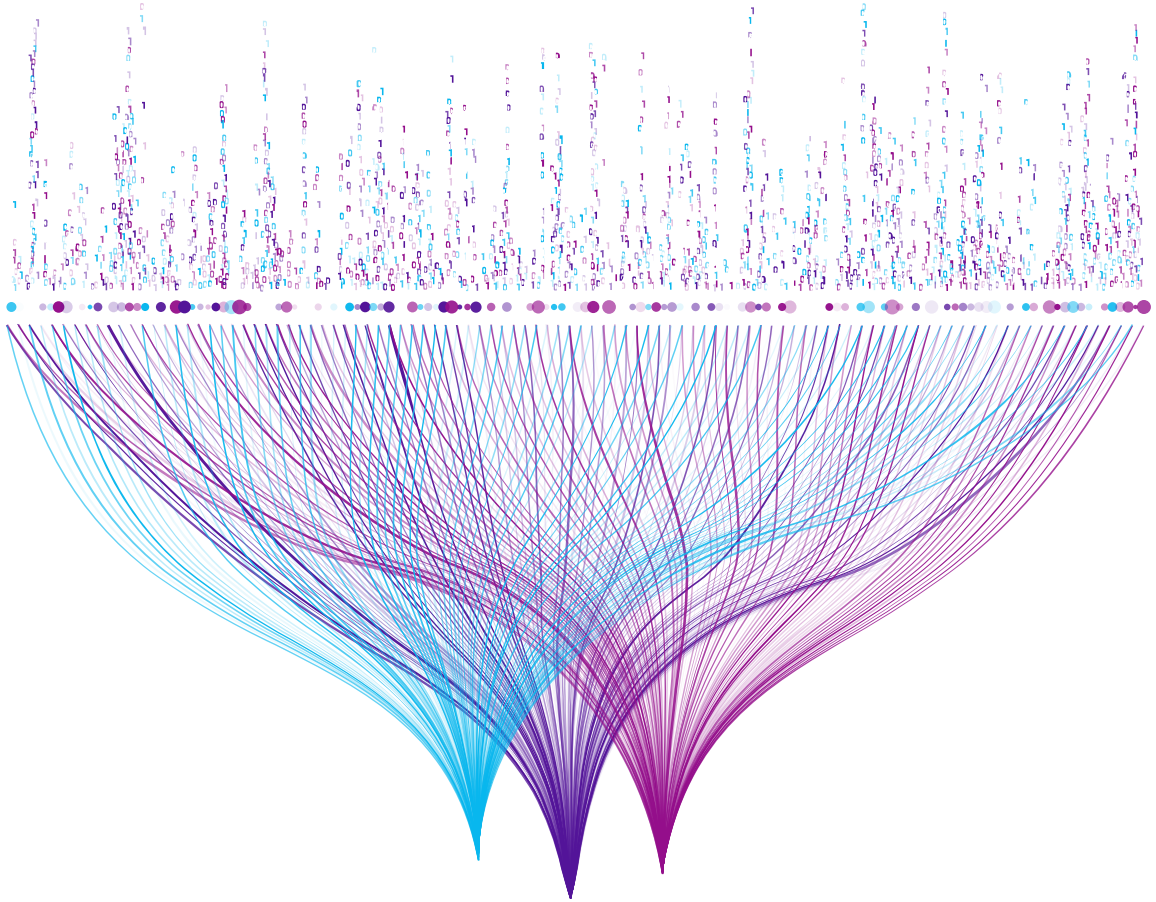
IBM SPSS STATISTICS

Learning Course

SCIENTIA ET PRATIQUE

MTF
INSTITUTE OF MANAGEMENT, TECHNOLOGY & FINANCE

Gain insights from data



Using statistical analysis enables organizations to quickly dig deeper and more effectively into their data than they can by using spreadsheets, databases, or other standard multi-dimensional analytics tools.

Statistics can help data scientists, executives, business analysts, and managers throughout the entire analytics process: from planning, to data collection, analysis, reporting, and through to deployment. Users, from Chief Data Officers (CDOs) to market researchers, can use SPSS statistical analysis to identify the insights they need to succeed, whether that is determining student drop-out risk assessments or picking the next box office hit. No matter the industry or the application, there is always a need to confirm — or deny — the existence of trends in data, and SPSS is the perfect fit for such a task.

