



Compare XLSTAT Packages: Essentials, Standard, and Advanced

XLSTAT provides a comprehensive suite of statistical and data analysis tools designed to meet the needs of both beginner and advanced users.

This document offers an in-depth overview of the features and functionalities included in each XLSTAT package. Whether you're new to data analysis or require advanced tools for complex modeling, this guide will help you select the most suitable XLSTAT package for your needs.

A. The Feature Comparison Table

Quickly compare the core functionalities across XLSTAT's three package levels.

Feature	XLSTAT Essentials	XLSTAT Standard	XLSTAT Advanced
Preparing data	✓	✓	✓
Describing data	✓	✓	✓
Analyzing data	✓	✓	✓
Modeling data	✓	✓	✓
Visualizing data	✓	✓	✓
Testing a hypothesis	✓	✓	✓
Clustering	✓	✓	✓
Statistical Process Control (SPC)	✓	✓	✓
Modeling data (Advanced)		✓	✓
Sensory data analysis		✓	✓
PLS Path Modeling		✓	✓
Marketing tools		✓	✓
Conjoint analysis		✓	✓
Decision aid		✓	✓
Bayesian Networks		✓	✓
Text mining		✓	✓
Multiblock data analysis		✓	✓
Machine learning		✓	✓
Survival analysis			✓
Method validation			✓
Dose effect analysis			✓
OMICS data analysis			✓
POWER analysis			✓
Design of experiments			✓



XLSTAT Feature Comparison Table

Times series analysis	✓
Monte Carlo simulations	✓
Easy Fit / Easy Predict	✓
XLSTAT-R	✓
XLSTAT-RNotebook	✓
DataViz	✓
Workflow Builder	✓
AI Assistant	✓

B. Complete Feature Breakdown by Package

A detailed look at the tools and techniques available in each XLSTAT package.

XLSTAT Essentials Functionalities

Preparing data

- Data sampling
- Distribution sampling
- Discretization
- Coding
- Coding by ranks
- Presence/Absence coding
- Missing data
- Complete disjunctive tables (Creating dummy variables)
- Create contingency tables
- Variables transformation
- Data management
- Data anonymization

Describing data

- Descriptive statistics (including box plots and scattergrams)
- Histograms

Any questions? Contact us at support@lumivero.com



- Normality tests
- Contingency table (descriptive statistics)
- Similarity/Dissimilarity matrices (correlation...)
- Multicollinearity statistics
- Quantiles estimation
- Resampled statistics
- Kernel density estimation
- Variable characterization
- Intelligent Pivot Tables
- Reliability analysis

Analyzing data

- Principal component analysis (PCA)
- Factorial analysis of mixed data (PCAmix)
- Correspondence analysis (CA)
- Multiple correspondence analysis (MCA)
- Factor analysis
- Discriminant analysis (DA)

Modeling data

- Distribution fitting
- Linear regression
- ANOVA (Analysis of variance)
- ANCOVA (Analysis of Covariance)
- Multivariate analysis of variance (MANOVA)
- Logistic regression
- Cubic splines
- Nonlinear regression



Visualizing data

- Scatter plots
- Univariate plots
- Word clouds
- Bar chart race
- Motion charts
- Ternary diagrams
- Semantic differential charts
- Error bars
- EasyLabels
- Plot transformation
- Merge charts
- Resize a chart
- Colors, thickness and size
- Bar charts
- Radar charts
- Funnel charts
- Truncated Barchart
- Parallel coordinates plots
- 2D plots for crosstabs
- Probability plots
- Plot a function
- AxesZoomer
- Orthonormal plot
- Reposition labels
- EasyPoints
- Contour plot and Surface plot

Testing a hypothesis

- Tests for one proportion
- k proportions test
- Two-sample t-test and z-test
- k-sample comparison of variances
- Multinomial goodness of fit test
- One-sample variance test
- Tests for two proportions
- One-sample t-test and z-test
- Two-sample comparison of variances
- Multidimensional tests (Mahalanobis, ...)
- TOST (Equivalence test)
- Comparison of two samples (Wilcoxon, Mann-Whitney, ...)



