Package 'LikertEZ'

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Title Easy Analysis and Visualization of Likert Scale Data

Version 0.1.0

Description Provides functions for summarizing, visualizing, and analyzing Likert-scale survey data. Includes support for computing descriptive statistics, Relative Importance Index (RII), reliability analysis (Cronbach's Alpha), and response distribution plots.

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Imports ggplot2, stats, utils

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Contents

cronbach_alpha *Cronbach Alpha for a set of ordinal items*

Description

This function calculates the Cronbach Alpha for a set of ordinal items to assess their reliability or internal consistency.

Usage

```
cronbach_alpha(data)
```

Arguments

data	A data.frame with the ordinal items. Each column represents an item.

Value

The Cronbach alpha value as a numeric value between 0 and 1.

plot_item *Barplot with RII annotation*

Description

This function generates a barplot showing the distribution of responses for a single item, with the Relative Importance Index (RII) annotated.

Usage

```
plot_item(responses, max_scale = 5, scale_labels = NULL)
```

Arguments

responses	Numeric vector of ordinal responses.
max_scale	Max Likert scale value (default: 5).
scale_labels	Optional vector of labels for each scale point.

Value

A ggplot2 bar plot with RII annotation.

Examples

```
responses <- c(1, 2, 3, 4, 5, 3, 2, 1, NA)
plot_item(responses)
```

rank_items *Rank items by RII or Mean*

Description

This function ranks items in the data based on either the Relative Importance Index (RII) or the mean of responses.

Usage

```
rank_items(data, method = "rii", max_scale = 5, n = 5, top = TRUE)
```

Arguments

data	A data.frame of ordinal items.
method	Method to rank items. Either "rii" (for Relative Importance Index) or "mean" (for mean response).
max_scale	Max Likert scale value (default: 5).
n	Number of top items to return (default: 5).
top	Logical. If TRUE, returns the top items, otherwise returns the bottom items (default: TRUE).

Value

A vector of ranked items.

rii_weighted *Weighted RII Calculation*

Description

This function computes the weighted Relative Importance Index (RII) for a set of ordinal responses with associated weights.

Usage

```
rii_weighted(responses, weights, max_scale = 5)
```

Arguments

responses	Numeric vector of ordinal responses.
weights	Numeric vector of weights for each response.
max_scale	Max Likert scale value (default: 5).

Value

The weighted RII as a numeric value.

summarize *Summarize a Likert item*

Description

This function calculates summary statistics for a Likert item, including mean, median, mode, and performs a chi-square test.

Usage

```
summarize(responses, max_scale = 5, exact = TRUE, B = 10000, tidy = FALSE)
```

Arguments

responses	Numeric vector of responses.
max_scale	The maximum scale value.
exact	If TRUE, use exact Monte Carlo method.
B	Number of simulations for Monte Carlo.
tidy	If TRUE, returns a tidy data frame.

Value

A list or data.frame with summary statistics.

Examples

```
responses <- c(1, 2, 3, 4, 5, 4, 3, 2, NA)
summarize(responses)
```

summary_table_all *Create a tidy summary table of all items*

Description

This function generates a tidy summary table for all ordinal items in a data.frame. The table includes statistics such as mean, median, standard deviation, counts, and percentages.

Usage

```
summary_table_all(data, max_scale = 5, scale_labels = NULL, decimals = 2)
```

Arguments

data	A data.frame of ordinal items.
max_scale	Max value on the Likert scale (default: 5).
scale_labels	Optional vector of labels for each scale point.
decimals	Number of decimal places for percentages (default: 2).

Value

A data.frame with summary statistics for all items.

Examples

```
dat <- data.frame(Q1 = c(1, 2, 3, 4, 5), Q2 = c(2, 2, 3, 4, NA))
summary_table_all(dat)
```

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