Your data consumers used to just be your analysts and data scientists

Now, *everyone* needs access to consumable data for useful insights

Education
Improve outcomes by understanding the factors that lead to drop-outs

Healthcare
Implement a data-driven model of care that improves quality, lowers costs, and drives better outcomes

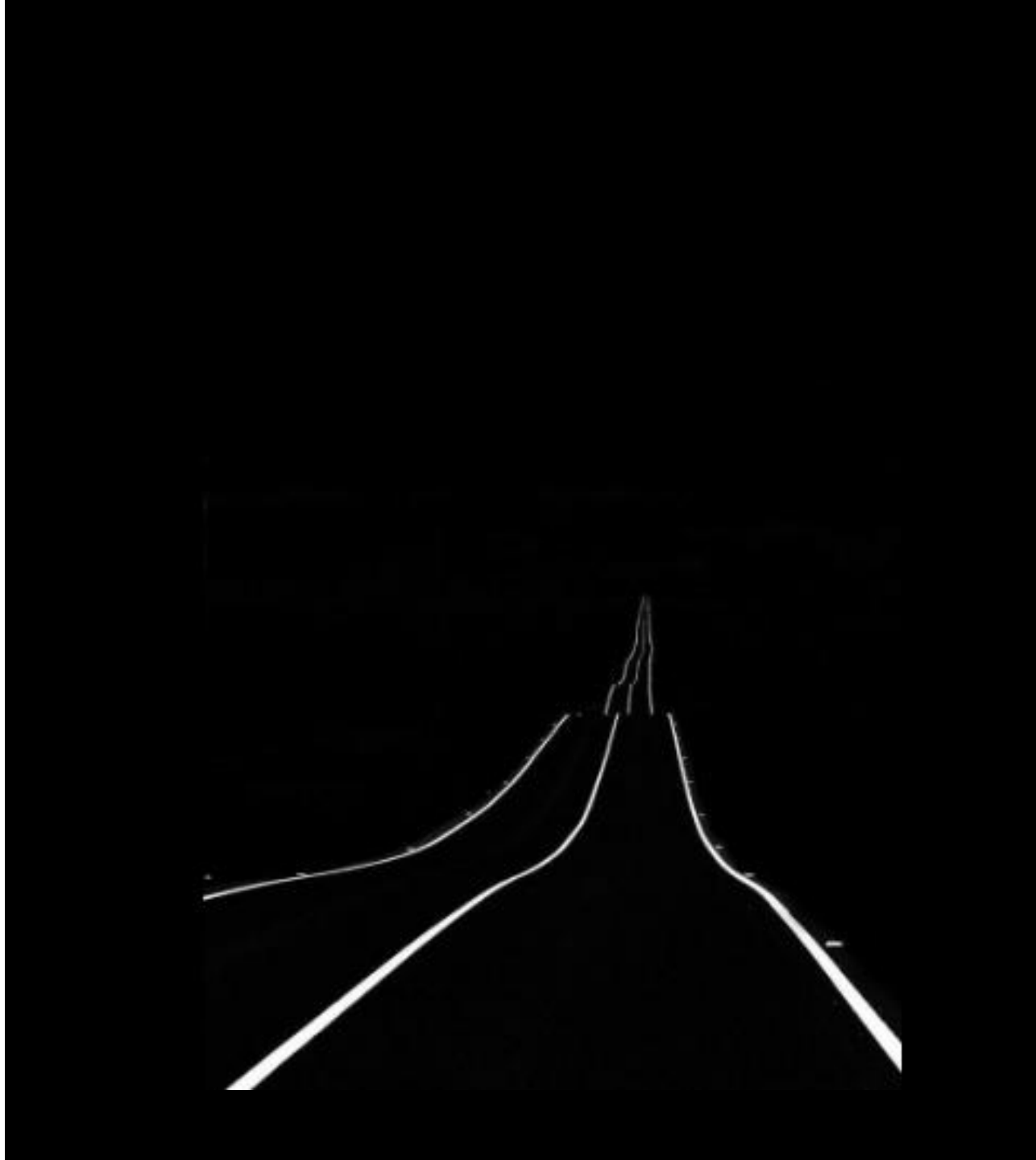
Market research
Gain insights from large-scale customer data

Retail
Better understand customers, make the right offers to consumers, and deliver those offers through the right channels

Government
Improve citizen services, make smarter decisions, manage budgets, and mitigate fraud and threats

