EZ-R4Excel: How to do powerful data analysis easily in an EXCEL Environment

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Abstract

Microsoft Excel has become the industry-wide standard spreadsheet software for data storage, management and analysis used by individuals and large corporations. In particular it is used by the pharmaceutical industry for statistical analysis, especially for non-GXP applications.

We present EZ-R4Excel, a novel user-friendly software that extends Excel's statistical functionality with the power of the statistical programming language R. It provides an extensible framework incorporating powerful statistical tools, graphical capabilities and customized data analysis methodologies with the easy-to-use familiar Excel user interface.

EZ-R4Excel provides methods for exploratory analyses and advanced graphical features. It has been successfully adopted by various teams within J&J with applications in in-vivo pharmacology, in-vitro screening, IC50 calculations and modeling, etc.

Advantages of EZ-R4Excel

✓ User is the owner of locally installed application.
✓ Seamlessly integrated within Excel.
✓ Looks and feels exactly like Excel.
✓ User friendly and quick exploratory analysis.
✓ Create customized menus for special applications.
✓ Eliminate manual data formatting and copy/pasting.
✓ Short learning curve.
✓ Methods accessible as menus and formulae.
✓ Standardize analysis methods across experiments.
✓ Improve Efficiency and Quality of analysis.
✓ Traceability of results is easy.

EZ-R4Excel AddIn Features

Data analysis in Excel
✓ Excel is the most widely used software application for data storage and data manipulation.
✓ Excel is a convenient environment to use.
X Major drawback – poor visualization and lack of comprehensive statistical analysis tools.

EZ-R4EXCEL: A PLUG & PLAY FRAMEWORK FOR DATA ANALYSIS IN EXCEL

Parse data using VBA
XML format readable by R

Data in Excel

Statistical analysis in R

Interface with VBA to read & format output from R

General & Customized Statistical Methods and Graphical Capabilities

Anova and Boxplots
Anova from Cell
T-tests and Boxplots

Area under the Curve
Error Bar Plot
Correlation and Heatmaps

Custom PlateView Visualization for High-Throughput Screening

Help Page Utility

Troubleshooting

Raw data

Compound Info

Platemap view