

Package ‘RIFanalysis’

August 8, 2026

Title Relative Importance Factor Analysis

Version 0.9.1

Description Tools for estimating, comparing, and visualizing Relative Importance Factor (RIF) indices based on rank-frequency distributions and discrete power-law models. The package provides reproducible workflows for data preparation, model fitting, goodness-of-fit assessment, bootstrap inference, and publication-ready outputs. The implemented methodology is described in Llinas et al. (2026) [doi:10.3390/math14060966](https://doi.org/10.3390/math14060966).

License MIT + file LICENSE

Encoding UTF-8

RoxygenNote 8.0.0

Depends R (>= 4.1.0)

Imports checkmate, dplyr, ggplot2, ggraph, cowplot, igraph, openxlsx, poweRlaw (>= 0.70.0), rlang, ggrepel, stringr

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

NeedsCompilation no

Author Humberto J. Llinás M. [aut, cre],
Humberto J. Llinás S. [aut],
Javier A. De la Hoz M. [aut],
Brian J. Llinás M. [aut],
José J. Padilla [aut]

Maintainer Humberto J. Llinás M. <lhumberto@uninorte.edu.co>

Repository CRAN

Date/Publication 2026-08-08 14:30:10 UTC

Contents

data_by_type	3
------------------------	---

data_no_type	3
export_rif_excel	4
export_rif_plots	4
export_rif_visuals	5
import_rif_excel	7
plot_matrix	8
plot_network	10
plot_zipf	14
print.rif_analysis	16
print.rif_powerlaw_fit	16
print.rif_results	17
print.rif_tbl	17
print.rif_zipf_tbl	18
rif_analysis	18
rif_compare_results	19
rif_compute	19
rif_compute_results	20
rif_fit_bootstrap	21
rif_fit_mle_ks	21
rif_fit_powerlaw	22
rif_labels	23
rif_layer_edges	23
rif_layer_edge_labels	24
rif_layer_matrix	25
rif_layer_network	27
rif_layer_nodes	31
rif_legend	31
rif_matrix_labels	32
rif_matrix_layout	33
rif_network_labels	34
rif_network_layout	35
rif_panel	36
rif_plot	36
rif_prepare	37
rif_render	38
rif_theme	38
rif_workflow_z1	39
rif_workflow_z2	40
rif_workflow_z3	42
rif_zipf	43

data_by_type*Example RIF datasets with a type variable*

Description

A named list with two example data frames for workflows that use a type variable. Each data frame contains type labels, factor labels, and observed counts.

Usage

```
data(data_by_type)
```

Format

A list with two data frames:

data_gr1 Group 1 data with columns type1, factor1, factor_small1, and count1.

data_gr2 Group 2 data with columns type2, factor2, factor_small2, and count2.

data_no_type*Example RIF datasets without a type variable*

Description

A named list with two example data frames for workflows that do not use a type variable. Each data frame contains factor labels and observed counts.

Usage

```
data(data_no_type)
```

Format

A list with two data frames:

data_gr1 Group 1 data with columns factor, factor_small, and count.

data_gr2 Group 2 data with columns factor, factor_small, and count.

export_rif_excel	<i>Export RIF results to Excel</i>
------------------	------------------------------------

Description

Exports RIF results, comparative RIF results, or Zipf tables to an Excel workbook. Zipf tables are exported with one consolidated ZIPF_ALL sheet and one additional sheet per type.

Usage

```
export_rif_excel(x, file, overwrite = TRUE)
```

Arguments

x	An object of class rif_results, rif_compare_results, or rif_zipf_tbl.
file	Output Excel file path.
overwrite	Logical. Should existing files be overwritten?

Value

The output file path, invisibly.

export_rif_plots	<i>Export RIF plots</i>
------------------	-------------------------

Description

Saves one or more RIF plots as PNG and/or PDF files.

Usage

```
export_rif_plots(
  plots,
  output_dir,
  file_prefix = "rif",
  formats = "png",
  width = 8,
  height = 6,
  units = "in",
  dpi = 300,
  overwrite = TRUE
)
```

Arguments

plots	A ggplot object or a named list of ggplot objects.
output_dir	Output directory.
file_prefix	Prefix used for output filenames.
formats	Output format or formats. Options are "png" and "pdf".
width	Plot width.
height	Plot height.
units	Units for width and height.
dpi	Resolution used for PNG output.
overwrite	Logical. Should existing files be overwritten?

Value

A character vector with the output file paths, invisibly.

export_rif_visuals	<i>Export RIF matrix and network visualizations</i>
--------------------	---

Description

Builds and exports RIF matrix and network plots from `rif_results` or `rif_compare_results` objects. File names are generated automatically from the selected group tag, type, method tag, plot kind, and scope.

Usage

```
export_rif_visuals(
  x,
  output_dir,
  scope = c("auto", "individual", "combined", "both"),
  plot_types = c("matrix", "network"),
  methods = NULL,
  types = NULL,
  groups = NULL,
  formats = "png",
  file_prefix = "rif",
  matrix_width = 10,
  matrix_height = 7.5,
  network_width = 10,
  network_height = 7.5,
  combined_matrix_width = 16,
  combined_matrix_height = 7.2,
  combined_network_width = 16,
  combined_network_height = 7.6,
```

```

units = "in",
dpi = 300,
overwrite = TRUE,
save = TRUE,
matrix_args = list(),
network_args = list()
)

```

Arguments

x	An object of class <code>rif_results</code> or <code>rif_compare_results</code> .
output_dir	Output directory.
scope	Plot scope. "auto" uses "individual" for <code>rif_results</code> objects and "both" for <code>rif_compare_results</code> objects. "individual" creates one plot per group, type, and method. "combined" creates one comparative panel per type and method with one subplot per group. "both" creates individual plots and comparative panels. "combined" and "both" are only available for <code>rif_compare_results</code> objects.
plot_types	Plot types to export. Options are "matrix" and "network".
methods	Optional methods to include. If NULL, all methods in x are used.
types	Optional types to include. If NULL, all types in x are used.
groups	Optional groups to include for individual plots. If NULL, all groups in x are used.
formats	Output format or formats. Options are "png" and "pdf".
file_prefix	Prefix used for output file names.
matrix_width	Matrix plot width.
matrix_height	Matrix plot height.
network_width	Network plot width.
network_height	Network plot height.
combined_matrix_width	Combined matrix panel width.
combined_matrix_height	Combined matrix panel height.
combined_network_width	Combined network panel width.
combined_network_height	Combined network panel height.
units	Units for plot width and height.
dpi	Resolution used for PNG output.
overwrite	Logical. Should existing files be overwritten?
save	Logical. Save plots to disk?
matrix_args	Named list of matrix-layer arguments. Common entries are <code>label_col</code> , <code>label_size</code> , <code>axis_text_size</code> , <code>axis_title_size</code> , <code>matrix_margin_top</code> , <code>matrix_margin_right</code> , <code>matrix_margin_bottom</code> , <code>matrix_margin_left</code> , <code>legend_title_size</code> , and <code>legend_label_size</code> . Arguments are passed to <code>rif_layer_matrix()</code> and <code>rif_legend()</code> as appropriate.