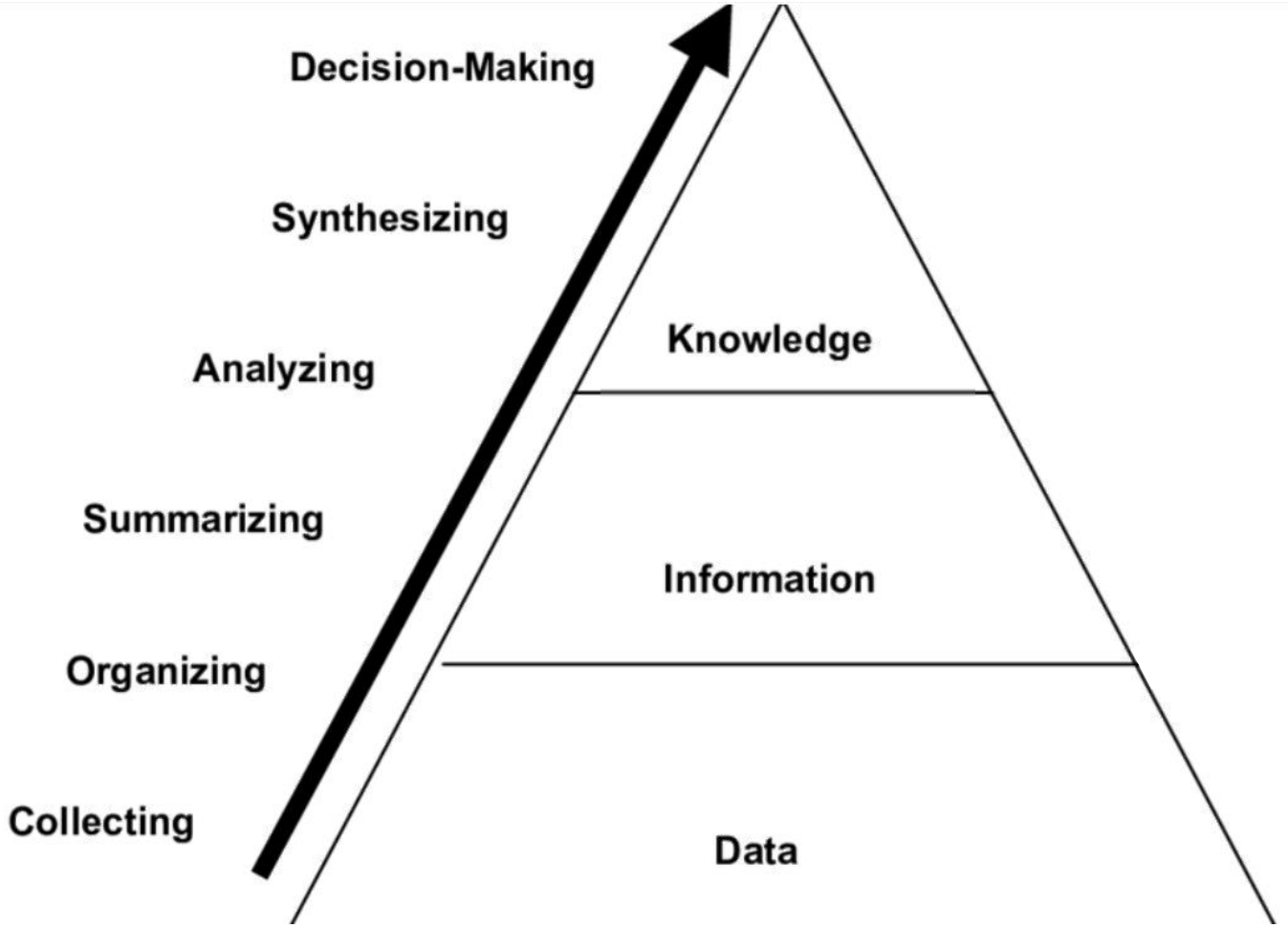
Common challenges that clients face

- Disparate, disconnected sets of tools
- Missing or dirty data
- Inefficient analyses and lackluster analysis results
- Involvement of other parties to complete work



Client needs

- **Manage and transform** data prior to analysis
- **Understand** data, analyze trends, and forecast/plan
- Help users **validate or disprove** assumptions faster



IBM SPSS Statistics

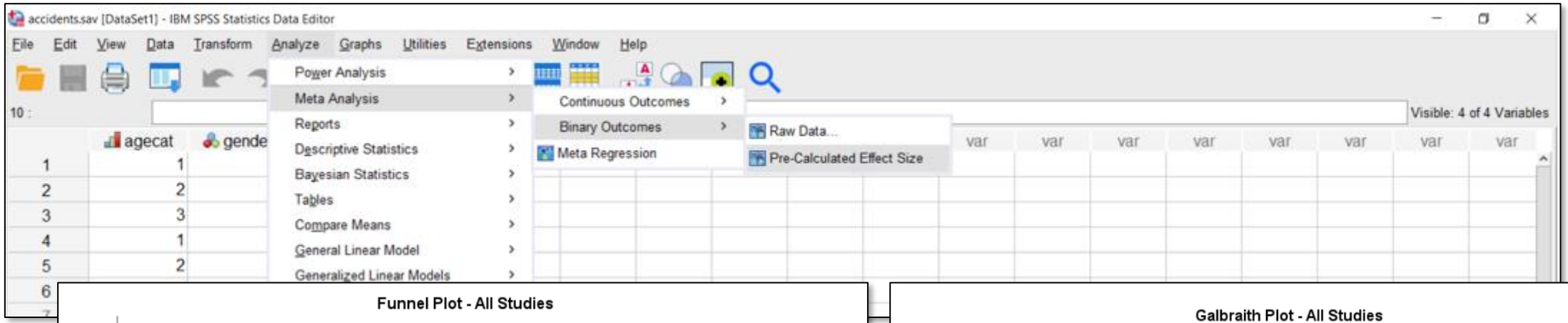
Intuitive, fully-featured statistical software package

