Package: ekioplot (via r-universe)

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Type Package

Title EKIO Visual Identity System for R Data Visualization

Version 0.4.0

Description A ggplot2 implementation of EKIO's visual identity for data visualization. Professional themes, curated color palettes, and scale functions for ggplot2 and gt tables. Includes high-level recipe functions for common chart types.

URL https://viniciusoike.github.io/ekioplot/, https://github.com/viniciusoike/ekioplot

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Depends R (>= 4.1.0)

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LazyData true

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Contents

`brazil_agriculture` *Brazilian Municipal Agricultural Production (2022)*

Description

A comprehensive dataset containing agricultural production data for Brazil's three major crops by municipality, based on IBGE's Municipal Agricultural Production survey (PAM - Produção Agrícola Municipal).

Usage

```
brazil_agriculture
```

Format

A tibble with 16,689 rows and 12 variables:

code_muni IBGE municipality code (numeric)

name_muni Municipality name (character)

name_state State name (character)

name_region Region name in Portuguese (character)

crop Crop name in English (character)

production_tonnes Production quantity in tonnes (numeric)

area_harvested_ha Area harvested in hectares (numeric)

yield Calculated productivity in tonnes per hectare (numeric)

crop_type Crop cultivation type: annual, semi-perennial (character)

crop_category Crop category: grains, industrial (character)

crop_importance Economic importance: major (character)

production_scale Production scale category (integer)

Details

The dataset covers Brazil's three major crops by municipality in 2022: soybeans, corn, and sugarcane. This represents municipal-level agricultural production data for analysis of regional agricultural patterns.

Crops included:

- **Soybeans**: Brazil's top agricultural export (annual grain crop)
- **Corn**: Major grain crop for domestic and export markets (annual)
- **Sugarcane**: Industrial crop for sugar and ethanol (semi-perennial)

Geographic coverage: All Brazilian municipalities with production data for these crops across all regions.

Source

IBGE - Instituto Brasileiro de Geografia e Estatística Table 1612: Area, production, yield and value of agricultural production (PAM - Produção Agrícola Municipal) https://www.ibge.gov.br/

References

IBGE. (2023). Produção Agrícola Municipal - PAM 2022. Rio de Janeiro: IBGE.

Examples

```
## Not run:
# Load the dataset
data(brazil_agriculture)

# View top soybean producing municipalities
brazil_agriculture |>
  filter(crop == "soybeans") |>
  slice_max(production_tonnes, n = 10)

# Check available crops
unique(brazil_agriculture$crop)

# View structure
str(brazil_agriculture)

## End(Not run)
```

---

brazil_agriculture_states

Brazilian State-Level Agricultural Production Time Series (1974-2023)

Description

A time series dataset containing agricultural production data for Brazil's major crops by state, based on IBGE's Municipal Agricultural Production survey (PAM).

Usage

```
brazil_agriculture_states
```

Format

A tibble with 9,450 rows and 8 variables:

code_state IBGE state code (numeric)

name_state State name (character)

year Year of observation (1974-2023, numeric)

crop Crop name in English (character)

production_tonnes Production quantity in tonnes (numeric)

area_harvested_ha Area harvested in hectares (numeric)

yield_kg_per_ha Productivity in kg per hectare (numeric)

production_value_brl_k Production value in thousands of BRL (numeric)

Details

This dataset provides state-level time series for Brazil's seven most important crops from 1974 to 2023, enabling analysis of long-term agricultural trends and regional specialization patterns.

Crops included:

- **Soybeans**: Brazil's top agricultural export
- **Corn**: Major grain crop for domestic and export markets
- **Sugarcane**: Industrial crop for sugar and ethanol
- **Cotton**: Key fiber crop and export commodity
- **Rice**: Important food security crop
- **Wheat**: Food grain crop, mainly in southern states
- **Beans**: Traditional protein source and food security crop

Time coverage: Nearly 50 years of data (1974-2023) providing comprehensive historical perspective on Brazilian agricultural development.