`network_args` Named list of network-layer arguments. Common entries are `label_col`, `factor_name_col`, `node_size_range`, `node_label_size`, `factor_name_size`, `wrap_width`, `factor_name_wrap_width`, `coord_x_pad`, `coord_y_pad`, `network_margin_top`, `network_margin_right`, `network_margin_bottom`, `network_margin_left`, and `legend_label_size`. Arguments are passed to `rif_layer_network()` and `rif_legend()` as appropriate.

Details

`export_rif_visuals()` builds plots through the layered RIF plotting API. Individual plots are created from `rif_plot()` objects, and comparative plots are created from `rif_panel()` objects. Matrix arguments control the matrix layer; network arguments control the network layer. In network plots, `wrap_width` controls the short node labels from `label_col`, while `factor_name_wrap_width` controls the longer external factor names from `factor_name_col`.

Value

A list of class `rif_visual_export` with the plot plan, plot objects, and exported file paths.

<code>import_rif_excel</code>	<i>Import RIF results from Excel</i>
-------------------------------	--------------------------------------

Description

Imports RIF computation results, comparative RIF results, or Zipf tables from an Excel workbook created with `export_rif_excel()`.

Usage

```
import_rif_excel(file)
```

Arguments

`file` Input Excel file path.

Value

An object of class `rif_results`, `rif_compare_results`, or `rif_zipf_tbl`.

plot_matrix

Plot a RIF matrix

Description

Creates a lower-triangular matrix of pairwise Relative Importance Factor (RIF) values from RIF result tables.

Usage

```
plot_matrix(
  data,
  method = c("MLE-KS", "Bootstrapping"),
  group = NULL,
  type = NULL,
  label_col = "Factor_label",
  factor_s_label_col = NULL,
  factor_r_label_col = NULL,
  factor_s_col = "factor_s",
  factor_r_col = "factor_r",
  rif_col = "RIF",
  title = NULL,
  subtitle = NULL,
  caption = NULL,
  x_title = "s: Concept at rank s",
  y_title = "r: Concept at rank r",
  legend_position = "right",
  label_size = 3.8,
  axis_text_size = 10,
  axis_title_size = 12,
  title_size = 16,
  subtitle_size = 12,
  caption_size = 9,
  matrix_margin_top = 10,
  matrix_margin_right = 5,
  matrix_margin_bottom = 10,
  matrix_margin_left = 15,
  title_margin_bottom = 10,
  x_title_margin_top = 12,
  y_title_margin_right = 0,
  legend_title_size = NULL,
  legend_label_size = 10,
  show_matrix_factor_names = FALSE,
  factor_s_name_col = "factor_s_name",
  factor_r_name_col = "factor_r_name",
  matrix_factor_name_wrap_width = 14
)
```

Arguments

data	An object of class <code>rif_result_tbl</code> , <code>rif_results</code> , or <code>rif_compare_results</code> . A data frame with pairwise columns can also be used.
method	Estimation method used when data contains multiple methods. Options are "MLE-KS" and "Bootstrapping".
group	Optional group value used to filter data.
type	Optional type value used to filter data.
label_col	Default column used as factor labels on both matrix axes when building the matrix from a RIF result table. Use a compact label column, such as "Factor_label_small", when axis labels need to stay short.
factor_s_label_col	Optional column used for labels on the rank <i>s</i> axis when building the matrix from a RIF result table. If NULL, <code>label_col</code> is used.
factor_r_label_col	Optional column used for labels on the rank <i>r</i> axis when building the matrix from a RIF result table. If NULL, <code>label_col</code> is used.
factor_s_col	Column with the factor at rank <i>s</i> for pairwise data.
factor_r_col	Column with the factor at rank <i>r</i> for pairwise data.
rif_col	Column with RIF values.
title	Plot title.
subtitle	Plot subtitle.
caption	Plot caption.
x_title	Title for the x-axis.
y_title	Title for the y-axis.
legend_position	Legend position.
label_size	Size of RIF labels inside cells.
axis_text_size	Size of axis text.
axis_title_size	Size of axis titles.
title_size	Size of plot title.
subtitle_size	Size of plot subtitle.
caption_size	Size of plot caption.
matrix_margin_top	Top plot margin.
matrix_margin_right	Right plot margin.
matrix_margin_bottom	Bottom plot margin.
matrix_margin_left	Left plot margin.

`title_margin_bottom`
 Bottom margin for the title.
`x_title_margin_top`
 Top margin for the x-axis title.
`y_title_margin_right`
 Right margin for the y-axis title.
`legend_title_size`
 Size of legend title.
`legend_label_size`
 Size of legend labels.
`show_matrix_factor_names`
 Logical. Show longer factor names in axis tick labels?
`factor_s_name_col`
 Optional source-factor long-name column.
`factor_r_name_col`
 Optional target-factor long-name column.
`matrix_factor_name_wrap_width`
 Wrap width for longer factor names and compact axis tick labels.

Details

Cells are shown on and below the main diagonal, with rank r on the y-axis and rank s on the x-axis. `plot_matrix()` accepts either ranked RIF result tables or already pairwise data. Internal helper functions build and format the pairwise data; these helpers are intentionally not exported. The layered API equivalent is `rif_plot()` followed by `rif_layer_matrix()`, `rif_legend()`, and `rif_render()`.

Value

A ggplot object.

<code>plot_network</code>	<i>Plot a RIF network</i>
---------------------------	---------------------------

Description

Creates a directed network of pairwise Relative Importance Factor (RIF) values. The network uses RIF categories for edge colors, RIF values for edge width, and rank values for node size.

Usage

```
plot_network(
  data,
  method = c("MLE-KS", "Bootstrapping"),
  group = NULL,
  type = NULL,
```

```
label_col = "Factor_label",
factor_name_col = "Factor_small",
from_col = "factor_s",
to_col = "factor_r",
rif_col = "RIF",
rank_from_col = "rank_s",
rank_to_col = "rank_r",
title = NULL,
subtitle = NULL,
caption = NULL,
title_size = 16,
subtitle_size = 12,
caption_size = 9,
title_margin_bottom = 0,
remove_self_loops = TRUE,
node_size_range = c(5, 24),
edge_width_range = c(0.6, 4),
node_color = "#9BE7A1",
show_edge_labels = TRUE,
edge_label_size = 3.5,
rotate_edge_labels = TRUE,
edge_label_rotation_mode = c("readable", "direction"),
edge_label_position = 0.58,
edge_label_offset = 0.04,
show_manual_legend = FALSE,
show_node_labels = TRUE,
node_label_size = 3.7,
show_network_factor_names = TRUE,
factor_names = NULL,
factor_name_s_col = NULL,
factor_name_r_col = NULL,
factor_name_size = 4,
factor_name_offset = 0.15,
factor_name_wrap_width = 14,
factor_name_fontface = "bold",
factor_name_color = "black",
factor_name_nudge = NULL,
wrap_labels = TRUE,
wrap_width = 10,
label_replacements = NULL,
node_adjustments = NULL,
label_nudge = NULL,
edge_label_nudge = NULL,
coord_x_pad = 0.35,
coord_y_pad = 0.15,
network_margin_top = 10,
network_margin_right = 5,
network_margin_bottom = 10,
```

```

network_margin_left = 15,
manual_legend_height = 0.14
)

