

# Package: facetsviz (via r-universe)

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**Type** Package

**Title** Parse and Visualize Facets Output Files

**Version** 0.1.1

**Description** Utilities to parse output files from 'Facets' (a software widely used for multi-facet Rasch measurement) and build accurate visualizations from the measurement reports. For more details on the underlying measurement framework, see Linacre (1994, ISBN:0-941938-02-6) and Linacre (2023) <<https://www.winsteps.com/a/Facets-Manual.pdf>>.

**URL** <https://github.com/myprabowo/facetsviz>

**BugReports** <https://github.com/myprabowo/facetsviz/issues>

**License** MIT + file LICENSE

**Encoding** UTF-8

**Depends** R (>= 4.1.0)

**Imports** ggrepel, ggplot2, rlang, scales, stats, tibble, tidyr, tools, utils

**Suggests** bslib, DT, knitr, rmarkdown, shiny, testthat

**VignetteBuilder** knitr

**Config/testthat/edition** 3

**RoxygenNote** 7.3.3

**NeedsCompilation** no

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**Repository** <https://cran.r-universe.dev>

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|                   |                                                |
|-------------------|------------------------------------------------|
| facetsviz-package | <i>Parse and visualize FACETS output files</i> |
|-------------------|------------------------------------------------|

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Description

The **facetsviz** package parses FACETS .out files and renders common multi-facet Rasch measurement plots, including Wright maps, severity distributions, criterion diagnostics, rating-scale diagnostics, and unexpected response summaries.

Core functions

- read\_facets()
- render\_facets\_plots()
- render\_facets\_batch()
- run\_app()

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|              |                              |
|--------------|------------------------------|
| facets_theme | <i>Facets plotting theme</i> |
|--------------|------------------------------|

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**Description**

Facets plotting theme

**Usage**

```
facets_theme(base_size = 11, base_family = "Helvetica")
```

**Arguments**

|             |                   |
|-------------|-------------------|
| base_size   | Base text size.   |
| base_family | Base font family. |

**Value**

A ggplot2 theme object.

---

|                   |                                                      |
|-------------------|------------------------------------------------------|
| plot_distribution | <i>Plot the distribution of measures for a facet</i> |
|-------------------|------------------------------------------------------|

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**Description**

Plot the distribution of measures for a facet

**Usage**

```
plot_distribution(x, facet_index = 2L, binwidth = 0.75)
```

**Arguments**

|             |                                                        |
|-------------|--------------------------------------------------------|
| x           | A 'facets_out' object or path to a FACETS '.out' file. |
| facet_index | Which measurement report to plot (default '2L').       |
| binwidth    | Histogram bin width in logits.                         |

**Value**

A ggplot object.

---

|                |                                                                |
|----------------|----------------------------------------------------------------|
| plot_estimates | <i>Plot measure estimates with standard errors for a facet</i> |
|----------------|----------------------------------------------------------------|

---

**Description**

Plot measure estimates with standard errors for a facet

**Usage**

```
plot_estimates(x, facet_index = 3L)
```

**Arguments**

|             |                                                        |
|-------------|--------------------------------------------------------|
| x           | A 'facets_out' object or path to a FACETS '.out' file. |
| facet_index | Which measurement report to plot (default '3L').       |

**Value**

A ggplot object.

---

|               |                                                                      |
|---------------|----------------------------------------------------------------------|
| plot_fairness | <i>Plot representative observed versus fair averages for a facet</i> |
|---------------|----------------------------------------------------------------------|

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**Description**

Plot representative observed versus fair averages for a facet

**Usage**

```
plot_fairness(x, facet_index = 1L, n = 8L)
```

**Arguments**

|             |                                                        |
|-------------|--------------------------------------------------------|
| x           | A 'facets_out' object or path to a FACETS '.out' file. |
| facet_index | Which measurement report to plot (default '1L').       |
| n           | Number of representative elements to show.             |

**Value**

A ggplot object.

---

`plot_ogive`*Plot the expected-score ogive implied by Table 8.1 thresholds*

---

**Description**

Plot the expected-score ogive implied by Table 8.1 thresholds

**Usage**

```
plot_ogive(x, theta = NULL)
```

**Arguments**

|                    |                                                        |
|--------------------|--------------------------------------------------------|
| <code>x</code>     | A ‘facets_out’ object or path to a FACETS ‘.out’ file. |
| <code>theta</code> | Optional vector of theta values.                       |

**Value**

A ggplot object.

---

`plot_probability`*Plot rating-scale category probability curves*

---

**Description**

Plot rating-scale category probability curves

**Usage**

```
plot_probability(x, theta = NULL)
```

**Arguments**

|                    |                                                        |
|--------------------|--------------------------------------------------------|
| <code>x</code>     | A ‘facets_out’ object or path to a FACETS ‘.out’ file. |
| <code>theta</code> | Optional vector of theta values.                       |

**Value**

A ggplot object.

