

IBM SPSS Statistics: What's New

Simplify data analysis and optimize business results with new and enhanced features



Highlights

- New procedures, including 11 new Power Analysis procedures to aid with study plan and design
 - Enhancements to existing procedures
 - Access to powerful Data Preparation and Bootstrapping capability in Base Edition
 - Get work done faster with usability and productivity improvements
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IBM SPSS Statistics enables organizations to gather rich insights from data by providing a powerful set of tools to validate assumptions, analyse past performance and forecast trends.

To ensure that the most advanced techniques are available to a broader group of analysts and business users, enhancements have been made to the features and capabilities of the IBM SPSS Statistics portfolio.

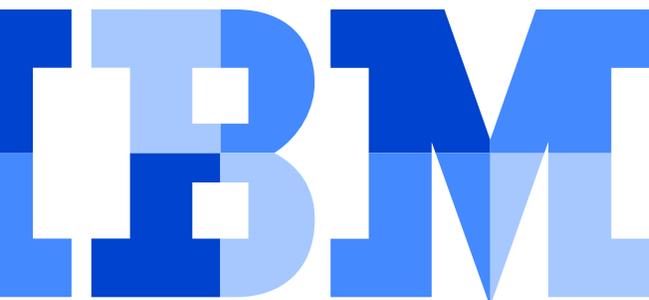
IBM SPSS Statistics 27 increases access to critical tools required for data analysis by making them available as part of the Base Edition. New statistical procedures in Statistics 27 can help plan research projects and better analyse research data.

SPSS Statistics 27 includes the following new features and capabilities

- Packaging improvements to provide more functionality in the Base Edition
- New and advanced statistics included
- New productivity features and usability enhancements

The perpetual editions of SPSS Statistics 27—[Base](#), [Standard](#), [Professional](#) and [Premium](#)—deliver the long-term software access required for analytics groups. These editions group essential features, functionality, and usage requirements to offer a convenient way to acquire the capabilities you need.

Our suite of statistical software is now available in two different purchasing options. For individuals and organizations that require pay-as-you-go software usage, SPSS Statistics Subscription and its optional add-ons provide the desired flexibility. The latest features and functionality are available in both IBM SPSS Statistics Subscription and IBM SPSS Statistics 27.



Additional functionality in the Base Edition

Beginning with SPSS Statistics 27, both the Data Preparation module and Bootstrapping module is included in the Base Edition. This change gives all customers with access to powerful Data Preparation and Bootstrapping capabilities at no additional cost, across all our license types.

The Data Preparation module brings a [suite of capabilities](#) to help you get your data ready quickly so you can focus on analysis. Preparing data is an essential task that can become time intensive and repetitive. Data Preparation capabilities can help you eliminate manual processes with automation, rule-based data validation, anomaly detection, optimal binning capabilities and more. This module was previously only available in the Professional Edition, or purchased as an add-on.

The Bootstrapping module enables you to run bootstrapping analysis from various procedural sub-dialogs. Bootstrapping is a resampling method used to measure accuracy (bias, variance, confidence intervals, prediction error) of sample estimates. Bootstrapping can help uncover properties of estimators for an ‘unknown’ population that might’ve been sampled. This module was previously only available in the Premium Edition or purchased as an add-on.

Modules	Subscription Plan*				Commercial Editions (Perpetual/Term Licenses)				Campus Editions (Perpetual/Term Licenses)		
	Base	CT/AS	CS/T	FC/DT	Base	Standard	Professional	Premium	Base	Standard	Premium
Statistics Base	●				●	●	●	●	●	●	●
Data Preparation	●				●	●	●	●	●	●	●
Bootstrapping	●				●	●	●	●	●	●	●
Advanced Statistics		●				●	●	●		●	●
Regression		●				●	●	●		●	●
Custom Tables		●				●	●	●		●	●
Missing Values			●				●	●			●
Categories			●				●	●			●
Forecasting				●			●	●			●
Decision Trees				●			●	●			●
Neural Networks				●				●			●
Direct Marketing				●				●			●
Complex Samples			●					●			●
Conjoint			●					●			●
Exact Tests			●					●			●
SPSS Amos*** (Windows, Desktop only)					Add-on	Add-on	Add-on	●	Add-on	Add-on	Add-on

CT/AS – Custom Tables & Advanced Statistics Add-on
CS/T – Complex Sampling & Testing Add-on
FC/DT – Forecasting & Decision Trees Add-on

* IBMID required to use the product (work offline up to 14 days)
** Optional add-ons (sold separately)
*** Desktop client only (Purchased separately for Base, Standard and Professional editions), Not available for subscription