```

Arguments

data	An object of class <code>rif_result_tbl</code> , <code>rif_results</code> , or <code>rif_compare_results</code> . A data frame with pairwise columns can also be used.
method	Estimation method used when data contains multiple methods. Options are "MLE-KS" and "Bootstrapping".
group	Optional group value used to filter data.
type	Optional type value used to filter data.
label_col	Column used as short node labels when building the network from a RIF result table. These labels are drawn near the nodes and are wrapped with <code>wrap_width</code> .
factor_name_col	Optional column used for longer external factor names when building pairwise data from a RIF result table. These labels are drawn outside the nodes and are wrapped with <code>factor_name_wrap_width</code> .
from_col	Column with the source factor for pairwise data.
to_col	Column with the target factor for pairwise data.
rif_col	Column with RIF values.
rank_from_col	Optional source rank column for pairwise data.
rank_to_col	Optional target rank column for pairwise data.
title	Plot title.
subtitle	Plot subtitle.
caption	Plot caption.
title_size	Size of plot title.
subtitle_size	Size of plot subtitle.
caption_size	Size of plot caption.
title_margin_bottom	Bottom margin for the title.
remove_self_loops	Logical. Remove links where source and target are the same node?
node_size_range	Numeric range for node sizes. The range is reversed so higher-ranked factors are drawn larger.
edge_width_range	Numeric range for edge widths. Increase the second value for thicker high-RIF links.
node_color	Node color.
show_edge_labels	Logical. Show RIF values on edges?

edge_label_size	Edge label size.
rotate_edge_labels	Logical. Rotate edge labels with edge direction?
edge_label_rotation_mode	Rotation mode for edge labels. Options are "readable" and "direction".
edge_label_position	Relative position of labels along each edge.
edge_label_offset	Perpendicular offset for edge labels.
show_manual_legend	Logical. Add the manual legend for rank, edge strength, and RIF categories?
show_node_labels	Logical. Show node labels?
node_label_size	Node label size.
show_network_factor_names	Logical. Show longer factor names outside the network? The coordinate limits include these external labels to avoid clipping.
factor_names	Optional named character vector with longer factor names.
factor_name_s_col	Optional source-factor long-name column.
factor_name_r_col	Optional target-factor long-name column.
factor_name_size	Factor name label size.
factor_name_offset	Distance from each node to its longer factor name.
factor_name_wrap_width	Wrap width for longer external factor names from factor_name_col.
factor_name_fontface	Font face for longer factor names.
factor_name_color	Color for longer factor names.
factor_name_nudge	Named list with x/y nudges for longer factor names.
wrap_labels	Logical. Wrap node labels?
wrap_width	Wrap width for short node labels from label_col.
label_replacements	Optional named character vector with replacement node labels.
node_adjustments	Named list with x/y adjustments for node positions.
label_nudge	Named list with x/y nudges for node labels.

edge_label_nudge
Named list with x/y nudges for edge labels. Names must use the "from->to" form.

coord_x_pad
Extra x padding around the network and external labels.

coord_y_pad
Extra y padding around the network and external labels.

network_margin_top
Top plot margin.

network_margin_right
Right plot margin.

network_margin_bottom
Bottom plot margin.

network_margin_left
Left plot margin.

manual_legend_height
Relative height of the manual legend.

Details

plot_network() accepts either ranked RIF result tables or already pairwise data. Internal helper functions build the pairwise edges and node metadata; these helpers are intentionally not exported.

Value

A ggplot object or a cowplot object when show_manual_legend = TRUE.

plot_zipf	<i>Plot observed and theoretical Zipf distributions</i>
-----------	---

Description

Creates a Zipf plot comparing observed counts with theoretical Zipf counts computed by rif_zipf(). Labels can optionally be added.

Usage

```
plot_zipf(
  x,
  group = NULL,
  type = NULL,
  label_col = NULL,
  title = "Observed and theoretical Zipf distributions",
  x_title = "Rank",
  y_title = "Count",
  legend_title = "Distribution:",
  label_size = 3.5,
  label_nudge_x = 0,
```

```

    label_nudge_y = 0,
    label_force = 1,
    show_observed = TRUE,
    show_theoretical = TRUE
  )

```

Arguments

<code>x</code>	An object of class <code>rif_zipf_tbl</code> , usually created with <code>rif_zipf()</code> .
<code>group</code>	Optional group value used to filter <code>x</code> .
<code>type</code>	Optional type value used to filter <code>x</code> .
<code>label_col</code>	Optional column used for labels. Use <code>NULL</code> for no labels.
<code>title</code>	Plot title.
<code>x_title</code>	X-axis title.
<code>y_title</code>	Y-axis title.
<code>legend_title</code>	Legend title.
<code>label_size</code>	Label size.
<code>label_nudge_x</code>	Horizontal adjustment for labels.
<code>label_nudge_y</code>	Vertical adjustment for labels.
<code>label_force</code>	Repulsion force used by <code>ggrepel</code> .
<code>show_observed</code>	Logical. Show observed counts.
<code>show_theoretical</code>	Logical. Show theoretical Zipf counts.

Value

A ggplot object.

Examples

```

df <- data.frame(
  Factor = c("A", "B", "C", "D", "E", "F"),
  Count = c(100, 60, 35, 20, 12, 8)
)

rif_data <- rif_prepare(
  data = df,
  factor_col = "Factor",
  count_col = "Count",
  prefix = "T"
)

zipf_tbl <- rif_zipf(rif_data)

plot_zipf(zipf_tbl)

plot_zipf(

```

```

    zipf_tbl,
    label_col = "factor_label"
  )

```

```
print.rif_analysis
```

Print RIF analysis

Description

Prints a compact summary of a RIF analysis object.

Usage

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

Arguments

`x` Object of class `rif_analysis`.
`...` Additional arguments.

Value

`x`, invisibly.

```
print.rif_powerlaw_fit
```

Print RIF power-law fit

Description

Prints a compact summary of a RIF power-law fit.

Usage

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

Arguments

`x` Object of class `rif_powerlaw_fit`.
`...` Additional arguments.

Value

`x`, invisibly.

print.rif_results	<i>Print RIF results</i>
-------------------	--------------------------

Description

Prints a compact summary of RIF result tables.

Usage

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

Arguments

x	Object of class rif_results.
...	Additional arguments.

