Package ‘likert’

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likert-package

Description

Likert Analysis and Visualization

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abs_formatter

Description

This will print the absolute value for labeling on axis. Usefull for stacked bar plots where negative values are not negative percentages but represent negative groups.

Usage

abs_formatter(x)
align.plots

Arguments

x value to be reformatted.

Value

the absolute value of x.

align.plots

Adapted from ggExtra package which is no longer available. This is related to an experimental mlpsa plot that will combine the circular plot along with the two individual distributions.

Description

Adapted from ggExtra package which is no longer available. This is related to an experimental mlpsa plot that will combine the circular plot along with the two individual distributions.

Usage

### S3 method for class 'plots'
align(gl, ...)

Arguments

gl grid.layout
...
graphic elements to combine.

References

http://groups.google.com/group/ggplot2/browse_thread/thread/1b859d6b4b441c90 http://ggextra.googlecode.com/svn/trunk/R/align.r

gap

Fictitious dataset with importance and satisfaction results across five different offices.

Description

This data set is used in the GapAnalysis demo and is used to demonstrate how the likert package handles a gap analysis.

Format

a data frame with 68 observations of 11 variables.
label_wrap_mod  
Wrap label text.

Description
Wrap label text.

Usage
label_wrap_mod(value, width = 25)

Arguments
value  vector (converted using as.character) to be wrapped.
width  the maximum width of each line in characters.

Adapted from https://github.com/hadley/ggplot2/wiki/labeller

likert  
Analyze Likert type items.

Description
This function will provide various statistics about a set of likert items. The resulting object will have the following items:

Usage
likert(items, summary, grouping = NULL, importance, nlevels = length(levels(items[, 1])))

Arguments
items  data frame containing the likert based items. The variables in the data frame should be factors.
summary  a pre-summarized data frame. The first column must be the items and the remaining columns are the levels (e.g. strongly disagree, disagree, etc).

(grouping) (optional) should the results be summarized by the given grouping variable.
importance  a data frame of the same dimensions as items containing an importance rating for each item. The order of columns should match and the names from items will be used.

nlevels  number of possible levels. Only necessary if there are missing levels.
### likert.bar.plot

**Bar Plot for Likert Items.**

#### Description

Bar plot for the results of `likert`.

#### Usage

```r
likert.bar.plot(likert, low.color = "#D8B365", high.color = "#5AB4AC",
neutral.color = "grey90", neutral.color.ramp = "white",
plot.percent.low = TRUE, plot.percent.high = TRUE,
plot.percent.neutral = TRUE, plot.percents = FALSE, text.size = 3,
text.color = "black", centered = TRUE, center = (likert$nlevels - 1)/2 +
1, include.center = TRUE, ordered = TRUE,
wrap = ifelse(is.null(likert$grouping), 50, 100), wrap.grouping = 50,
legend = "Response", legend.position = "bottom", panel.arrange = "v",
panel.strip.color = "#F0F0F0", group.order, ...)
```
Arguments

likert object of type likert.
low.color color for low values.
high.color color for high values.
neutral.color color for middle values (if odd number of levels).
neutral.color.ramp second color used when calling colorRamp with low.color and high.color to define the color palettes.
plot.percent.low whether to plot low percentages.
plot.percent.high whether to plot high percentages.
plot.percent.neutral whether to plot neutral percentages.
plot.percents whether to label each category/bar.
text.size size of text attributes.
text.color color of text attributes.
centered if true, the bar plot will be centered around zero such that the lower half of levels will be negative.
center specifies which level should be treated as the center. For example, center = 3 would use the third level as the center whereas center = 3.5 would indicate no specific level is the center but <= 3 are low levels and >= 4 are high levels (i.e. used for forced choice items or those without a neutral option). This also influences where the color breaks from low to high.
include.center if TRUE, include the center level in the plot otherwise the center will be excluded.
ordered reorder items from high to low.
wrap width to wrap label text for item labels
wrap.grouping width to wrap label text for group labels.
legend title for the legend.
legend.position the position for the legend ("left", "right", "bottom", "top", or two-element numeric vector).
panel.arrange how panels for grouped likert items should be arrange. Possible values are v (vertical, the default), h (horizontal), and NULL (auto fill horizontal and vertical)
panel.strip.color the background color for panel labels.
group.order the order in which groups (for grouped items) or items (for non-grouped items) should be plotted.
... currently unused.
likert.density.plot

See Also

plot.likert
likert.heat.plot
likert.bar.plot
likert.density.plot

likert.density.plot     Creates a density plot for likert items.