XLSTAT Feature Comparison Table

- Comparison of two distributions
- Cochran's Q test
- One-sample runs test
- Durbin and Skillings-Mack tests
- Mood test (Median test)
- Tests on contingency tables
- Mantel test
- Biserial correlation
- Grubbs' test for outliers
- Cochran C test for outlying variances
- Comparison of k samples (Kruskal-Wallis, Friedman, ...)
- McNemar's test
- Cochran-Mantel-Haenszel test
- Page test
- One sample Wilcoxon Signed-Rank test
- Correlation tests
- Cochran-Armitage trend test
- RV coefficients
- Dixon test for outliers
- Mandel's h and k statistics for outliers

Clustering

- Agglomerative Hierarchical Clustering (AHC)
- k-means clustering
- Univariate Clustering

Statistical Process Control (SPC)

- Individual charts
- Subgroup charts
- Attribute charts
- Time weighted charts
- Pareto charts
- Gage repeatability and reproducibility (quantitative)
- Gage repeatability and reproducibility for attributes



Tools

- Probability calculator
- Matrix operations
- Clean text data
- Lower and upper case

XLSTAT Standard Functionalities

This package includes the following features on top of all Essentials features.

Preparing data

- Multiple answer questions

Describing data

- Multiway crosstabs generator

Testing a hypothesis

- Friedman-Rafsky test

Analyzing data

- Principal coordinate analysis
- Multidimensional scaling (MDS)
- Gaussian mixture models

Modeling data (Advanced)

- Partial least squares regression (PLS)
- Mixed models
- Two-stage least squares regression
- LASSO regression
- Ridge regression



- Elastic net regression
- Log-linear regression (Poisson regression)
- Quantile regression
- Nonparametric regression (Kernel and Lowess)
- Repeated measures analysis of variance (ANOVA)

Sensory data analysis

- | | |
|---|--|
| • Preference Mapping (PREFMAP) | • Internal preference mapping |
| • Penalty analysis | • Product characterization |
| • Panel analysis | • CATA data analysis |
| • Liking data analysis | • Temporal Dominance of Sensations (TDS) |
| • Time-Intensity | • Generalized Bradley-Terry model |
| • Sensory shelf life analysis | • Design of experiments for sensory discrimination tests |
| • Sensory discrimination tests | • DOE for sensory data analysis |
| • Generalized Procrustes Analysis (GPA) | • CLUSTATIS |
| • STATIS | • TCATA |
| • CATATIS | • Sensory wheel |
| • Free sorting data analysis | • CLUSCATA |
| • Projective mapping data analysis | • Power for sensory discrimination tests |
| • Create Product/assessor table | • RATA data analysis |
| • JAR multivariate analysis | • Flash profiling |
| • R-Index | |



PLS Path Modeling (only for Windows OS)

- PLS path modelling
- Regularized generalized canonical correlation analysis (RGCCA)
- Generalized structured component analysis (GSCA)

Marketing tools

- Sample size calculator
- TURF analysis
- Price sensitivity meter (Van Westendorp)
- Price elasticity of demand
- Customer lifetime value (CLV)
- Customer long-term value (CLTV)
- Raking survey data
- PROCESS moderation and mediation

Bayesian Networks

Conjoint analysis

- Designs for conjoint analysis
- Conjoint analysis
- Designs for choice-based conjoint analysis
- Choice based conjoint analysis
- Designs for MaxDiff
- MaxDiff analysis
- MONANOVA - Monotone regression
- Conditional logit model
- Conjoint analysis simulation tool
- Market generator



Decision aid

- Multicriteria decision aid - ELECTRE methods
- Design of experiments for the analytic hierarchy process (DHP)
- Analytic hierarchy process (AHP)
- Decision trees

