Package: statdecideR (via r-universe)

October 17, 2026

Title Automated Statistical Analysis and Plotting with CLD

Version 0.1.6

Description A lightweight tool that provides a reproducible workflow for selecting and executing appropriate statistical analysis in one-way or two-way experimental designs. The package automatically checks for data normality, conducts parametric (ANOVA) or non-parametric (Kruskal-Wallis) tests, performs post-hoc comparisons with Compact Letter Displays (CLD), and generates publication-ready boxplots, faceted plots, and heatmaps. It is designed for researchers seeking fast, automated statistical summaries and visualization. Based on established statistical methods including Shapiro and Wilk (1965) <doi:10.2307/2333709>, Kruskal and Wallis (1952) <doi:10.1080/01621459.1952.10483441>, Tukey (1949) <doi:10.2307/3001913>, Fisher (1925) <ISBN:0050021702>, and Wickham (2016) <ISBN:978-3-319-24277-4>.

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Depends R (>= 4.1)

Imports ggplot2, dplyr, agricolae, effectsize, stringr, stats

NeedsCompilation no

Author Subhradip Bhattacharjee [aut, cre] (ORCID: <https://orcid.org/0000-0003-2330-2979>), Bappa Das [aut, ctb] (ORCID: <https://orcid.org/0000-0003-1286-1492>), Parveen Kumar [aut, ctb] (ORCID: <https://orcid.org/0000-0001-9352-8303>), Rakesh Kumar [aut, ctb] (ORCID: <https://orcid.org/0000-0002-9711-0964>), Amitava Panja [aut, ctb] (ORCID: <https://orcid.org/0000-0002-6226-2933>), Pritam Roy [aut, ctb], Divyacrotu Majumder [aut, ctb], Susanta Dutta [aut, ctb] (ORCID: <https://orcid.org/0000-0003-0885-9744>), Indian Council of Agricultural Research [cph]

Maintainer Subhradip Bhattacharjee <subhradip25@gmail.com>

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`df_nonparam` *Example Data for Non-parametric test*

Description

An example dataset of pollen collection by honeybee at different times and different months.

Usage

```
df_nonparam
```

Format

An object of class `data.frame` with 132 rows and 3 columns.

`run_statdecide` *Run Statistical Decision Workflow*

Description

Automatically checks normality, selects appropriate test (ANOVA or Kruskal-Wallis), performs post-hoc, and visualizes results with compact letter display (CLD). Returns all results as an object with optional console output.

Usage

```
run_statdecide(data, dep_var, group_vars, cld_offset = 5, verbose = TRUE)
```

Arguments

data	A data frame.
dep_var	Character. Name of the dependent variable.
group_vars	Character vector. One or two grouping variables.
cld_offset	Numeric. Vertical offset to place CLD labels above the boxplot (default: 5).
verbose	Logical. Whether to print progress messages and results (default: TRUE).

Value

A list containing:

normality_test Results of Shapiro-Wilk test

main_effects Results for each main effect

interaction Interaction results (if 2 group_vars)

plots List of ggplot objects

facet_plot Faceted ggplot (if 2 group_vars)

heatmap Heatmap ggplot (if 2 group_vars)

Examples

```
# Silent operation
results <- run_statdecide(data = df_nonparam, dep_var = "Pollen",
                          group_vars = c("Month","Time"), verbose = FALSE)

# With console output
run_statdecide(data = df_nonparam, dep_var = "Pollen", group_vars = "Month")
```

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