Source

IBGE - Instituto Brasileiro de Geografia e Estatística Table 1612: Area, production, yield and value of agricultural production (PAM - Produção Agrícola Municipal) https://www.ibge.gov.br/

References

IBGE. (2023). Produção Agrícola Municipal - PAM 2022. Rio de Janeiro: IBGE.

Examples

```
## Not run:
# Load the dataset
data(brazil_agriculture_states)

# Soybean production trends by top states (recent years)
brazil_agriculture_states |>
  filter(crop == "soybeans", year >= 2010, !is.na(production_tonnes)) |>
  slice_max(production_tonnes, n = 50) |>
  ggplot(aes(year, production_tonnes, color = name_state)) +
  geom_line()

# View structure
str(brazil_agriculture_states)

## End(Not run)
```

`brazil_gdp` *Brazilian Municipal GDP and Economic Structure (2021)*

Description

A dataset containing municipal GDP data for all Brazilian municipalities based on IBGE's Municipal National Accounts (Contas Nacionais Municipais).

Usage

```
brazil_gdp
```

Format

A tibble with 5,570 rows and 7 variables:

code_muni IBGE municipality code (numeric)

name_muni Municipality name (character)

code_state IBGE state code (numeric)

name_state State name (character)

year Year of observation (2021, numeric)

gdp_brl_k GDP in thousands of Brazilian reais (numeric)

gdp_brl_m GDP in millions of Brazilian reais (numeric)

Details

The dataset includes GDP data for all 5,570 Brazilian municipalities for 2021, the most recent year available in IBGE's Municipal National Accounts. GDP values are provided in both thousands (gdp_brl_k) and millions (gdp_brl_m) of Brazilian reais at current prices.

Source

IBGE - Instituto Brasileiro de Geografia e Estatística Table 5938: GDP and other aggregates by municipality (Contas Nacionais Municipais) https://www.ibge.gov.br/

References

IBGE. (2023). Produto Interno Bruto dos Municípios - 2021. Rio de Janeiro: IBGE.

Examples

```
## Not run:
# Load the dataset
data(brazil_gdp)

# Top 10 municipalities by GDP in 2021
brazil_gdp |>
```

```
  slice_max(gdp_brl_m, n = 10)

# View structure
str(brazil_gdp)

## End(Not run)
```

`brazil_population` *Brazilian Municipal Population Data (2025)*

Description

A dataset containing population data for Brazilian municipalities with over 100,000 inhabitants, based on IBGE population estimates for 2025.

Usage

```
brazil_population
```

Format

A tibble with 338 rows and 5 variables:

rank Population ranking among all municipalities (numeric)

name_muni Municipality name (character)

abbrev_state State abbreviation (character)

population Total population in 2025 (numeric)

category City size category based on population (ordered factor)

Details

The dataset focuses on Brazil's 338 largest municipalities (population > 100,000) and provides population ranking and size classification for 2025.

City size categories:

- **Metropolis (1M+)**: 1 million+ inhabitants
- **Large city (500K-1M)**: 500,000 to 1 million inhabitants
- **Medium city (200K-500K)**: 200,000 to 500,000 inhabitants
- **Small city (100K-200K)**: 100,000 to 200,000 inhabitants

Source

IBGE - Instituto Brasileiro de Geografia e Estatística Table 6579: Municipal population estimates https://www.ibge.gov.br/

Examples

```
## Not run:
# Load the dataset
data(brazil_population)

# View the largest cities
head(brazil_population)

# Count cities by category
table(brazil_population$category)

## End(Not run)
```

`ekio_accent` *EKIO Named Accent Colors*

Description

Individual accent colors for quick access.

Usage

```
ekio_accent
```

Format

Named character vector with 8 accent colors

Examples

```
ekio_accent["blue"]    # Primary blue
ekio_accent["orange"]  # Contrast accent
```

`ekio_areaplot` *EKIO Area Plot*

Description

Professional area plot with smart aesthetic detection. Supports stacked and filled (proportional) area charts.