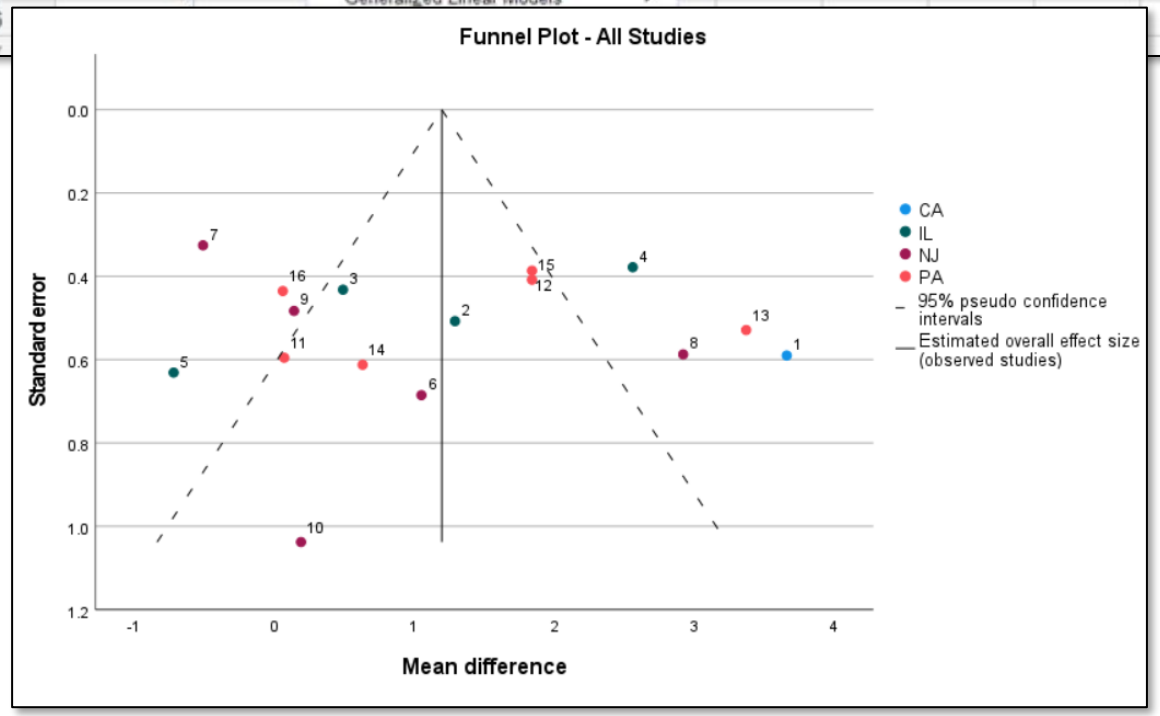
Flexible product packaging

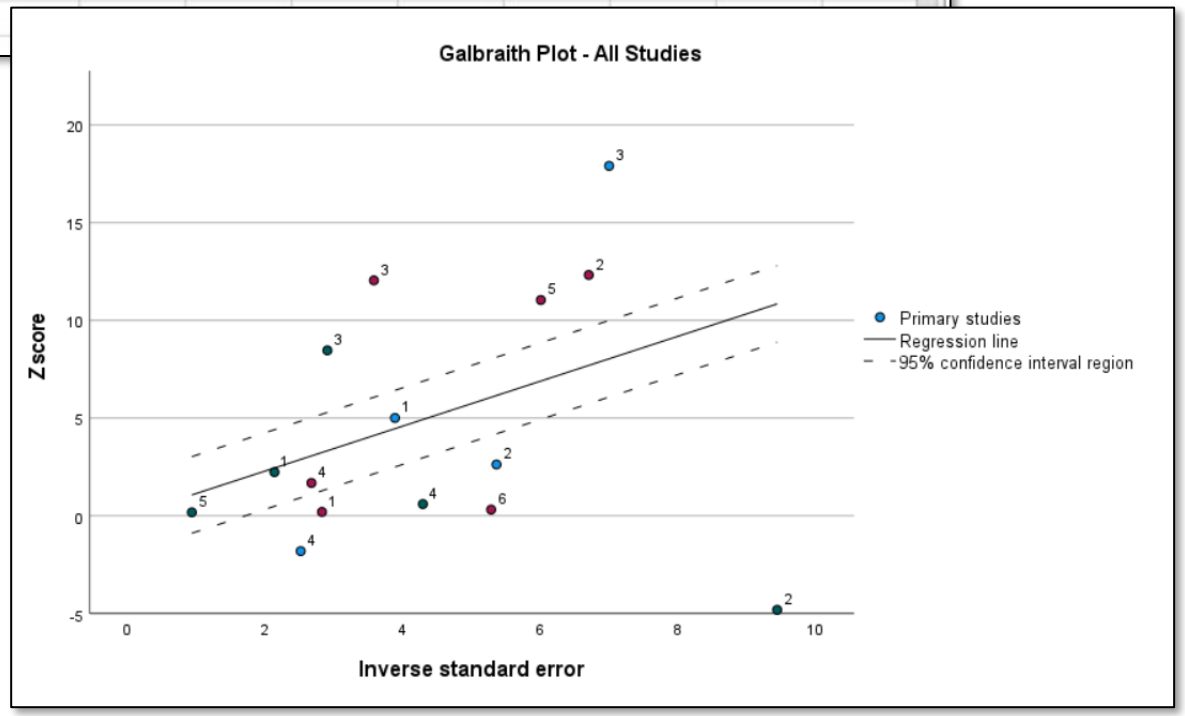
Wide range of integrations

Full spectrum of analytic capabilities

What is SPSS Statistics?







IBM SPSS Statistics software components

SPSS Statistics