Description

This function will create a visualization that treats the likert items as a continuous variable.

Usage

likert.density.plot(likert, facet = TRUE, bw = 0.5, legend, ...)

Arguments

likert     object of type likert.
facet      for non-grouped items, should each density distribution be plotted in a separate facet.
bw         the smoothing bandwidth. This is often set to the standard deviation but this is often inadequate for Likert type items. The value of 0.5 is used since the difference between any two adjacent levels is one.
legend     title for the legend.
...        parameters passed to density.

See Also

plot.likert
likert.histogram.plot

Description

Internal method.

Usage

likert.histogram.plot(likert, low.color = "white", high.color = "blue",
                    text.color = "black", text.size = 4, wrap = 50, ...)

Arguments

likert object of type likert.
low.color color for low values.
high.color color for high values.
text.color color of text attributes.
text.size size of text attributes.
warp width to wrap label text for non-grouped likert objects.
... currently unused.

See Also

plot.likert
likert.bar.plot

likert.histogram.plot

Histogram of number of responses.

Description

Plots a histogram of the number of responses for each item and group (if specified). Negative values
(in maroon by default) indicate the number of missing values for that item and group.

Usage

likert.histogram.plot(l, xlab = "n", plot.missing = TRUE,
                      bar.color = "grey70", missing.bar.color = "maroon",
                      label.completed = "Completed", label.missing = "Missing",
                      legend.position = "bottom", wrap = ifelse(is.null(l$grouping), 50, 100),
                      order, group.order, panel.arrange = "v", panel.strip.color =="#F0F0F0",
                      text.size = 2.5, ...)
Arguments

Arguments:

1. **likert** - results of \texttt{likert}.
2. **xlab** - label used for the x-axis.
3. **plot.missing** - if TRUE, missing values will be plotted to the left of the x-axis.
4. **bar.color** - the bar color.
5. **missing.bar.color** - the color of the bar for missing values.
6. **label.completed** - the label to use in the legend representing the count of complete values.
7. **label.missing** - the label to use in the legend representing the count of missing values.
8. **legend.position** - the position for the legend ("left", "right", "bottom", "top", or two-element numeric vector).
9. **wrap** - width to wrap label text for item labels
10. **order** - the order of the items.
11. **group.order** - the order in which groups (for grouped items) or items (for non-grouped items) should be plotted.
12. **panel.arrange** - how panels for grouped likert items should be arranged. Possible values are \texttt{v} (vertical, the default), \texttt{h} (horizontal), and \texttt{NULL} (auto fill horizontal and vertical).
13. **panel.strip.color** - the background color for panel labels.
14. **text.size** - size of text attributes.
15. **...** - other ggplot2 parameters.

\textbf{Description}

Matrix plot (experimental)

\textbf{Usage}

\texttt{likert.matrix.plot(likert, nSample = nrow(likert$items), ...)}

\textbf{Arguments}

Arguments:

1. **likert** - results of \texttt{likert}.
2. **nSample** - random sample of all rows. This function may take a while to run with large datasets (including the pisaitems data). Plotting a random subsample allows for quicker development.
3. **...** - parameters passed to \texttt{pairs.ordered.categorical}.
Results from an administration of the Math Anxiety Scale Survey.

Description

A data frame of results of the Math Anxiety Scale Survey administered to 20 students in a statistics course. This data frame contains the original data and can be used to verify the pre-summarized procedures.

Format

data frame with 14 rows and 6 columns.

References


Pre-summarized results from an administration of the Math Anxiety Scale Survey.

Description

A data frame of pressummarized results of the Math Anxiety Scale Survey administered to 20 students in a statistics course.

Format

data frame with 14 rows and 6 columns.

References

**MathAnxietyGender**

Pre-summarized results from an administration of the Math Anxiety Scale Survey grouped by gender.

**Description**

A data frame of presummarized results of the Math Anxiety Scale Survey administered to 20 students in a statistics course grouped by gender.

**Format**

data frame with 28 rows and 7 columns.

**References**


**pisaitems**

Programme of International Student Assessment

**Description**

North American (i.e. Canada, Mexico, and United States) results from the 2009 Programme of International Student Assessment (PISA) as provided by the Organization for Economic Co-operation and Development (OECD). See [http://www.pisa.oecd.org/](http://www.pisa.oecd.org/) for more information including the code book.