Value

x, invisibly.

print.rif_tbl	<i>Print RIF data object</i>
---------------	------------------------------

Description

Prints a compact summary of prepared RIF data.

Usage

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

Arguments

x	An object of class rif_tbl.
...	Additional arguments.

Value

x, invisibly.

```
print.rif_zipf_tbl      Print RIF Zipf table
```

Description

Prints a compact summary of a RIF Zipf table.

Usage

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

Arguments

x	An object of class rif_zipf_tbl.
...	Additional arguments.

Value

x, invisibly.

```
rif_analysis      Run basic RIF analysis
```

Description

Fits the power-law model and bootstrap summaries for prepared RIF data. If the data contains multiple types, each type is fitted independently.

Usage

```
rif_analysis(
  data,
  no_of_sims = 1000,
  threads = 1,
  seed = 123,
  bootstrap_engine = c("powerLaw", "manual")
)
```

Arguments

data	An object of class rif_tbl.
no_of_sims	Number of bootstrap simulations.
threads	Number of threads for the bootstrap routine.
seed	Random seed.
bootstrap_engine	Bootstrap engine. Options are "powerLaw" and "manual".

Value

An object of class `rif_analysis`.

<code>rif_compare_results</code>	<i>Create comparative RIF results</i>
----------------------------------	---------------------------------------

Description

Creates comparative RIF tables from two `rif_compute_results()` objects for subsequent export, visualization, and analysis.

Usage

```
rif_compare_results(rif_results1, rif_results2)
```

Arguments

`rif_results1` An object of class `rif_results`.
`rif_results2` An object of class `rif_results`.

Value

An object of class `rif_compare_results`.

<code>rif_compute</code>	<i>Compute RIF values</i>
--------------------------	---------------------------

Description

Computes the Relative Importance Factor (RIF) table from a basic RIF analysis object, using the fitted alpha and xmin values for each type.

Usage

```
rif_compute(x, method = c("MLE-KS", "Bootstrapping"), digits = 3)
```

Arguments

`x` An object of class `rif_analysis`.
`method` Estimation method. Options are "MLE-KS" or "Bootstrapping".
`digits` Number of decimal places.

Value

An object of class `rif_result_tbl`.

Examples

```
df <- data.frame(
  Factor = c("A", "B", "C", "D", "E", "F"),
  Count = c(100, 60, 35, 20, 12, 8)
)

rif_data <- rif_prepare(
  data = df,
  factor_col = "Factor",
  count_col = "Count",
  prefix = "T"
)

res <- rif_analysis(
  data = rif_data,
  no_of_sims = 50,
  bootstrap_engine = "manual"
)

rif_compute(res, method = "MLE-KS")
```

rif_compute_results	<i>Compute RIF results for all methods</i>
---------------------	--

Description

Computes RIF tables for MLE-KS and Bootstrapping.

Usage

```
rif_compute_results(x, digits = 3)
```

Arguments

x	An object of class rif_analysis.
digits	Number of decimal places.

Value

An object of class rif_results.

rif_fit_bootstrap	<i>Bootstrap estimates for discrete power-law model</i>
-------------------	---

Description

Estimates bootstrap summaries for a discrete power-law model.

Usage

```
rif_fit_bootstrap(  
  counts,  
  model = NULL,  
  no_of_sims = 1000,  
  threads = 1,  
  seed = 123,  
  engine = c("powerLaw", "manual")  
)
```

Arguments

counts	Numeric vector of count values.
model	Optional fitted powerLaw::displ model.
no_of_sims	Number of bootstrap simulations.
threads	Number of threads.
seed	Random seed.
engine	Bootstrap engine. Options are "manual" and "powerLaw".

Value

A list with bootstrap table and raw bootstrap results.

rif_fit_mle_ks	<i>Fit discrete power-law model using MLE-KS</i>
----------------	--

Description

Fits a discrete power-law model and returns MLE-KS summary statistics.

Usage

```
rif_fit_mle_ks(counts)
```

Arguments

counts	Numeric vector of count values.
--------	---------------------------------

Value

A list with model, estimate, and summary table.

<code>rif_fit_powerlaw</code>	<i>Fit power-law model for RIF data</i>
-------------------------------	---

Description

Fits MLE-KS and bootstrap power-law summaries for RIF count data.

Usage

```
rif_fit_powerlaw(
  data,
  count_col = "count",
  group_col = "group",
  group = NULL,
  type_col = "type",
  type = NULL,
  no_of_sims = 1000,
  threads = 1,
  seed = 123,
  bootstrap_engine = c("powerlaw", "manual")
)
```

Arguments

<code>data</code>	A <code>rif_tbl</code> object or a data frame with a count column.
<code>count_col</code>	Count column name.
<code>group_col</code>	Optional group column name.
<code>group</code>	Optional group value.
<code>type_col</code>	Optional type column name.
<code>type</code>	Optional type value.
<code>no_of_sims</code>	Number of bootstrap simulations.
<code>threads</code>	Number of threads.
<code>seed</code>	Random seed.
<code>bootstrap_engine</code>	Bootstrap engine. Options are "powerlaw" and "manual".

Value

An object of class `rif_powerlaw_fit`.

<code>rif_labels</code>	<i>Add labels to a RIF plot object</i>
-------------------------	--

Description

Stores shared plot labels that can be used by later RIF plot layers.

Usage

```
rif_labels(x, title = NULL, subtitle = NULL, caption = NULL)
```

Arguments

<code>x</code>	A <code>rif_plot</code> object created with <code>rif_plot()</code> .
<code>title</code>	Plot title.
<code>subtitle</code>	Plot subtitle.
<code>caption</code>	Plot caption.

Value

A `rif_plot` object.

<code>rif_layer_edges</code>	<i>Configure network edges</i>
------------------------------	--------------------------------

Description

Updates edge settings for a stored network layer.

Usage

```
rif_layer_edges(x, width_range = NULL, width_by = NULL, color_by = NULL)
```

Arguments

<code>x</code>	A <code>rif_plot</code> or <code>rif_panel</code> object with a network layer.
<code>width_range</code>	Numeric range for edge widths.
<code>width_by</code>	Edge width variable. Currently only "rif_value" is supported.
<code>color_by</code>	Edge color variable. Currently only "rif_category" is supported.

Value

A `rif_plot` or `rif_panel` object.

`rif_layer_edge_labels` *Configure network edge labels*

Description

Updates edge-label settings for a stored network layer.

Usage

```
rif_layer_edge_labels(  
  x,  
  show = NULL,  
  size = NULL,  
  position = NULL,  
  offset = NULL,  
  rotate = NULL,  
  rotation_mode = NULL,  
  nudge = NULL  
)
```

Arguments

<code>x</code>	A <code>rif_plot</code> or <code>rif_panel</code> object with a network layer.
<code>show</code>	Logical. Show RIF values on edges?
<code>size</code>	Edge label size.
<code>position</code>	Relative position of labels along each edge.
<code>offset</code>	Perpendicular offset for edge labels.
<code>rotate</code>	Logical. Rotate edge labels with edge direction?
<code>rotation_mode</code>	Rotation mode for edge labels. Options are "readable" and "direction".
<code>nudge</code>	Named list with x/y nudges for edge labels.

