c(30,15,30,70,65))
kitesquare(df, X, Y, count)
kitesquare(df, X, Y, count, normalize=TRUE, center_x=FALSE)
```

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