Usage

```
ekio_areaplot(
  data,
  x,
  y,
  fill = NULL,
  palette = NULL,
  position = "stack",
  alpha = 0.8,
  add_zero = TRUE,
  ...
)
```

Arguments

data	A data frame
x	X-axis variable (supports data-masking)
y	Y-axis variable (supports data-masking)
fill	Fill aesthetic. A color string or variable name.
palette	Character. Palette name for variable mappings.
position	Character. Stacking method: "stack" (default) or "fill" for proportional areas.
alpha	Numeric. Fill transparency (default: 0.8).
add_zero	Logical. Add horizontal line at y=0 (default: TRUE).
...	Additional arguments passed to ggplot2::geom_area()

Value

ggplot2 object

Examples

```
ekio_areaplot(ggplot2::economics, date, unemploy)

# Stacked area with groups
data(fuels)
world_fuels <- fuels[fuels$entity == "World" & fuels$year >= 1950, ]
ekio_areaplot(world_fuels, year, consumption_gwh, fill = fuel)
```

ekio_barplot *EKIO Bar Plot*

Description

Professional bar plot with smart aesthetic detection.

Usage

```
ekio_barplot(
  data,
  x,
  y,
  fill = NULL,
  palette = NULL,
  add_zero = TRUE,
  horizontal = FALSE,
  bar_width = 0.8,
  ...
)
```

Arguments

data	A data frame
x	X-axis variable (supports data-masking)
y	Y-axis variable (supports data-masking)
fill	Fill aesthetic. A color string or variable name.
palette	Character. Palette name for variable mappings.
add_zero	Logical. Add horizontal line at y=0 (default: TRUE)
horizontal	Logical. Create horizontal bar plot (default: FALSE)
bar_width	Bar width (default: 0.8)
...	Additional arguments passed to ggplot2::geom_col()

Value

ggplot2 object

Examples

```
cyl_counts <- as.data.frame(table(cyl = mtcars$cyl))
names(cyl_counts)[2] <- "n"
ekio_barplot(cyl_counts, cyl, n)
```

ekio_blue *EKIO Primary Blue Scale*

Description

Brand identity color scale from light to dark.

Usage

```
ekio_blue
```

Format

Named character vector with 10 shades (50-900)

Examples

```
ekio_blue["700"]  # Primary brand blue
ekio_blue["200"]  # Light blue for backgrounds
```

ekio_gray *EKIO Neutral Gray Scale*

Description

Neutral grays for text, backgrounds, borders, and grids.

Usage

```
ekio_gray
```

Format

Named character vector with 10 shades (50-900)

Examples

```
ekio_gray["900"]  # Darkest text
ekio_gray["300"]  # Grid lines
```

ekio_histogram *EKIO Histogram*

Description

Professional histogram with smart aesthetic detection.

Usage

```
ekio_histogram(
  data,
  x,
  fill = NULL,
  palette = NULL,
  bins = "sturges",
  binwidth = NULL,
  add_zero = TRUE,
  border_color = "white",
  ...
)
```

Arguments

data	A data frame
x	Variable to plot (supports data-masking)
fill	Fill aesthetic. A color string or variable name. NULL uses EKIO blue.
palette	Character. Palette name for variable mappings.
bins	Binning method: "sturges", "FD", "scott", or numeric.
binwidth	Width of bins (overrides bins if specified)
add_zero	Logical. Add horizontal line at y=0 (default: TRUE)
border_color	Color for histogram outline (default: "white")
...	Additional arguments passed to ggplot2::geom_histogram()

Value

ggplot2 object

Examples

```
ekio_histogram(mtcars, mpg)
ekio_histogram(mtcars, mpg, fill = "steelblue")
ekio_histogram(mtcars, mpg, fill = factor(cyl), palette = "cool")
```

`ekio_lineplot` *EKIO Line Plot*

Description

Professional line plot with smart aesthetic detection.