Value

A `rif_plot` or `rif_panel` object.

rif_layer_matrix	<i>Add a matrix layer to a RIF plot</i>
------------------	---

Description

Stores a RIF matrix layer specification in a `rif_plot` or `rif_panel` object. Use `rif_render()` to build the final plot.

Usage

```

rif_layer_matrix(
  x,
  label_col = "Factor_label",
  factor_s_label_col = NULL,
  factor_r_label_col = NULL,
  factor_s_col = "factor_s",
  factor_r_col = "factor_r",
  rif_col = "RIF",
  title = NULL,
  subtitle = NULL,
  caption = NULL,
  x_title = "s: Concept at rank s",
  y_title = "r: Concept at rank r",
  legend_position = NULL,
  label_size = NULL,
  axis_text_size = NULL,
  axis_title_size = NULL,
  title_size = NULL,
  subtitle_size = NULL,
  caption_size = NULL,
  matrix_margin_top = NULL,
  matrix_margin_right = NULL,
  matrix_margin_bottom = NULL,
  matrix_margin_left = NULL,
  title_margin_bottom = 10,
  x_title_margin_top = 12,
  y_title_margin_right = 12,
  show_matrix_factor_names = FALSE,
  factor_s_name_col = "factor_s_name",
  factor_r_name_col = "factor_r_name",
  matrix_factor_name_wrap_width = 14
)

```

Arguments

`x` A `rif_plot` or `rif_panel` object.

<code>label_col</code>	Default column used as factor labels on both matrix axes when building the matrix from a RIF result table. Use a compact label column, such as "Factor_label_small", when axis labels need to stay short.
<code>factor_s_label_col</code>	Optional column used for labels on the rank <i>s</i> axis when building the matrix from a RIF result table. If NULL, <code>label_col</code> is used.
<code>factor_r_label_col</code>	Optional column used for labels on the rank <i>r</i> axis when building the matrix from a RIF result table. If NULL, <code>label_col</code> is used.
<code>factor_s_col</code>	Column with the factor at rank <i>s</i> for pairwise data.
<code>factor_r_col</code>	Column with the factor at rank <i>r</i> for pairwise data.
<code>rif_col</code>	Column with RIF values.
<code>title</code>	Plot title.
<code>subtitle</code>	Plot subtitle.
<code>caption</code>	Plot caption.
<code>x_title</code>	Title for the x-axis.
<code>y_title</code>	Title for the y-axis.
<code>legend_position</code>	Legend position.
<code>label_size</code>	Size of RIF labels inside cells.
<code>axis_text_size</code>	Size of axis text.
<code>axis_title_size</code>	Size of axis titles.
<code>title_size</code>	Size of plot title.
<code>subtitle_size</code>	Size of plot subtitle.
<code>caption_size</code>	Size of plot caption.
<code>matrix_margin_top</code>	Top plot margin.
<code>matrix_margin_right</code>	Right plot margin.
<code>matrix_margin_bottom</code>	Bottom plot margin.
<code>matrix_margin_left</code>	Left plot margin.
<code>title_margin_bottom</code>	Bottom margin for the title.
<code>x_title_margin_top</code>	Top margin for the x-axis title.
<code>y_title_margin_right</code>	Right margin for the y-axis title.
<code>show_matrix_factor_names</code>	Logical. Show longer factor names in axis tick labels?

factor_s_name_col
Optional source-factor long-name column.

factor_r_name_col
Optional target-factor long-name column.

matrix_factor_name_wrap_width
Wrap width for longer factor names and compact axis tick labels.

Details

When `x` is a `rif_panel`, matrix text sizes use panel-oriented defaults. Values supplied directly to `rif_layer_matrix()` or later through `rif_matrix_layout()` override those defaults.

Value

A `rif_plot` or `rif_panel` object.

<code>rif_layer_network</code>	<i>Add a network layer to a RIF plot</i>
--------------------------------	--

Description

Stores a RIF network layer specification in a `rif_plot` or `rif_panel` object. Use `rif_render()` to build the final plot.

Usage

```
rif_layer_network(
  x,
  layout = "circle",
  label_col = "Factor_label",
  factor_name_col = "Factor_small",
  from_col = "factor_s",
  to_col = "factor_r",
  rif_col = "RIF",
  rank_from_col = "rank_s",
  rank_to_col = "rank_r",
  title = NULL,
  subtitle = NULL,
  caption = NULL,
  title_size = NULL,
  subtitle_size = NULL,
  caption_size = NULL,
  title_margin_bottom = 0,
  remove_self_loops = TRUE,
  node_size_range = NULL,
  edge_width_range = c(0.6, 4),
  node_color = "#9BE7A1",
```

```

show_edge_labels = TRUE,
edge_label_size = 3.5,
rotate_edge_labels = TRUE,
edge_label_rotation_mode = c("readable", "direction"),
edge_label_position = 0.58,
edge_label_offset = 0.04,
show_manual_legend = NULL,
show_node_labels = TRUE,
node_label_size = NULL,
show_network_factor_names = TRUE,
factor_names = NULL,
factor_name_s_col = NULL,
factor_name_r_col = NULL,
factor_name_size = NULL,
factor_name_offset = 0.15,
factor_name_wrap_width = 14,
factor_name_fontface = "bold",
factor_name_color = "black",
factor_name_nudge = NULL,
wrap_labels = TRUE,
wrap_width = 10,
label_replacements = NULL,
node_adjustments = NULL,
label_nudge = NULL,
edge_label_nudge = NULL,
coord_x_pad = 0.35,
coord_y_pad = 0.15,
network_margin_top = NULL,
network_margin_right = NULL,
network_margin_bottom = NULL,
network_margin_left = NULL,
manual_legend_height = 0.14
)

```

Arguments

x	A rif_plot or rif_panel object.
layout	Network layout passed to the network layer. Currently "circle" is used by the drawing helpers.
label_col	Column used as short node labels when building the network from a RIF result table. These labels are drawn near the nodes and are wrapped with wrap_width.
factor_name_col	Optional column used for longer external factor names when building pairwise data from a RIF result table. These labels are drawn outside the nodes and are wrapped with factor_name_wrap_width.
from_col	Column with the source factor for pairwise data.
to_col	Column with the target factor for pairwise data.