**Format**

a data frame 66,690 observations of 81 variables from North America.

**Source**

Organization for Economic Co-operation and Development
Description

This is an implementation of the S3 plot generic function. Based upon the type parameter this function will call either `likert.bar.plot`, `likert.heat.plot`, or `likert.density.plot`. See the help pages for those functions for all the available parameters to customize the aesthetics of the figure. Although those functions can be plotted directly, we recommend call the generic plot function.

Usage

```r
## S3 method for class 'likert'
plot(x, type = c("bar", "heat", "density"),
     include.histogram = FALSE, panel.widths = c(3, 1), panel.arrange = "v",
     panel.strip.color = "#F0F0F0", legend.position = "bottom",
     panel.background = element_rect(size = 1, color = "grey70", fill = NA), ...)
```

Arguments

- `x` the likert items to plot
- `type` the type of plot to create. Current values are bar and heat.
- `include.histogram` if TRUE, a histogram of count of responses is also plotted.
- `panel.widths` if `include.histogram` = TRUE, this vector of length two specifies the ratio of the left and right panels.
- `panel.arrange` how panels for grouped likert items should be arrange. Possible values are `v` (vertical, the default), `h` (horizontal), and NULL (auto fill horizontal and vertical)
- `panel.strip.color` the background color for panel labels.
- `legend.position` the position for the legend ("left", "right", "bottom", "top", or two-element numeric vector).
- `panel.background` define background of the plot. See `theme`.
- `...` other parameters passed passed to `likert.bar.plot` or `likert.heat.plot`.

See Also

- `likert.bar.plot`
- `likert.heat.plot`
- `likert.density.plot`
- `likert.histogram.plot`
plot.likert.gap

---

**plot.likert.gap**

Plots a set of likert items.

---

**Description**

This is an implementation of the S3 plot generic function. Based upon the type parameter this function will call either `likert.bar.plot`, `likert.heat.plot`, or `likert.density.plot`. See the help pages for those functions for all the available parameters to customize the aesthetics of the figure. Although those functions can be plotted directly, we recommend call the generic plot function.

**Usage**

```r
## S3 method for class 'likert.gap'
plot(x, type = c("bar", "density"),
     include.histogram = FALSE, panel.widths = c(3, 1), panel.arrange = "v",
     panel.strip.color = "#F0F0F0", legend.position = "bottom",
     panel.background = element_rect(size = 1, color = "grey70", fill = NA),
     satisfaction.label = "Satisfaction", importance.label = "Importance",
     legend, ...)  
```

**Arguments**

- `x` the likert items to plot
- `type` the type of plot to create. Current values are bar and heat.
- `include.histogram` if TRUE, a histogram of count of responses is also plotted.
- `panel.widths` if `include.histogram=TRUE`, this vector of length two specifies the ratio of the left and right panels.
- `panel.arrange` how panels for grouped likert items should be arrange. Possible values are `v` (vertical, the default), `h` (horizontal), and `NULL` (auto fill horizontal and vertical)
- `panel.strip.color` the background color for panel labels.
- `legend.position` the position for the legend ("left", "right", "bottom", "top", or two-element numeric vector).
- `panel.background` define background of the plot. See theme.
- `satisfaction.label` label used for satisfaction items.
- `importance.label` label used for importance items.
- `legend` title for the legend.
- `...` other parameters passed passed to `likert.bar.plot` or `likert.heat.plot`. 

See Also

likert.bar.plot
likert.heat.plot
likert.density.plot
likert.histogram.plot

print.likert

Prints results table.

Description

Prints results table.

Usage

## S3 method for class 'likert'
print(x, ...)

Arguments

x       the likert class to print.
...

...    parameters passed to print.data.frame.

print.likert.bar.plot

Print method for likert.bar.plot. The primary purpose is to suppress the "Stacking not well defined when ymin != 0" warning printed by ggplot2 for bar plots that have negative bars (i.e. the centered plots).

Description

Print method for likert.bar.plot. The primary purpose is to suppress the "Stacking not well defined when ymin != 0" warning printed by ggplot2 for bar plots that have negative bars (i.e. the centered plots).

Usage

## S3 method for class 'likert.bar.plot'
print(x, ...)

Arguments

x       a plot from likert.bar.plot.
...

...    other parameters passed to ggplot2.
print.likert.gap  Prints results table.

Description
Prints results table.

