Package ‘rreg’
March 22, 2018

Title Visualization for Norwegian Health Quality Registries
Version 0.2.1
Description Assists for presentation and visualization of data from the Norwegian Health Quality Registries following the standardization based on the requirement specified by the National Service for Health Quality Registries. This requirement can be accessed from (<https://www. kvalitetsregistre.no/resultater-til-publisering-pa-nett>). Unfortunately the website is only available in Norwegian.
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Imports ggplot2 (>= 2.1.0), directlabels, grid, stats
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**hfdata**

*hfdata as sample data for institutions*

**Description**

hfdata is just a randomly created dataset to show how this package works. The centre names are derived from names of towns on the north-eastern part of Borneo.

**Usage**

hfdata

**Format**

hfdata consist of several columns:

- inst: The institution names and "Sabah" is the region name
- id: The identification number of the centres
- 2003-2007: The measurement collected yearly based
- case1: Cases normally distributed with mean=60 and SD=30
- case2: Cases normally distributed with mean=20 and SD=2
- extt: Variable with extreme values
- ll: Lower limit for case2
- up: Upper limit for case2

**regbar**

*Barplot with explicit data comparison*

**Description**

Create a barplot with the possibility to differentiate a specific item compared to the rest. This is useful in a situation when there is a need to show the total value as compared to each items in the x-axis. A specific example related to the Norwegian Health Registries is when the aggregated value from each health institutions or health regions is compared to the national data.

**Usage**

regbar(data, x, y, comp, num, aim = NULL, split = NULL, ascending = TRUE, title, ylab, col1, col2, col3, flip = TRUE, ...)
Arguments

- **data**: Data set
- **x**: x-axis
- **y**: y-axis
- **comp**: Compare a specific bar from the rest for a vivid comparison eg. National compared to the different districts
- **num**: Include denominator i.e N in the figure eg. Tawau HF (N=2088)
- **aim**: A line on y-axis indicating aim
- **split**: Where to split inside and outside text eg. 10% of max as split=0.1
- **ascending**: Sort data ascending order
- **title**: Title for the plot
- **ylab**: Label for y-axis
- **col1**: Color for bars
- **col2**: Color for the 'diff' bar
- **col3**: Color for aim line
- **flip**: Flip plot horizontally
- **...**: Additional arguments

Examples

```r
# basic usage
library("rreg")
regbar(data = hfdata, x = inst, y = case)
regbar(hfdata, inst, case2, comp = "Tawau HF")
regbar(hfdata, inst, 2007, comp = "Taw", num = extt)

# split text visualisation at UE of max value
regbar(hfdata, inst, 2007, comp = "Taw", split = 0.05)
```

Description

Create a barplot with point to visualise comparison. It is also possible to include table to show the value of the plot.

Usage

```r
regcom(data, x, yl, yc, tab = TRUE, title, scale, ascending = TRUE, col1, col2, lab1, lab2, num, rotate, leg1, leg2, ...)
```
Arguments

- **data**: Data set
- **x**: x-axis
- **yl**: Variable or column for local values
- **yc**: Variable or column for national values
- **tab**: Include table
- **title**: Title for the plot
- **scale**: Scale for x-axis i.e., percentage or number
- **ascending**: Sort data ascending order
- **col1**: Color for bars
- **col2**: Color for the ‘diff’ bar
- **lab1**: Label for table first column
- **lab2**: Label for table second column
- **num**: Include denominator i.e., N in the figure e.g., Tawau HF (N=2088)
- **rotate**: Rotate table text
- **leg1**: Text legend for bar
- **leg2**: Text legend for point
- **...**: Additional arguments

Examples

```r
library("rreg")
regcom(data = hfdata, x = inst, yl = case2, yc = case1)

# include table
regcom(data = hfdata, x = inst, yl = case2, yc = case1, tab = FALSE)

# keep original order
regcom(data = hfdata, x = inst, yl = case2, yc = case1, scale = "Percentage", ascending = FALSE)

# text for table rotate 10%
regcom(data = hfdata, x = inst, yl = case2, yc = case1, lab1="Tawau", lab2="Negara", rotate=10)
```

---

**regerr**

Plot for variability

Description

Create a plot to show uncertainty either by showing the Standard Error of the Mean (SEM) or Confidence Interval (CI). Lower and upper limit should be specified. Figure should also be commented if the variability is a SEM or CI.
Usage

regerr(data, x, y, ll, ul, title, ylab, comp, col1, col2, ascending = TRUE, flip = TRUE, ...)