● = changes for SPSS Statistics 27

Figure 1. SPSS Statistics 27 Editions, Modules and Licensing options

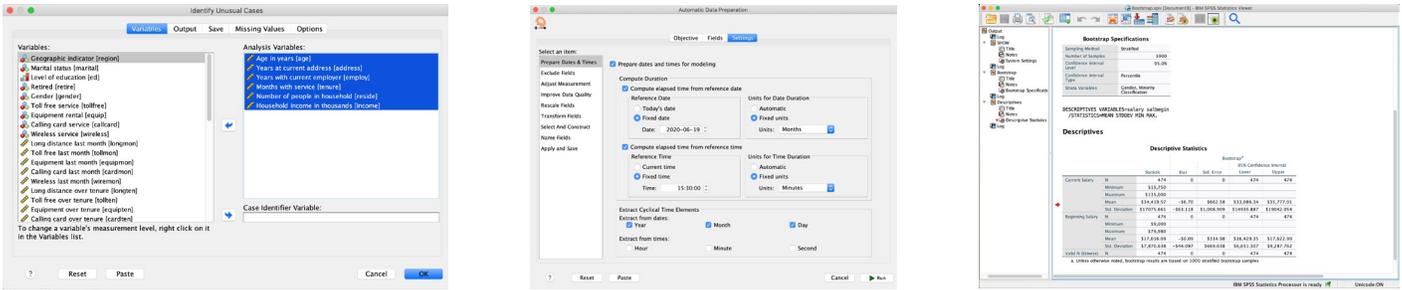


Figure 2. Data Preparation and Bootstrapping

Drive confident research outcomes with new statistical procedures

SPSS Statistics 27 includes the following features, to enable you to improve study planning and data analysis with powerful new statistics and statistical enhancements.

Power Analysis

Power analysis plays a pivotal role in a study plan, design, and conduction. A priori sample size and power analysis can help determine optimum sample sizes for a study or project. When data is difficult or expensive to gather, it is important to know how many observations are necessary for an acceptable probability of detecting specified effects.

SPSS Statistics 27 introduces 11 new power analysis procedures to help you determine the optimal sample size.

All power analysis procedures enable calculation of power for specified sample sizes as well as sample sizes required to achieve desired power. The power analysis feature includes extensive graphical capabilities (including 3-dimensional plots) for displaying power as a function of effect sizes and sample sizes.

11 Power Analysis Procedures

Means:

- One Sample T-Test
- Paired Sample T-Test
- Independent Sample T-Test
- One-way ANOVA

Proportions:

- One-Sample Binomial Test
- Related-Sample Binomial Test
- Independent-Sample Binomial Test

Correlations:

- Pearson Product-Moment
- Spearman Rank-Order
- Partial

Regression:

- Univariate Linear

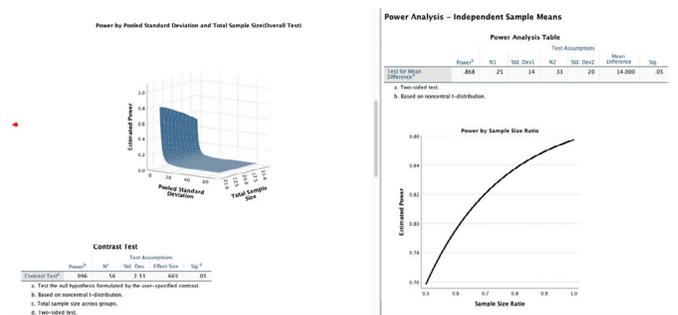


Figure 3. Power Analysis

Weighted Kappa

Also known as Cohen’s weighted kappa, this analytical method is widely used to summarize inter-rater agreement on an ordinal scale and enables the use of weighting schemes to describe the closeness of agreement between raters. SPSS Statistics 27 introduces the following weighted versions of Cohen’s weighted kappa, which is appropriate for ordinal rating scales:

- Linear weighting
- Quadratic weighting
- Confidence intervals for all kappa coefficients