Usage

```
ekio_lineplot(
  data,
  x,
  y,
  color = NULL,
  palette = NULL,
  add_zero = TRUE,
  line_width = 0.8,
  ...
)
```

Arguments

`data`	A data frame
`x`	X-axis variable (supports data-masking)
`y`	Y-axis variable (supports data-masking)
`color`	Color aesthetic. A color string or variable name.
`palette`	Character. Palette name for variable mappings.
`add_zero`	Logical. Add horizontal line at y=0 (default: TRUE)
`line_width`	Line thickness (default: 0.8)
`...`	Additional arguments passed to `ggplot2::geom_line()`

Value

ggplot2 object

Examples

```
ekio_lineplot(ggplot2::economics, date, unemploy)
```

ekio_orange *EKIO Orange Scale*

Description

Accent color for highlights, warnings, and contrast against blue.

Usage

```
ekio_orange
```

Format

Named character vector with 10 shades (50-900)

Examples

```
ekio_orange["600"]  # Primary orange accent
ekio_orange["300"]  # Soft orange for fills
```

ekio_pal *Get Color Palette*

Description

Returns colors for data visualization. Includes EKIO brand palettes, curated small-group variants, and standard scientific palettes.

Usage

```
ekio_pal(palette = "contrast", n = NULL, reverse = FALSE)
```

Arguments

palette	Character. Name of the palette. See list_ekio_palettes() for all available options.
n	Integer or NULL. Number of colors to return. If NULL, returns all.
reverse	Logical. If TRUE, reverses the palette order.

Value

Character vector of hex color codes

Examples

```
ekio_pal("contrast")
ekio_pal("contrast", n = 4)
ekio_pal("binary", reverse = TRUE)
ekio_pal("okabe_ito")
```

`ekio_scatterplot` *EKIO Scatter Plot*

Description

Professional scatter plot with smart aesthetic detection.

Usage

```
ekio_scatterplot(
  data,
  x,
  y,
  color = NULL,
  size = NULL,
  palette = NULL,
  add_zero = TRUE,
  add_smooth = FALSE,
  smooth_method = "lm",
  point_size = 2.5,
  point_alpha = 0.8,
  ...
)
```

Arguments

`data`	A data frame
`x`	X-axis variable (supports data-masking)
`y`	Y-axis variable (supports data-masking)
`color`	Color aesthetic. A color string or variable name.
`size`	Size aesthetic (optional variable)
`palette`	Character. Palette name for variable mappings.
`add_zero`	Logical. Add horizontal line at y=0 (default: TRUE)
`add_smooth`	Logical. Add smooth trend line (default: FALSE)
`smooth_method`	Smoothing method: "lm", "gam", "loess" (default: "lm")
`point_size`	Base point size (default: 2.5)
`point_alpha`	Point transparency (default: 0.8)
`...`	Additional arguments passed to `ggplot2::geom_point()`

Value

ggplot2 object

Examples

```
ekio_scatterplot(mtcars, wt, mpg)
ekio_scatterplot(mtcars, wt, mpg, color = factor(cyl))
```

---

ekio_teal *EKIO Teal Scale*

Description

Secondary brand color for complementary use.

Usage

```
ekio_teal
```

Format

Named character vector with 10 shades (50-900)

Examples

```
ekio_teal["700"]  # Strong teal
ekio_teal["300"]  # Light teal accent
```

---

fuels *Global Fuel Consumption by Source*

Description

Historical primary energy consumption data by fuel type and entity, spanning from 1800 to the present.

Usage

```
fuels
```

Format

A tibble with 4 variables:

entity Country, region, or aggregated group name (character)
year Year of observation (numeric)
fuel Fuel type: `"gas"`, `"oil"`, or `"coal"` (character)
consumption_gwh Primary energy consumption in gigawatt-hours (numeric)

Source

Our World in Data — Energy https://ourworldindata.org/energy

Examples

```
## Not run:
data(fuels)

# Global consumption over time by fuel type
fuels |>
  dplyr::filter(entity == "World") |>
  ggplot2::ggplot(ggplot2::aes(year, consumption_gwh, color = fuel)) +
  ggplot2::geom_line()

## End(Not run)
```

---

gt_theme_ekio *Apply EKIO Theme to GT Tables*

Description

Professional EKIO branding and styling for gt table objects.