<code>rif_col</code>	Column with RIF values.
<code>rank_from_col</code>	Optional source rank column for pairwise data.
<code>rank_to_col</code>	Optional target rank column for pairwise data.
<code>title</code>	Plot title.
<code>subtitle</code>	Plot subtitle.
<code>caption</code>	Plot caption.
<code>title_size</code>	Size of plot title.
<code>subtitle_size</code>	Size of plot subtitle.
<code>caption_size</code>	Size of plot caption.
<code>title_margin_bottom</code>	Bottom margin for the title.
<code>remove_self_loops</code>	Logical. Remove links where source and target are the same node?
<code>node_size_range</code>	Numeric range for node sizes. The range is reversed so higher-ranked factors are drawn larger.
<code>edge_width_range</code>	Numeric range for edge widths. Increase the second value for thicker high-RIF links.
<code>node_color</code>	Node color.
<code>show_edge_labels</code>	Logical. Show RIF values on edges?
<code>edge_label_size</code>	Edge label size.
<code>rotate_edge_labels</code>	Logical. Rotate edge labels with edge direction?
<code>edge_label_rotation_mode</code>	Rotation mode for edge labels. Options are "readable" and "direction".
<code>edge_label_position</code>	Relative position of labels along each edge.
<code>edge_label_offset</code>	Perpendicular offset for edge labels.
<code>show_manual_legend</code>	Logical. Add the manual legend for rank, edge strength, and RIF categories?
<code>show_node_labels</code>	Logical. Show node labels?
<code>node_label_size</code>	Node label size.
<code>show_network_factor_names</code>	Logical. Show longer factor names outside the network? The coordinate limits include these external labels to avoid clipping.
<code>factor_names</code>	Optional named character vector with longer factor names.

<code>factor_name_s_col</code>	Optional source-factor long-name column.
<code>factor_name_r_col</code>	Optional target-factor long-name column.
<code>factor_name_size</code>	Factor name label size.
<code>factor_name_offset</code>	Distance from each node to its longer factor name.
<code>factor_name_wrap_width</code>	Wrap width for longer external factor names from <code>factor_name_col</code> .
<code>factor_name_fontface</code>	Font face for longer factor names.
<code>factor_name_color</code>	Color for longer factor names.
<code>factor_name_nudge</code>	Named list with x/y nudges for longer factor names.
<code>wrap_labels</code>	Logical. Wrap node labels?
<code>wrap_width</code>	Wrap width for short node labels from <code>label_col</code> .
<code>label_replacements</code>	Optional named character vector with replacement node labels.
<code>node_adjustments</code>	Named list with x/y adjustments for node positions.
<code>label_nudge</code>	Named list with x/y nudges for node labels.
<code>edge_label_nudge</code>	Named list with x/y nudges for edge labels. Names must use the "from->to" form.
<code>coord_x_pad</code>	Extra x padding around the network and external labels.
<code>coord_y_pad</code>	Extra y padding around the network and external labels.
<code>network_margin_top</code>	Top plot margin.
<code>network_margin_right</code>	Right plot margin.
<code>network_margin_bottom</code>	Bottom plot margin.
<code>network_margin_left</code>	Left plot margin.
<code>manual_legend_height</code>	Relative height of the manual legend.

Details

When `x` is a `rif_panel`, node sizes, node-label sizes, factor-name sizes, and plot margins use panel-oriented defaults. Values supplied directly to `rif_layer_network()` or later through `rif_layer_nodes()`, `rif_network_labels()`, or `rif_network_layout()` override those defaults. `wrap_width` controls short node labels from `label_col`; `factor_name_wrap_width` controls longer external factor names from `factor_name_col`.

Value

A rif_plot or rif_panel object.

rif_layer_nodes	<i>Configure network nodes</i>
-----------------	--------------------------------

Description

Updates node settings for a stored network layer.

Usage

```
rif_layer_nodes(x, color = NULL, size_range = NULL, size_by = NULL)
```

Arguments

x	A rif_plot or rif_panel object with a network layer.
color	Node color.
size_range	Numeric range for node sizes.
size_by	Node size variable. Currently only "rank" is supported.

Value

A rif_plot or rif_panel object.

rif_legend	<i>Configure legends for a RIF plot object</i>
------------	--

Description

Stores shared legend settings that can be used by later RIF plot layers.

Usage

```
rif_legend(  
  x,  
  show = NULL,  
  position = NULL,  
  size = NULL,  
  spacing = NULL,  
  title_size = NULL,  
  label_size = NULL  
)
```

Arguments

x	A rif_plot or rif_panel object.
show	Logical. Should the layer show its legend?
position	Legend position for layers that use ggplot legends, such as matrix plots. Common values are "none", "right", "left", "top", and "bottom".
size	Relative size reserved for panel legends or network manual legends.
spacing	Relative spacing between panel plots and panel legends. For individual matrix plots, this is interpreted as lines of spacing around the ggplot legend box.
title_size	Size of the legend title.
label_size	Size of the legend labels.

Value

A rif_plot or rif_panel object.

rif_matrix_labels	<i>Configure matrix labels</i>
-------------------	--------------------------------

Description

Updates axis and factor-name label settings for a stored matrix layer.

Usage

```
rif_matrix_labels(
  x,
  x_title = NULL,
  y_title = NULL,
  factor_name_wrap_width = NULL
)
```

Arguments

x	A rif_plot or rif_panel object with a matrix layer.
x_title	Title for the x-axis.
y_title	Title for the y-axis.
factor_name_wrap_width	Wrap width for longer factor names and compact axis tick labels.

Value

A rif_plot or rif_panel object.

rif_matrix_layout	<i>Configure matrix layout</i>
-------------------	--------------------------------

Description

Updates text-size and spacing settings for a stored matrix layer.

Usage

```

rif_matrix_layout(
  x,
  label_size = NULL,
  axis_text_size = NULL,
  axis_title_size = NULL,
  margin = NULL,
  title_margin_bottom = NULL,
  x_title_margin_top = NULL,
  y_title_margin_right = NULL
)

```

Arguments

x	A rif_plot or rif_panel object with a matrix layer.
label_size	Size of RIF labels inside cells.
axis_text_size	Size of axis text.
axis_title_size	Size of axis titles.
margin	Numeric vector of length four for top, right, bottom, and left plot margins.
title_margin_bottom	Bottom margin for the title.
x_title_margin_top	Top margin for the x-axis title.
y_title_margin_right	Right margin for the y-axis title.

Value

A rif_plot or rif_panel object.

rif_network_labels	<i>Configure network labels</i>
--------------------	---------------------------------

Description

Updates node-label and factor-name label settings for a stored network layer.

Usage

```

rif_network_labels(
  x,
  show_node_labels = NULL,
  node_label_size = NULL,
  factor_names = NULL,
  factor_name_size = NULL,
  factor_name_color = NULL,
  factor_name_fontface = NULL,
  wrap_labels = NULL,
  wrap_width = NULL,
  factor_name_wrap_width = NULL,
  label_replacements = NULL
)

```

Arguments

x	A rif_plot or rif_panel object with a network layer.
show_node_labels	Logical. Show node labels?
node_label_size	Node label size.
factor_names	Optional named character vector with longer factor names.
factor_name_size	Factor name label size.
factor_name_color	Factor name label color.
factor_name_fontface	Factor name label font face.
wrap_labels	Logical. Wrap node labels?
wrap_width	Wrap width for node labels.
factor_name_wrap_width	Wrap width for longer factor names.
label_replacements	Optional named character vector with replacement node labels.