Base software for analyzing data and running statistical tests

SPSS Statistics Server

Provides features of SPSS Statistics with faster performance.

SPSS Amos

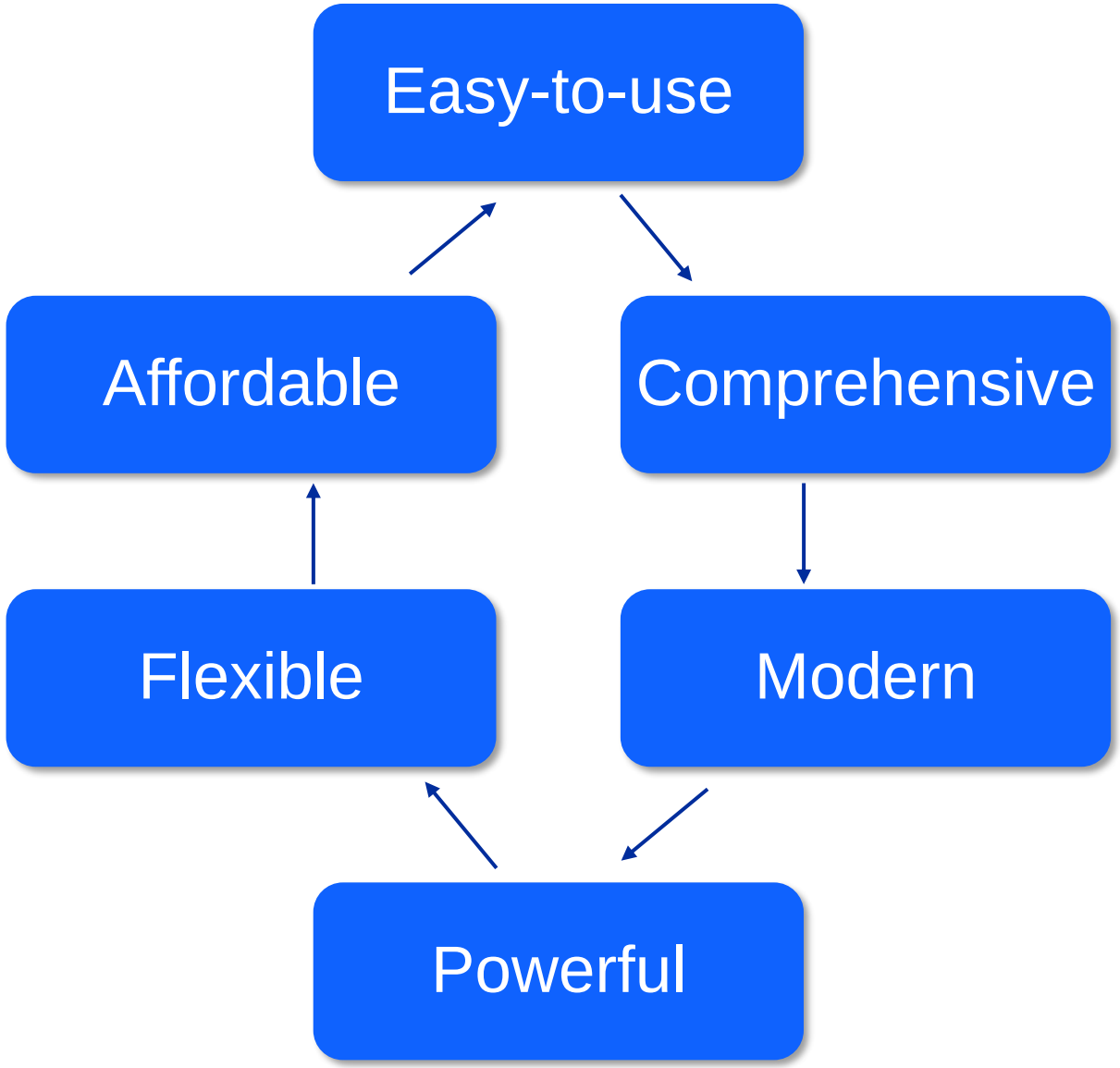
Structural equation modeling software that extends standard multivariate analysis methods