Usage

## S3 method for class 'likert.gap'
print(x, ...)

Arguments

x  the likert class to print.
...
parameters passed to print.data.frame.

print.likert.heat.plot

Print method for likert.heat.plot.

Description
Print method for likert.heat.plot.

Usage

## S3 method for class 'likert.heat.plot'
print(p, ...)

Arguments

p  a plot from likert.heat.plot.
...
other parameters passed to ggplot2.
print.xlikert  
Prints the results of xtable likert.

Description
Print method for xtable likert.

Usage

## S3 method for class 'xlikert'
print(x, tabular.environment = "longtable",
      floating = FALSE, ...)

Arguments

x                        results of xtable likert.
tabular.environment     see print.xtable.
floating                 see print.xtable.
...                      other parameters passed to print.xtable

recode                  Recode a vector.

Description
This utility function will recode values from an original character or factor vector with new values.

Usage

recode(x, from, to, to.class = NULL)

Arguments

x                        the vector whose values will be recoded.
from                     the old values in x to be recoded.
to                       the new values.
to.class                  an 'as.' function representing the desired vector type (i.e. as.character, as.numeric, as.logical, as.numeric).

Value

a vector with same length of x with recoded values.
**reverse.levels**

Reverse the levels of a factor.

**Usage**

reverse.levels(x)

**Arguments**

- **x**: a factor or a data.frame of factors whose levels will be reverse coded.

**Examples**

```r
mylevels <- c('Strongly Disagree', 'Disagree', 'Neither', 'Agree', 'Strongly Agree')
test <- factor(sample(mylevels[1:5], 10, replace=TRUE))
cbind(test, as.integer(test), as.integer(reverse.levels(test)))
```

**shinyLikert**

Shiny App for the likert package.

**Description**

This will start a shiny app included with the package to show many of the features available in the likert package.

**Usage**

shinyLikert()

**References**

http://rstudio.com/shiny
The `summary` function returns a data frame that provides additional information. It contains 'Item' and 'Group' columns similar to the results data frame as well as a column 'low' corresponding to the sum of levels below neutral, a column 'high' corresponding to the sum of levels above neutral, and columns 'mean' and 'sd' corresponding to the mean and standard deviation, respectively, of the results. The numeric values are determined by `as.numeric` which will use the values of the factors.

### Usage

```r
## S3 method for class 'likert'
summary(object, center = (object$nlevels - 1)/2 + 1,
       ordered = TRUE, ...)
```

### Arguments

- `object`: the likert class to summarize.
- `center`: specifies which level should be treated as the center. For example, `center = 3` would use the third level as the center whereas `center = 3.5` would indicate no specific level is the center but `<= 3` are low levels and `>= 4` are high levels (i.e. used for forced choice items or those without a neutral option).
- `ordered`: whether the results should be ordered. Currently unsupported for grouped analysis.
- `...`: currently unused.
## Arguments

- **object**: the likert class to summarize.
- **...**: parameters passed to `summary.likert`

## Value

A list with two data frames with summarized data for satisfaction and importance results separately.

---

**xtable.likert**

Prints a LaTeX table of the likert items.

---

### Description

Create a LaTeX or HTML table of the `likert` results.

### Usage

```r
## S3 method for class 'likert'
xtable(x, caption = NULL, label = NULL, align = NULL,
digits = NULL, display = NULL, include.n = TRUE, include.mean = TRUE,
include.sd = TRUE, include.low = TRUE, include.neutral = (x$nlevels%%2
!= 0), include.high = TRUE, include.levels = TRUE,
include.missing = TRUE, center = (x$nlevels - 1)/2 + 1, ordered = TRUE,
...)
```

### Arguments

- **x**: likert class object.
- **caption**: the table caption.
- **label**: the table label.
- **align**: column alignments.
- **digits**: number of digits to use for numeric columns.
- **display**: column formats.
- **include.n**: option to include n
- **include.mean**: option to include mean
- **include.sd**: option to include sd
- **include.low**: option to include low
- **include.neutral**: option to include neutral
- **include.high**: option to include high
- **include.levels**: option to include levels
- **include.missing**: option to include missing levels.
center specifies which level should be treated as the center. For example, center = 3 would use the third level as the center whereas center = 3.5 would indicate no specific level is the center but <= 3 are low levels and >= 4 are high levels (i.e. used for forced choice items or those without a neutral option). This also influences which levels are summarized in the low and high groups.

ordered whether the results should be ordered. See summary.likert

... other parameters passed to xtable.

See Also

xtable, print.xtable
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