---

|                |                                                                                  |
|----------------|----------------------------------------------------------------------------------|
| plot_structure | <i>Plot mode, median, and mean category regions from rating-scale thresholds</i> |
|----------------|----------------------------------------------------------------------------------|

---

**Description**

Plot mode, median, and mean category regions from rating-scale thresholds

**Usage**

plot\_structure(x, theta = NULL)

**Arguments**

- x                   A ‘facets\_out’ object or path to a FACETS ‘.out’ file.
- theta               Optional vector of theta values.

**Value**

A ggplot object.

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|                 |                                                               |
|-----------------|---------------------------------------------------------------|
| plot_unexpected | <i>Plot the strongest unexpected responses from Table 4.1</i> |
|-----------------|---------------------------------------------------------------|

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**Description**

Plot the strongest unexpected responses from Table 4.1

**Usage**

plot\_unexpected(x, top\_n = 20L)

**Arguments**

- x                   A ‘facets\_out’ object or path to a FACETS ‘.out’ file.
- top\_n               Number of rows to show.

**Value**

A ggplot object.

---

|            |                                                     |
|------------|-----------------------------------------------------|
| plot_usage | <i>Plot rating-scale category usage frequencies</i> |
|------------|-----------------------------------------------------|

---

**Description**

Plot rating-scale category usage frequencies

**Usage**

```
plot_usage(x)
```

**Arguments**

x                    A ‘facets\_out’ object or path to a FACETS ‘.out’ file.

**Value**

A ggplot object.

---

|             |                                                          |
|-------------|----------------------------------------------------------|
| plot_wright | <i>Plot a compact Wright map across available facets</i> |
|-------------|----------------------------------------------------------|

---

**Description**

Plot a compact Wright map across available facets

**Usage**

```
plot_wright(x)
```

**Arguments**

x                    A ‘facets\_out’ object or path to a FACETS ‘.out’ file.

**Value**

A ggplot object.

---

|             |                                  |
|-------------|----------------------------------|
| read_facets | <i>Read a FACETS output file</i> |
|-------------|----------------------------------|

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### Description

Reads a FACETS ‘.out’ file and parses the main FACETS tables used by the package.

### Usage

```
read_facets(path, encoding = "UTF-8")
```

### Arguments

|          |                                           |
|----------|-------------------------------------------|
| path     | Path to a FACETS ‘.out’ file.             |
| encoding | Text encoding used when reading the file. |

### Value

An object of class ‘facets\_out’.

---

|              |                                                      |
|--------------|------------------------------------------------------|
| render_batch | <i>Render FACETS plots for multiple output files</i> |
|--------------|------------------------------------------------------|

---

### Description

Render FACETS plots for multiple output files

### Usage

```
render_batch(
  paths = ".",
  output_root,
  recursive = TRUE,
  include = c("wright_map", "observed_vs_fair", "measure_distribution", "estimates",
    "category_usage", "probability_curves", "expected_score_ogive", "scale_structure",
    "unexpected_responses"),
  formats = c("png", "tiff"),
  dpi = 600,
  top_n_unexpected = 20L
)
```

**Arguments**

|                  |                                                                           |
|------------------|---------------------------------------------------------------------------|
| paths            | One or more FACETS '.out' or '.txt' files or directories containing them. |
| output_root      | Root directory for rendered plot folders.                                 |
| recursive        | Whether to search directories recursively.                                |
| include          | Plot names passed to [render_plots()].                                    |
| formats          | File formats passed to [render_plots()].                                  |
| dpi              | Image resolution.                                                         |
| top_n_unexpected | Number of unexpected responses to show.                                   |

**Value**

A tibble describing rendered outputs.

---

|              |                                                               |
|--------------|---------------------------------------------------------------|
| render_plots | <i>Render a standard set of FACETS visualizations to disk</i> |
|--------------|---------------------------------------------------------------|

---

**Description**

Render a standard set of FACETS visualizations to disk

**Usage**

```
render_plots(
  x,
  output_dir,
  include = c("wright_map", "observed_vs_fair", "measure_distribution", "estimates",
    "category_usage", "probability_curves", "expected_score_ogive", "scale_structure",
    "unexpected_responses"),
  formats = c("png", "tiff"),
  dpi = 600,
  top_n_unexpected = 20L
)
```

**Arguments**

|                  |                                                                  |
|------------------|------------------------------------------------------------------|
| x                | A 'facets_out' object or path to a FACETS '.out' file.           |
| output_dir       | Output directory for image files.                                |
| include          | Character vector of plot names to render.                        |
| formats          | File formats to write, such as "png" or "tiff".                  |
| dpi              | Image resolution.                                                |
| top_n_unexpected | Number of unexpected responses to show when rendering that plot. |

**Value**

Invisibly, a named list of generated file paths.

---

run\_app

*Launch the facetsviz Shiny app*

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**Description**

Launch the facetsviz Shiny app

**Usage**

```
run_app(launch = TRUE, host = "127.0.0.1", port = NULL)
```

**Arguments**

|        |                                                                        |
|--------|------------------------------------------------------------------------|
| launch | If 'TRUE', run the app immediately. If 'FALSE', return the app object. |
| host   | Host passed to [shiny::runApp()] when launching.                       |
| port   | Port passed to [shiny::runApp()] when launching.                       |

**Value**

A shiny app object when 'launch = FALSE', otherwise the result of [shiny::runApp()].

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