Text mining

- Feature extraction
- Latent semantic analysis (LSA)
- Sentiment Analysis
- Term selection
- Fuzzy k-means (Text Mining)

Multiblock data analysis

- Multiple factor analysis (MFA)
- Canonical correspondence analysis (CCA and partial CCA)
- Canonical correlation analysis (CCorA)
- Redundancy analysis (RDA)

Clustering

- Fuzzy k-means clustering
- Gaussian Mixture Models
- DBSCAN (Density-Based Spatial Clustering of Applications with Noise)

Machine learning

- Naive Bayes classifier
- K nearest neighbors (KNN)
- Classification and regression trees
- Classification and regression random forests



- Association rules
- Extreme gradient boosting
- Model performance indicators
- One-class support vector machine
- Support vector machine

XLSTAT Advanced Functionalities

This solution includes the following features on top of all Advanced features.

Survival analysis

- Life table analysis
- Kaplan-Meier analysis
- Cox proportional hazards models
- Proportional Hazards model with interval censored data
- Sensitivity and specificity analysis
- ROC curves
- Nelson-Aalen analysis
- Cumulative incidence
- Parametric survival regression (Weibull model)
- Parametric survival curves
- Propensity score matching
- Illness-Death model

Method validation

- Method comparison (Bland Altman, ...)
- Passing and Bablok regression
- Deming regression
- Youden plots



Dose effect analysis

- Dose effect analysis
- 4/5-parameter parallel lines logistic regression
- Inter-laboratory proficiency testing

OMICS data analysis

- Differential expression
- Heat map

POWER analysis

- Statistical power for mean comparison
- Statistical power to compare variances
- Statistical power for proportion comparison
- Statistical power for linear regression
- Statistical power for ANOVA / ANCOVA / Repeated measures ANOVA
- Statistical power for logistic regression
- Statistical power for Cox model
- Sample size for clinical trials
- Statistical power for correlation comparison

Design of experiments

- Screening designs
- Analysis of a screening design
- Surface response designs
- Analysis of a surface response design
- Analysis of a mixture design
- Taguchi designs



XLSTAT Feature Comparison Table

- Analysis of a Taguchi design
- Mixture designs

Times series analysis

- Mann-Kendall trend tests
- Time series descriptive statistics
- Time series transformation
- Times series visualization
- Smoothing for time series
- ARIMA
- Cointegration test
- Unit root and stationarity tests
- Homogeneity tests for time series
- Heteroscedasticity tests
- Durbin-Watson test
- Cochrane-Orcutt model
- Fourier transform
- Spectral analysis

Monte Carlo simulations

- Define a distribution
- Define a scenario variable
- Define a result variable
- Define a statistic
- Run simulation

Easy Fit / Easy Predict

DataViz



Workflow builder

AI Assistant

- Describe my data • Interpret results

XLSTAT-R

- DAPC
- Dissimilarity matrix for mixed data
- Michaëlis-Menten
- Dirichlet regression
- General additive models (GAM)
- Geostatistics (Kriging)
- Kohonen SOM
- AOVp
- Granger causality test
- Mixed models with multiple outputs
- Panel regression
- Prophet
- X13-ARIMA
- Chow test for structural change
- GARCH modeling
- Permutational multivariate analysis (adonis)
- Similarity percentages (simper)
- Ridgeplot
- Almost ideal demand system (AIDS)
- Partitioning around medoids
- Dip test for unimodality
- Foreign file formats
- Ridge, elastic net and lasso GLM
- Independent component analysis (ICA)
- Two layers Kohonen SOM
- LMP
- Nonlinear regression bootstrap
- Neural networks
- Violin plots
- Rank-based regression
- Spacetime
- Stepwise Cox model regression
- VAR models
- Analysis of similarities (anosim)
- Dissimilarity distances (vegdist)
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XLSTAT-R Notebook