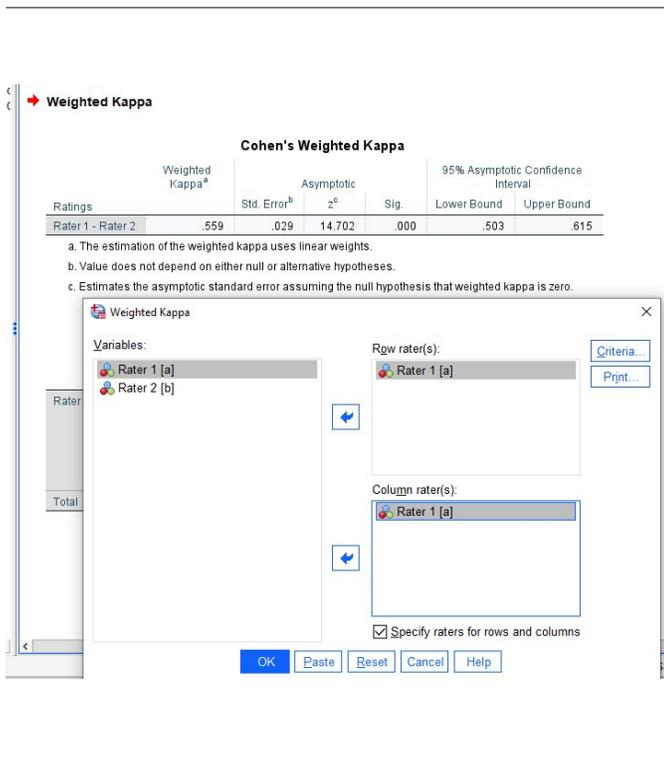


Figure 4. Weighted Kappa Analysis and Output

Procedural Enhancements

SPSS Statistics 27 includes key enhancements to existing procedures, including additional effect sizes.

Effect size enhancements to the t-test and one-way procedures add effect size estimates and confidence intervals for one-sample t-tests, independent-sample t-tests, paired samples t-tests, one-way analysis of variance (ANOVA) and custom contrasts in one-way ANOVAs. Effect size options will be present in the procedure setup dialogs.

SPSS Statistics 27 also includes [enhancements to the MATRIX procedure](#) for advanced users to match options available outside the MATRIX function, to simplify programming of procedures. This new release also includes UI improvements to extend the Quantile Regression procedure to support a grid of quantiles.

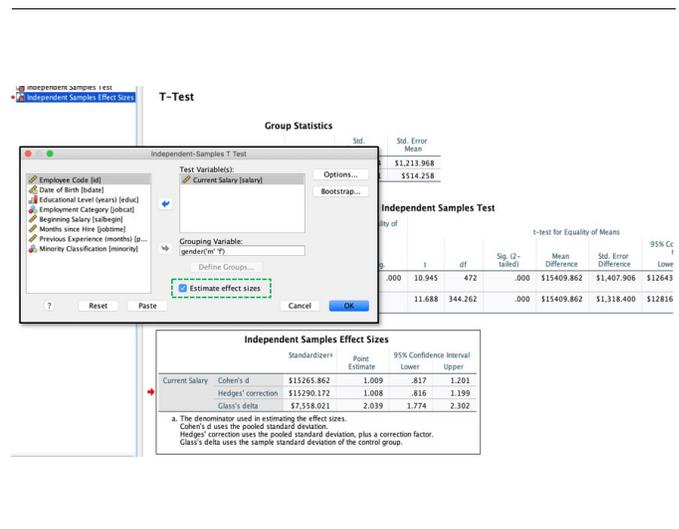


Figure 5. Effect Size enhancements

Usability and Productivity improvements

SPSS Statistics 27 also introduces new features and functionality improvements that aims to improve everyday usability and overall productivity.

Search: Get work done faster with a new search feature in the toolbar. Quickly find in-app dialogs, procedures, syntax commands and discover online help resources using the new internet-enabled search feature.