Value

A rif_plot or rif_panel object.

rif_network_layout	<i>Configure network layout</i>
--------------------	---------------------------------

Description

Updates layout and nudge settings for a stored network layer.

Usage

```

rif_network_layout(
  x,
  layout = NULL,
  node_adjustments = NULL,
  label_nudge = NULL,
  edge_label_nudge = NULL,
  factor_name_nudge = NULL,
  factor_name_offset = NULL,
  coord_x_pad = NULL,
  coord_y_pad = NULL,
  margin = NULL,
  title_margin_bottom = NULL
)

```

Arguments

<code>x</code>	A <code>rif_plot</code> or <code>rif_panel</code> object with a network layer.
<code>layout</code>	Network layout. Defaults to "circle".
<code>node_adjustments</code>	Named list with x/y adjustments for node positions.
<code>label_nudge</code>	Named list with x/y nudges for node labels.
<code>edge_label_nudge</code>	Named list with x/y nudges for edge labels.
<code>factor_name_nudge</code>	Named list with x/y nudges for longer factor names.
<code>factor_name_offset</code>	Distance from each node to its longer factor name.
<code>coord_x_pad</code>	Extra x padding.
<code>coord_y_pad</code>	Extra y padding.
<code>margin</code>	Numeric vector of length four for top, right, bottom, and left plot margins.
<code>title_margin_bottom</code>	Bottom margin for the title.

Value

A `rif_plot` or `rif_panel` object.

rif_panel	<i>Create a RIF panel object</i>
-----------	----------------------------------

Description

Creates a lightweight panel specification from multiple `rif_plot` objects. Later RIF layers can use this object to build one plot per specification and combine them into a panel.

Usage

```
rif_panel(..., nrow = 1, ncol = NULL)
```

Arguments

...	Named <code>rif_plot</code> objects. Names are used as panel labels.
nrow	Optional number of panel rows.
ncol	Optional number of panel columns.

Value

An object of class `rif_panel`.

rif_plot	<i>Create a RIF plot object</i>
----------	---------------------------------

Description

Creates a lightweight plot specification that can be extended by RIF plotting layers. This object stores the input data and selection context, but does not draw a plot by itself.

Usage

```
rif_plot(
  data,
  method = c("MLE-KS", "Bootstrapping"),
  group = NULL,
  type = NULL
)
```

Arguments

data	An object accepted by RIF plot functions, such as <code>rif_results</code> , <code>rif_compare_results</code> , <code>rif_result_tbl</code> , or a data frame.
method	Estimation method. Options are "MLE-KS" and "Bootstrapping".
group	Optional group value used by later plot layers.
type	Optional type value used by later plot layers.

Value

An object of class `rif_plot`.

`rif_prepare`
Prepare data for RIF analysis

Description

Converts a user data frame into a standardized RIF object.

Usage

```
rif_prepare(
  data,
  factor_col,
  count_col,
  factor_small_col = NULL,
  group_col = NULL,
  type_col = NULL,
  group_value = "G",
  type_value = "corpus_type",
  prefix = "F",
  factor_small_label_style = "inline"
)
```

Arguments

<code>data</code>	A data frame.
<code>factor_col</code>	Name of the factor/concept column.
<code>count_col</code>	Name of the frequency/count column.
<code>factor_small_col</code>	Optional name of the short factor label column.
<code>group_col</code>	Optional name of the group column.
<code>type_col</code>	Optional name of the type column.
<code>group_value</code>	Group value used when <code>group_col = NULL</code> .
<code>type_value</code>	Type value used when <code>type_col = NULL</code> .
<code>prefix</code>	Prefix used to create factor labels.
<code>factor_small_label_style</code>	Style for the combined short label. Options are "inline", "newline", and "colon".

Value

An object of class `rif_tbl`.

<code>rif_render</code>	<i>Render a RIF plot object</i>
-------------------------	---------------------------------

Description

Builds the final plot from a `rif_plot` or `rif_panel` object with a stored layer specification.

Usage

```
rif_render(x)
```

Arguments

<code>x</code>	A <code>rif_plot</code> or <code>rif_panel</code> object.
----------------	---

Value

A ggplot object or a combined cowplot object.

<code>rif_theme</code>	<i>Configure shared RIF plot theme settings</i>
------------------------	---

Description

Stores shared theme settings that can be used by later RIF plot layers when rendering.

Usage

```
rif_theme(x, title_size = NULL, subtitle_size = NULL, caption_size = NULL)
```

Arguments

<code>x</code>	A <code>rif_plot</code> or <code>rif_panel</code> object.
<code>title_size</code>	Size of plot titles.
<code>subtitle_size</code>	Size of plot subtitles.
<code>caption_size</code>	Size of plot captions.

Value

A `rif_plot` or `rif_panel` object.

rif_workflow_z1	<i>Run complete Z1 RIF workflow</i>
-----------------	-------------------------------------

Description

Runs the complete Z1 workflow for prepared RIF data: Zipf table, power-law fitting, RIF computation, plots, and Excel export.

Usage

```

rif_workflow_z1(
  rif_data,
  alpha_zipf = 1,
  no_of_sims = 1000,
  threads = 1,
  seed = 123,
  bootstrap_engine = c("powerLaw", "manual"),
  output_dir = NULL,
  title_prefix = "Observed and theoretical Zipf distributions for ",
  x_title = "Rank",
  y_title = "Count",
  excel_file = NULL,
  zipf_excel_file = NULL,
  save_excel = FALSE,
  save_plots = FALSE,
  plot_formats = "png",
  plot_format = NULL,
  plot_dir = NULL,
  plot_width = 8,
  plot_height = 6,
  plot_dpi = 300
)

```

Arguments

<code>rif_data</code>	An object of class <code>rif_tbl</code> , usually created with <code>rif_prepare()</code> .
<code>alpha_zipf</code>	Theoretical Zipf alpha value.
<code>no_of_sims</code>	Number of bootstrap simulations.
<code>threads</code>	Number of threads for powerLaw bootstrap.
<code>seed</code>	Random seed.
<code>bootstrap_engine</code>	Bootstrap engine. Options are "powerLaw" and "manual".
<code>output_dir</code>	Output directory. Required when saving files unless all relevant file or directory paths are supplied explicitly.
<code>title_prefix</code>	Plot title.

x_title	X-axis title.
y_title	Y-axis title.
excel_file	Output Excel filename.
zipf_excel_file	Output Excel filename for the Zipf table.
save_excel	Logical. Save RIF results to Excel?
save_plots	Logical. Save Zipf plots to disk?
plot_formats	Plot export format or formats. Options are "png" and "pdf".
plot_format	Deprecated alias for plot_formats.
plot_dir	Output directory for plots. If NULL, results_powerlaw_basic inside output_dir is used.
plot_width	Plot width used when saving plots.
plot_height	Plot height used when saving plots.
plot_dpi	Resolution used when saving PNG plots.