Usage

```
gt_theme_ekio(
  data,
  table_width = "100%",
  font_size = 14,
  stripe = TRUE,
  add_footer = TRUE
)
```

Arguments

`data`	A gt table object
`table_width`	Character. Width of the table (default: "100%")
`font_size`	Numeric. Base font size in pixels (default: 14)
`stripe`	Logical. Apply alternating row striping (default: TRUE)
`add_footer`	Logical. Add automatic EKIO footer (default: TRUE)

Value

A styled gt table object

Examples

```
## Not run:
library(gt)
head(mtcars, 10) |>
  gt() |>
  gt_theme_ekio()

## End(Not run)
```

`ips_brasil` *IPS Brasil 2025 - Social Progress Index for Brazilian Municipalities*

Description

A dataset containing the Social Progress Index rankings for the top 25 most populated Brazilian municipalities in 2025. The IPS Brasil is a comprehensive index that measures social and environmental progress across all 5,570 Brazilian municipalities using 57 indicators.

Usage

```
ips_brasil
```

Format

A data frame with 200 rows (25 municipalities x 8 measures) and 8 variables:

codigo_ibge IBGE municipality code (numeric)

municipio Municipality name (character)

uf State abbreviation (character)

populacao_2022 Population in 2022 (numeric)

measure Indicator measured, one of 8 key social progress indicators (factor)

rank Ranking position among the 25 municipalities for each measure (1-25, numeric)

highlight Municipality name if it's one of the 7 highlighted cities, empty string otherwise (character)

is_highlight Factor indicating if municipality is highlighted (0 or 1)

rank_labels Formatted rank labels showing only positions 1, 5, 10, 15, 20, 25 with ordinal suffix (character)

Details

The dataset focuses on the 25 most populated Brazilian municipalities and includes rankings across 8 key social progress indicators:

Indicators included:

- **Social Progress Index**: Overall composite score
- **GDP per capita**: Economic indicator (2021 data)
- **Water and Sanitation**: Access to basic services
- **Housing Conditions**: Quality of housing infrastructure
- **Safety**: Personal security measures
- **Healthcare and Wellbeing**: Health system performance
- **Avg. ENEM scores**: Educational outcomes (national exam)
- **Share College Educ.**: Percentage of population with higher education

Highlighted municipalities (7 cities with special focus): The dataset highlights 7 specific municipalities for comparison purposes: Sao Paulo (SP), Brasilia (DF), Rio de Janeiro (RJ), Belem (PA), Porto Alegre (RS), Fortaleza (CE), and Recife (PE).

Data transformation: Rankings are calculated where rank 1 = best performance and rank 25 = worst performance among the top 25 most populated cities. The data is in long format with one row per municipality-indicator combination.

Source

IPS Brasil 2025 - Indice de Progresso Social Brasil https://ipsbrasil.org.br/pt

The IPS Brasil is developed by Instituto Imazon and follows the methodology of the Social Progress Imperative, using 57 indicators across three dimensions: Basic Human Needs, Foundations of Wellbeing, and Opportunity.

References

Imazon. (2025). Indice de Progresso Social Brasil 2025. https://imazon.org.br/indice_de_progresso_social_brasil_2025/

Examples

```
## Not run:
# Load the dataset
data(ips_brasil)

# View structure
str(ips_brasil)

## End(Not run)
```

list_ekio_palettes *List Available Palettes*

Description

Returns names of all available palettes, optionally filtered by type.

Usage

```
list_ekio_palettes(type = "all")
```

Arguments

type	Character. Type of palettes to list: "categorical", "small_group", "scientific", "sequential", "diverging", or "all" (default).