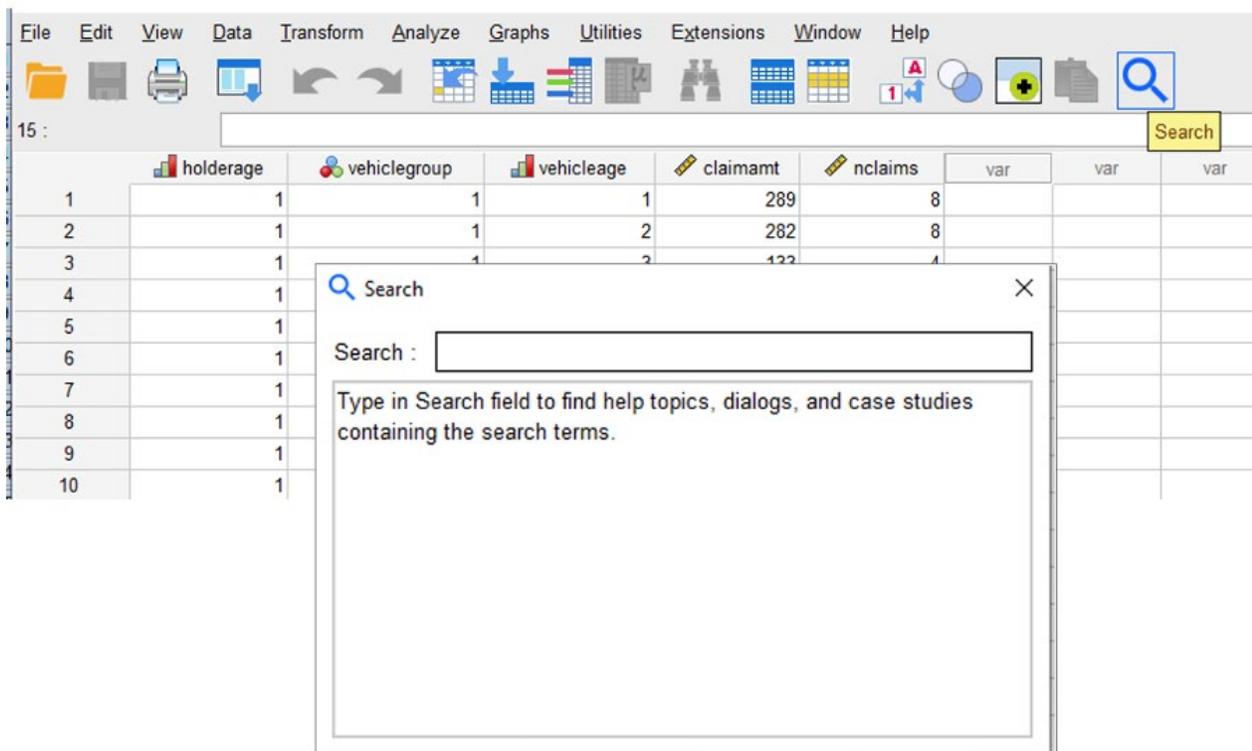


Figure 6. Find procedures, help and syntax commands with ease

AutoRecovery: Minimize inadvertent data loss with automatic user-sessions saved locally. This feature will be enabled by default for most working sessions.

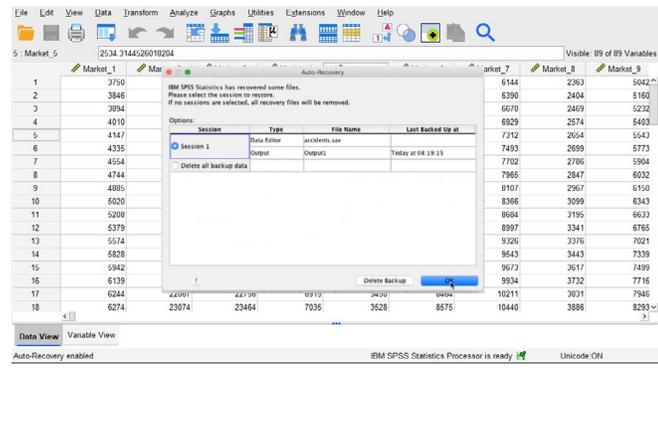


Figure 7. Auto Recovery ensures you don't lose data

Output enhancements: A new bubble chart extends the scatterplot functionality, enabling you to bring a fourth dimension into your reports and visualizations. We've also made it easier to generate APA format output and introduced usability improvements to Chart Builder, chart editor and chart templates.

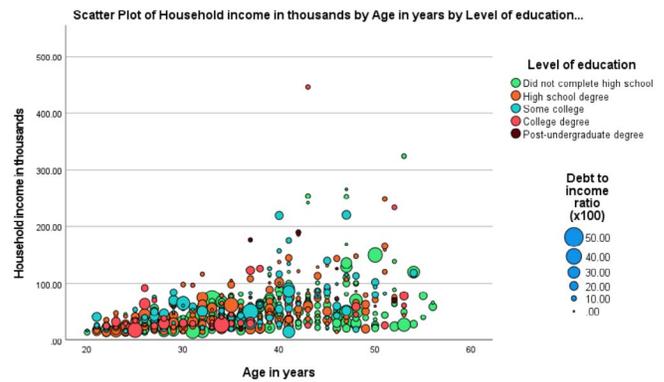


Figure 8. Scatter Plot

Other enhancements

SPSS Statistics 27 includes macOS native experiences to improve usability and includes both stability and performance improvements across all our supported platforms.

Why IBM?

IBM SPSS Statistics is a comprehensive software solution that addresses all facets of the analytical process from data preparation and management to analysis and reporting. You can improve forecasts and plans by imputing missing values with expected values, deliver tables and visualizations to communicate results effectively, classify cases into groups and predict values of a target variables based on values of predictor variables and accurately model linear and non-linear relationships.

Organizations of all types have relied on IBM SPSS Statistics to increase revenue, outmaneuver competitors, conduct research, and data driven decision-making.

For more information

To learn more about IBM SPSS Statistics, start a free trial, or make a purchase, visit our [product page](#).

Next steps

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Produced in the United States of America
June 2020

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