Extensions

Allows integration with tools such as R, Python, and Java

IBM SPSS Statistics

- Covers the entire analytical process
- Intuitive user interface
- Automated data preparation
- Advanced data visualizations
- Flexible product packaging



Fighting crime with data

“SPSS Analytics helps us optimize our operations and make sure we meet targeted response times.”

Valérie Dupire, Counsellor, Police Charleroi

Business problem

With limited staffing, how can Police Charleroi focus on the most important and urgent issues: measuring their effectiveness over time and keeping stakeholders informed?

Solution

Performing statistical analyses on incident data to produce heat-maps and dashboards to help deploy resources in the right places, at the right times

Pushing the boundaries of AI with SPS Srl

“By building on the IBM SPSS platform, we're … helping business users gain deep insights independently & freeing the data science team from the burden of routine analysis tasks.”

Stefano da Col, Sales Director, SPS Srl

Business problem

Take advantage of the increased demand for advanced analytics solutions across industries and maintaining its dominant position

Solution

Build proprietary software solutions that extend IBM SPSS Statistics' built-in capabilities to open up advanced analytics and machine learning to new audiences

Influence Health – predicting required patient services

Business problem

Maximize return on marketing spend, score existing and potential patients on the likelihood that they will need specific healthcare services

Solution

Influence Health builds and runs sophisticated propensity models that can analyze 195 million patient records and predict the likelihood that each prospect will need specific healthcare services, such as medical procedures or courses of treatment for diseases

What clients say about it?

“The real key to how we use SPSS Statistics is the ability to pull SPSS and grab data from our SIS (Student Information System) or any data warehouse during a live conversation and contextualize the conversation to validate if it is a good idea or a bad idea.”

– David Wright, Professor at Wichita State

Additional case studies

- International Medical Corps (Healthcare)
- IMM (Media & Entertainment)
- RAV (Computer Services)

Where to get more information?

3rd-party reports
IBM SPSS Statistics is named a Leader in the G2 Grid report for Best Statistical Software – Spring 2022

IBM SPSS Statistics is named a Leader in the G2 Grid® report for Best Statistical Software – Winter 2020

Tech Talks
Open Source and SPSS Statistics – Better Together

Build powerful visualizations using statistics charting and advanced GPL language

ebooks
Accelerate the Path to Deeper Insights ebook

Interactive smart papers
How industry experts are using IBM SPSS Statistics for better outcomes

Webinars
Better Decision Making in Healthcare with SPSS Statistics

SPSS Statistics: 4 Most Popular Statistical Procedures Using SPSS Statistics

Learn How Industry Experts Are Leveraging Predictive Analytics with SPSS Statistics

Empower your educational institution to make the best decision every time using SPSS Statistics

Videos
Technical Demo videos library

Explore the power of statistical analysis in your organization

How IBM SPSS Statistics compares to competitors

How IBM SPSS Statistics can help academia make better decisions with data

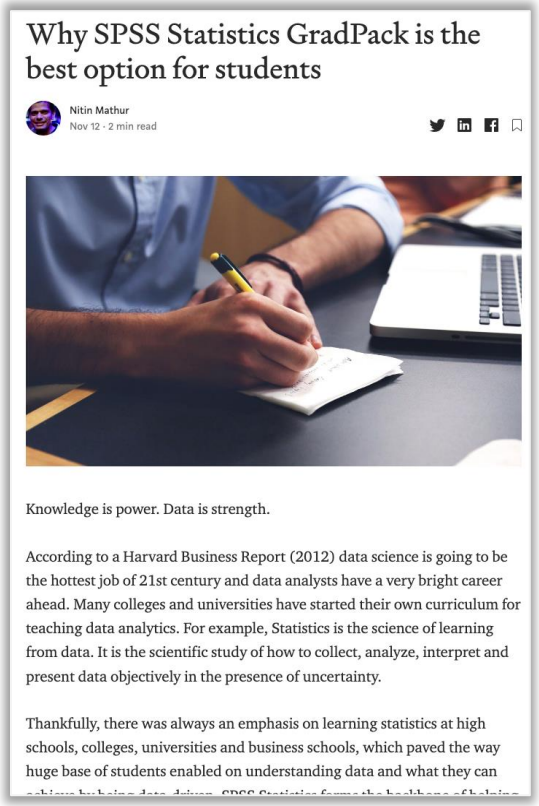
User testimonials
David Wright, SPSS Statistics for Academics