Value

Character vector of palette names, or named list if type = "all"

Examples

```
list_ekio_palettes()
list_ekio_palettes("categorical")
list_ekio_palettes("diverging")
```

scale_color_ekio_c *Continuous Color Scale*

Description

Apply sequential or diverging palettes to continuous/numeric data.

Usage

```
scale_color_ekio_c(palette = "blue", reverse = FALSE, ...)

scale_colour_ekio_c(palette = "blue", reverse = FALSE, ...)

scale_fill_ekio_c(palette = "blue", reverse = FALSE, ...)
```

Arguments

palette	Character. Palette name (default: "blue"). See `list_ekio_palettes("sequential")` and `list_ekio_palettes("diverging")` for options.
reverse	Logical. If TRUE, reverses the color order.
...	Additional arguments passed to `ggplot2::scale_color_gradientn()`

Value

A ggplot2 scale object

See Also

scale_fill_ekio_c(), list_ekio_palettes()

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg, color = hp)) +
  geom_point(size = 3) +
  scale_color_ekio_c()

ggplot(mtcars, aes(wt, mpg, color = hp)) +
  geom_point(size = 3) +
  scale_color_ekio_c("purple")
```

---

scale_color_ekio_d *Discrete Color Scale*

Description

Apply qualitative palettes to discrete/categorical data.

Usage

```
scale_color_ekio_d(palette = "contrast", reverse = FALSE, ...)

scale_colour_ekio_d(palette = "contrast", reverse = FALSE, ...)

scale_fill_ekio_d(palette = "contrast", reverse = FALSE, ...)
```

Arguments

palette	Character. Palette name (default: "contrast"). See ekio_pal() for options.
reverse	Logical. If TRUE, reverses the palette order.
...	Additional arguments passed to ggplot2::discrete_scale()

Value

A ggplot2 scale object

See Also

ekio_pal(), scale_fill_ekio_d()

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg, color = factor(cyl))) +
  geom_point(size = 3) +
  scale_color_ekio_d()
```

---

show_all_ekio_palettes *Show All Palettes*

Description

Lists all available palettes organized by type.

Usage

```
show_all_ekio_palettes()
```

Value

NULL (invisibly). Prints palette information to console.

Examples

```
show_all_ekio_palettes()
```

---

show_ekio_palette *Display a Palette*

Description

Visualizes a color palette as a horizontal bar chart with hex labels.

Usage

```
show_ekio_palette(palette, n = NULL, labels = TRUE)
```

Arguments

palette	Character or vector. Either a palette name or a vector of hex colors.
n	Integer. Number of colors (used for interpolation on sequential palettes).
labels	Logical. Show hex codes as labels (default: TRUE).

Value

A ggplot2 object (invisibly)

Examples

```
show_ekio_palette("contrast")
show_ekio_palette(c("#1E3A5F", "#DD6B20", "#2C7A7B"))
```

`theme_ekio` *Apply EKIO Theme to ggplot2 Plots*

Description

A minimal, professional theme for EKIO visualizations built on `ggplot2::theme_minimal()`.

Usage

```
theme_ekio(base_size = 11, base_family = "", grid = "y")
```

Arguments

`base_size`	Numeric. Base font size in points (default: 11)
`base_family`	Character. Font family. Defaults to the platform-appropriate EKIO font via `.get_ekio_font()`.
`grid`	Character. Which major grid lines to show: `"y"` (default), `"x"`, `"xy"`, or `"none"`.

Value

A ggplot2 theme object

`theme_ekio_map` *Apply EKIO Map Theme to ggplot2 Plots*

Description

A variant of `theme_ekio()` with axes and grid removed, suited for choropleth and spatial maps.

Usage

```
theme_ekio_map(base_size = 11, base_family = "")
```

Arguments

base_size	Numeric. Base font size in points (default: 11)
base_family	Character. Font family. Defaults to the platform-appropriate EKIO font via .get_ekio_font().

Value

A ggplot2 theme object

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