Value

A list of class rif_workflow_z1.

rif_workflow_z2	<i>Run complete Z2 comparative RIF workflow</i>
-----------------	---

Description

Runs the complete Z2 workflow for two RIF inputs. Both inputs must be the same kind: either prepared RIF data or previously computed RIF results. If the inputs are `rif_tbl` objects, the workflow runs `rif_workflow_z1()` for each group and then creates the comparative tables. If the inputs are `rif_results` objects, the workflow skips model fitting, RIF computation, and Zipf plots, and only creates the comparative tables and Excel export.

Usage

```
rif_workflow_z2(
  rif_data1,
  rif_data2,
  alpha_zipf = 1,
  no_of_sims = 1000,
  threads = 1,
  seed = 123,
  bootstrap_engine = c("powerlaw", "manual"),
  output_dir = NULL,
  title_prefix = "Observed and theoretical Zipf distributions for ",
  x_title = "Rank",
  y_title = "Count",
```

```

    excel_file = NULL,
    save_excel = FALSE,
    save_plots = FALSE,
    plot_formats = "png",
    plot_format = NULL,
    plot_dir = NULL,
    plot_width = 8,
    plot_height = 6,
    plot_dpi = 300
)

```

Arguments

<code>rif_data1</code>	First object of class <code>rif_tbl</code> or <code>rif_results</code> .
<code>rif_data2</code>	Second object of class <code>rif_tbl</code> or <code>rif_results</code> . Must have the same class family as <code>rif_data1</code> .
<code>alpha_zipf</code>	Theoretical Zipf alpha value.
<code>no_of_sims</code>	Number of bootstrap simulations.
<code>threads</code>	Number of threads for powerLaw bootstrap.
<code>seed</code>	Random seed.
<code>bootstrap_engine</code>	Bootstrap engine. Options are "powerLaw" and "manual".
<code>output_dir</code>	Output directory. Required when saving files.
<code>title_prefix</code>	Plot title.
<code>x_title</code>	X-axis title.
<code>y_title</code>	Y-axis title.
<code>excel_file</code>	Output Excel filename.
<code>save_excel</code>	Logical. Save comparative RIF results to Excel?
<code>save_plots</code>	Logical. Save Zipf plots to disk? Only available when both inputs are objects of class <code>rif_tbl</code> .
<code>plot_formats</code>	Plot export format or formats. Options are "png" and "pdf".
<code>plot_format</code>	Deprecated alias for <code>plot_formats</code> .
<code>plot_dir</code>	Output directory for plots. If NULL, each group subfolder is used.
<code>plot_width</code>	Plot width used when saving plots.
<code>plot_height</code>	Plot height used when saving plots.
<code>plot_dpi</code>	Resolution used when saving PNG plots.

Value

A list of class `rif_workflow_z2`.

rif_workflow_z3	<i>Run Z3 RIF visual workflow</i>
-----------------	-----------------------------------

Description

Creates matrix and network visualizations from individual or comparative RIF results. The workflow accepts only `rif_results` and `rif_compare_results` objects; use `rif_workflow_z1()` or `rif_workflow_z2()` first when starting from prepared RIF tables.

Usage

```
rif_workflow_z3(
  x,
  output_dir = "Z3_results_RIF_visuals",
  scope = c("auto", "individual", "combined", "both"),
  plot_types = c("matrix", "network"),
  methods = NULL,
  types = NULL,
  groups = NULL,
  formats = "png",
  matrix_width = 10,
  matrix_height = 7.5,
  network_width = 10,
  network_height = 7.5,
  combined_matrix_width = 16,
  combined_matrix_height = 7.2,
  combined_network_width = 16,
  combined_network_height = 7.6,
  units = "in",
  dpi = 300,
  overwrite = TRUE,
  save = TRUE,
  matrix_args = list(),
  network_args = list()
)
```

Arguments

<code>x</code>	An object of class <code>rif_results</code> or <code>rif_compare_results</code> .
<code>output_dir</code>	Output directory.
<code>scope</code>	Plot scope. Uses the same logic as <code>export_rif_visuals()</code> : "auto" becomes "individual" for <code>rif_results</code> and "both" for <code>rif_compare_results</code> .
<code>plot_types</code>	Plot types to export. Options are "matrix" and "network".
<code>methods</code>	Optional methods to include. If NULL, all methods in <code>x</code> are used.
<code>types</code>	Optional types to include. If NULL, all types in <code>x</code> are used.

groups	Optional groups to include for individual plots. If NULL, all groups in x are used.
formats	Output format or formats. Options are "png" and "pdf".
matrix_width	Matrix plot width.
matrix_height	Matrix plot height.
network_width	Network plot width.
network_height	Network plot height.
combined_matrix_width	Combined matrix panel width.
combined_matrix_height	Combined matrix panel height.
combined_network_width	Combined network panel width.
combined_network_height	Combined network panel height.
units	Units for plot width and height.
dpi	Resolution used for PNG output.
overwrite	Logical. Should existing files be overwritten?
save	Logical. Save plots to disk?
matrix_args	Named list of additional arguments passed to plot_matrix().
network_args	Named list of additional arguments passed to plot_network().

Value

A list of class rif_workflow_z3.

rif_zipf	<i>Build Zipf table for RIF data</i>
----------	--------------------------------------

Description

Computes theoretical Zipf counts and related errors for prepared RIF data.

Usage

```
rif_zipf(data, alpha_zipf = 1)
```

Arguments

data	An object of class rif_tbl.
alpha_zipf	Theoretical Zipf alpha value. Default is 1.

Value

An object of class rif_zipf_tbl.

Index

- * **datasets**
 - data_by_type, 3
 - data_no_type, 3
- data_by_type, 3
- data_no_type, 3
- export_rif_excel, 4
- export_rif_plots, 4
- export_rif_visuals, 5
- import_rif_excel, 7
- plot_matrix, 8
- plot_network, 10
- plot_zipf, 14
- print.rif_analysis, 16
- print.rif_powerlaw_fit, 16
- print.rif_results, 17
- print.rif_tbl, 17
- print.rif_zipf_tbl, 18
- rif_analysis, 18
- rif_compare_results, 19
- rif_compute, 19
- rif_compute_results, 20
- rif_fit_bootstrap, 21
- rif_fit_mle_ks, 21
- rif_fit_powerlaw, 22
- rif_labels, 23
- rif_layer_edge_labels, 24
- rif_layer_edges, 23
- rif_layer_matrix, 25
- rif_layer_network, 27
- rif_layer_nodes, 31
- rif_legend, 31
- rif_matrix_labels, 32
- rif_matrix_layout, 33
- rif_network_labels, 34
- rif_network_layout, 35
- rif_panel, 36
- rif_plot, 36
- rif_prepare, 37
- rif_render, 38
- rif_theme, 38
- rif_workflow_z1, 39
- rif_workflow_z2, 40
- rif_workflow_z3, 42
- rif_zipf, 43