D. Anthony Miles, SPSS Statistics for Market Research

Laura Squier, SPSS Statistics for Government

Blogs: Creating awareness for SPSS and addressing user questions

Why SPSS Statistics GradPack is the best option for students



Why SPSS Statistics GradPack is the best option for students

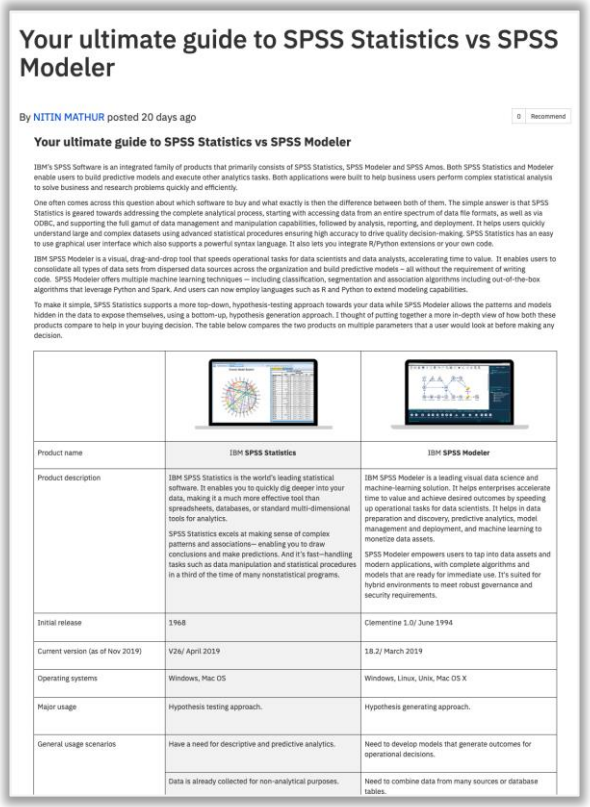
Nitin Mathur
Nov 12 · 2 min read

Knowledge is power. Data is strength.

According to a Harvard Business Report (2012) data science is going to be the hottest job of 21st century and data analysts have a very bright career ahead. Many colleges and universities have started their own curriculum for teaching data analytics. For example, Statistics is the science of learning from data. It is the scientific study of how to collect, analyze, interpret and present data objectively in the presence of uncertainty.

Thankfully, there was always an emphasis on learning statistics at high schools, colleges, universities and business schools, which paved the way huge base of students enabled on understanding data and what they can

Your ultimate guide to SPSS Statistics vs SPSS Modeler



Your ultimate guide to SPSS Statistics vs SPSS Modeler

By NITIN MATHUR posted 20 days ago

Your ultimate guide to SPSS Statistics vs SPSS Modeler

IBM's SPSS Software is an integrated family of products that primarily consists of SPSS Statistics, SPSS Modeler and SPSS Amos. Both SPSS Statistics and Modeler enable users to build predictive models and execute other analytics tasks. Both applications were built to help business users perform complex statistical analysis to solve business and research problems quickly and efficiently.

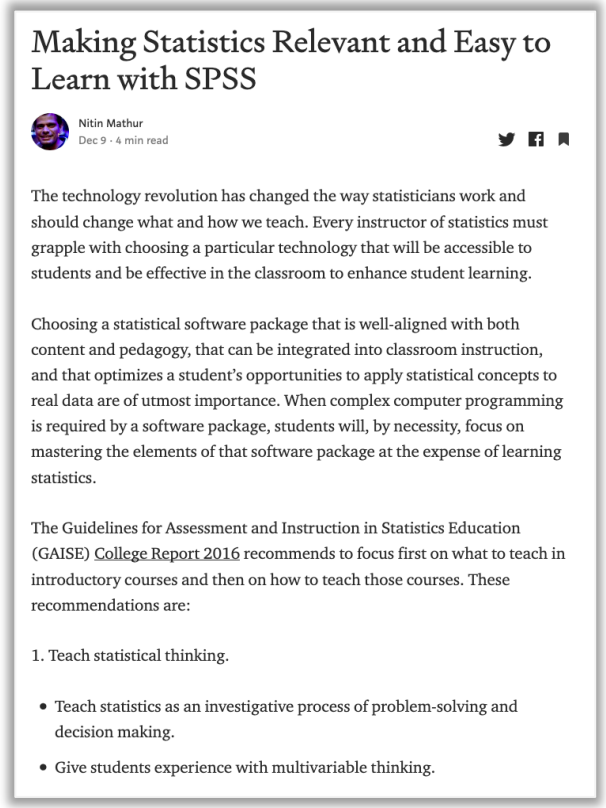
One often comes across this question about which software to buy and what exactly is then the difference between both of them. The simple answer is that SPSS Statistics is geared towards addressing the complete analytical process, starting with accessing data from an entire spectrum of data file formats, as well as via ODBC, and supporting the full gamut of data management and manipulation capabilities, followed by analysis, reporting, and deployment. It helps users quickly understand large and complex datasets using advanced statistical procedures ensuring high accuracy to drive quality decision-making. SPSS Statistics has an easy to use graphical user interface which also supports a powerful syntax language. It also lets you integrate R/Python extensions or your own code.

