Package 'projectLSA'

October 23, 2026

Title Shiny Application for Latent Structure Analysis with a Graphical User Interface

Version 0.2.0

Date 2026-10-23

Description Provides an interactive Shiny-based toolkit for conducting latent structure analyses, including Latent Profile Analysis (LPA), Latent Class Analysis (LCA), Latent Trait Analysis (LTA/IRT), Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). The implementation is grounded in established methodological frameworks: LPA is supported through 'tidyLPA' (Rosenberg et al., 2018) <doi:10.21105/joss.00978>, LCA through 'poLCA' (Linzer & Lewis, 2011) <doi:10.32614/CRAN.package
elle, 2025). SEM and CFA functionalities build upon the 'lavaan' framework (Rosseel, 2012) <doi:10.18637/jss.v048.i02>. The CFA/SEM module additionally supports multi-group invariance testing, latent growth modelling, ordinal indicators estimated from polychoric correlations, modification indices, and path diagram visualisation. Every module can save and restore an analysis session and export an 'R Markdown' HTML report whose sections can be drafted with an optional AI assistant. The assistant interprets the current results through one or several large language models reached with user-supplied API keys, including providers with a free tier. The application runs in a responsive HTML interface. Users can upload datasets or use built-in examples, fit models, compare fit indices, visualize results, and export outputs without programming.

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Depends R (>= 4.0.0)

Encoding UTF-8

Imports shinyBS, colourpicker, curl, data.table, dplyr, DT, flextable, ggiraph, ggplot2, glca, haven, jsonlite, kableExtra, knitr, lavaan, magick, mclust, mirt, nnet, officer, plotly, poLCA, psych, purrr, readr, readxl, rlang, rmarkdown, scales, semPlot, semptools, shiny, shinycssloaders, shinyWidgets, stats, stringr, tibble, tidyr, tidyLPA, viridisLite, writexl

Suggests pdftools, pkgdown, semTools, testthat (>= 3.0.0)

VignetteBuilder knitr

URL https://github.com/hdmeasure/projectLSA

BugReports https://github.com/hdmeasure/projectLSA/issues

Config/roxygen2/version 8.0.0

Config/testthat/edition 3

NeedsCompilation no

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`run_projectLSA` *Launch the projectLSA Shiny Application*

Description

This function starts the Shiny app included in the projectLSA package.

Usage

```
run_projectLSA()
```

Value

Launches a Shiny application (no return value)

Examples

```
if (interactive()) {
  projectLSA::run_projectLSA()
}
```

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