Arguments

data: Data set
x: x-axis
y: y-axis
ll: Lower limit
ul: Upper limit
title: Title for the plot
ylab: Label for y-axis
comp: Compare a specific bar from the rest for a vivid comparison eg. National compared to the different districts
col1: Color for bars
col2: Color for the 'diff' bar
ascending: Sort data ascending order
flip: Flip plot horizontally
...: Additional arguments

Examples

# basic usage
regerr(hfdata, inst, case2, ll, ul)
regerr(hfdata, inst, case2, ll, ul, comp="Sabah")

regline

Line plot to show trend

Description

Create a line plot that can be used to elucidate if trends exit over time.

Usage

regline(data, x, y, grp, title, ylab, colp, digit, ...)
Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>data</td>
<td>Data set</td>
</tr>
<tr>
<td>x</td>
<td>x-axis</td>
</tr>
<tr>
<td>y</td>
<td>y-axis</td>
</tr>
<tr>
<td>grp</td>
<td>Group variable</td>
</tr>
<tr>
<td>title</td>
<td>Title for the plot</td>
</tr>
<tr>
<td>ylab</td>
<td>Label for y-axis</td>
</tr>
<tr>
<td>colp</td>
<td>Color palettes to use from ColorBrewer. To check other palettes run library(RColorBrewer); display.brewer.all()</td>
</tr>
<tr>
<td>digit</td>
<td>Number of digit to show</td>
</tr>
<tr>
<td>...</td>
<td>Additional arguments</td>
</tr>
</tbody>
</table>

Examples

```r
regline(data = yrdata, x=year, y=pros, grp=var)
regline(yrdata, year, pros, var, colp="Set1", digit=1)
```

---

**Description**

Create a dartboard style diagram to visualise precision. The middle point represent complete precision for example the objectives or plans. Imagine it’s like a dartboard and the center means 100% precision or it could be completeness/achievement. The standard division of the proportion to show precision allocated in the diagram is 50%, 80% and 100%.

**Usage**

```r
regrad(data, x, y, long = FALSE, title, size, pct1, pct2, col1, col2, col3, ...
```

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>data</td>
<td>Data set</td>
</tr>
<tr>
<td>x</td>
<td>Names of variable</td>
</tr>
<tr>
<td>y</td>
<td>Value of the variable</td>
</tr>
<tr>
<td>long</td>
<td>Split whitespaces of the variable names</td>
</tr>
<tr>
<td>title</td>
<td>Title for the plot</td>
</tr>
<tr>
<td>size</td>
<td>Size of the point</td>
</tr>
<tr>
<td>pct1</td>
<td>Percentage first pie proportion</td>
</tr>
</tbody>
</table>
pct2  Percentage second pie proportion
col1  Colour of the first pie proportion
col2  Colour of the second pie proportion
col3  Colour of the third pie proportion
...  Additional arguments

Details

These parameters should be specified:

- x-axis 1st column: The names of the different institutions
- y-axis 2nd column: The value to show completeness

Note

The ggplot2 package is required to run this function

Source

hfdata is a sample data which does not derive from a real data

Examples

# basic usage
library("rreg")
regrad(data = hfdata)
regrad(data = hfdata, title = "Plot title", long = TRUE)
regrad(hfdata, y = case1, title="Plot title", size=10, col1="blue", col2="green", col3="yellow")

---

**rreg**  **rreg package**

Description

Data visualization for Norwegian Health Quality Registries with R. This package will assist and standardize the visualization of data from the Norwegian Health Quality Registries. The standardization is based on the requirement specified by the Nasjonalt servicemiljø for medisinske kvalitetsregistre.

Author(s)

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yrdata is sample data for trends

Description

yrdata is just a sample data to use in example for "regline" function.

Usage

yrdata

Format

yrdata consist of these variables:

- year: List of different years
- var: Variable to be grouped
- N: Number of n for each group
- sum: Total for each year
- pros: Percentage for each group
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