IBM SPSS Modeler is a visual, drag-and-drop tool that speeds operational tasks for data scientists and data analysts, accelerating time to value. It enables users to consolidate all types of data sets from dispersed data sources across the organization and build predictive models – all without the requirement of writing code. SPSS Modeler offers multiple machine learning techniques — including classification, segmentation and association algorithms including out-of-the-box algorithms that leverage Python and Spark. And users can now employ languages such as R and Python to extend modeling capabilities.

To make it simple, SPSS Statistics supports a more top-down, hypothesis-testing approach towards your data while SPSS Modeler allows the patterns and models hidden in the data to expose themselves, using a bottom-up, hypothesis generation approach. I thought of putting together a more in-depth view of how both these products compare to help in your buying decision. The table below compares the two products on multiple parameters that a user would look at before making any decision.

Product name	IBM **SPSS Statistics**	IBM **SPSS Modeler**
Product description	IBM SPSS Statistics is the world's leading statistical software. It enables you to quickly dig deeper into your data, making it a much more effective tool than spreadsheets, databases, or standard multi-dimensional tools for analytics. SPSS Statistics excels at making sense of complex patterns and associations— enabling you to draw conclusions and make predictions. And it's fast—handling tasks such as data manipulation and statistical procedures in a third of the time of many nonstatistical programs.	IBM SPSS Modeler is a leading visual data science and machine-learning solution. It helps enterprises accelerate time to value and achieve desired outcomes by speeding up operational tasks for data scientists. It helps in data preparation and discovery, predictive analytics, model management and deployment, and machine learning to monetize data assets. SPSS Modeler empowers users to tap into data assets and modern applications, with complete algorithms and models that are ready for immediate use. It's suited for hybrid environments to meet robust governance and security requirements.
Initial release	1968	Clementine 1.0/ June 1994
Current version (as of Nov 2019)	V26/ April 2019	18.2/ March 2019
Operating systems	Windows, Mac OS	Windows, Linux, Unix, Mac OS X
Major usage	Hypothesis testing approach.	Hypothesis generating approach.
General usage scenarios	Have a need for descriptive and predictive analytics.	Need to develop models that generate outcomes for operational decisions.
	Data is already collected for non-analytical purposes.	Need to combine data from many sources or database tables.

Making statistics relevant and easy to learn with SPSS



Making Statistics Relevant and Easy to Learn with SPSS

Nitin Mathur
Dec 9 · 4 min read

The technology revolution has changed the way statisticians work and should change what and how we teach. Every instructor of statistics must grapple with choosing a particular technology that will be accessible to students and be effective in the classroom to enhance student learning.

Choosing a statistical software package that is well-aligned with both content and pedagogy, that can be integrated into classroom instruction, and that optimizes a student's opportunities to apply statistical concepts to real data are of utmost importance. When complex computer programming is required by a software package, students will, by necessity, focus on mastering the elements of that software package at the expense of learning statistics.

The Guidelines for Assessment and Instruction in Statistics Education (GAISE) College Report 2016 recommends to focus first on what to teach in introductory courses and then on how to teach those courses. These recommendations are:

1. Teach statistical thinking.

- Teach statistics as an investigative process of problem-solving and decision making.
- Give students experience with multivariable thinking.

SPSS Demos: Explore advanced statistical procedures with SPSS Statistics

Advanced statistics: Use univariate and multivariate modeling for more accurate conclusions in analyzing complex relationships.
Watch the video (03:29)

Custom tables: Easily summarize large datasets.
Watch the video (02:46)

Regression: Predict categorical outcomes and apply nonlinear regression procedures.
Watch the video (02:37)

Decision trees: Use classification and decision trees to help identify groups and relationships and predict outcomes.
Watch the video (13:49)

Direct marketing: Easily identify the right customers and improve campaign results.
Watch the video (02:46)

Forecasting: Build time-series forecasts regardless
Watch the video (03:14)

Neural networks: Discover complex relationships and improve predictive models.
Watch the video (03:23)

Categories: Predict outcomes and reveal relationships using categorical data.
Watch the video (03:34)

Complex samples: Analyze statistical data and interpret survey results from complex samples.
Watch the video (03:05)

Conjoint: Better understand and measure
Watch the video (03:11)

Exact tests: Reach more accurate conclusions with small samples or rare occurrences.
Watch the video (03:09)

Missing values: Uncover missing data patterns, estimate summary statistics and impute missing values
Watch the video (03:23)

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