



Statistical Data Visualization for Decision Making Training Course

9 – 13 May 2027
Johannesburg

Statistical Data Visualization for Decision Making Training Course

Ref: 822_162289 **Date:** 9 – 13 May 2027 **Location:** Johannesburg **Fees:** 4500 Euro

Overview

Statistical Data Visualization for Decision Making Training Course is a one-week intermediate course for analysts, reporting professionals, planners, managers, and decision-support teams who leave with a Statistical Visualization Decision Pack. Participants frame decision questions, explore distributions and relationships, quantify uncertainty, select appropriate statistical methods, choose honest visual encodings, test claims, build dashboards, and communicate recommendations with limitations. The course distinguishes exploration, inference, prediction, association, and causation. Agile Leaders Training Center develops statistical visualization capability.

Who Should Attend

- Business analysis functions responsible for quantitative evidence, comparisons, and recommendations
- Reporting functions responsible for charts, dashboards, commentary, and quality checks
- Planning functions responsible for forecasts, scenarios, assumptions, and uncertainty
- Performance functions responsible for KPIs, trends, targets, variation, and review meetings
- Management functions responsible for interpreting evidence and making decisions
- Decision-support functions responsible for analysis design, validation, and communication

The course assumes participants can work with tables, percentages, averages, and common charts, and leaves out advanced mathematical statistics, programming, machine-learning engineering, and formal statistics certification preparation.

Departments and Industries

The course supports departments and industries that rely on quantitative evidence and visual communication for decisions.

- Analytics, reporting, planning, performance, finance, and strategy departments
- Operations, quality, marketing, customer experience, risk, and human resources
- Financial services, retail, telecommunications, technology, and professional services
- Manufacturing, logistics, utilities, transport, and facilities operations
- Healthcare, education, hospitality, and public-service organizations

Learning Objectives

By the end of this course, participants will be able to:



- Build decision questions and analytical plans
- Analyze distributions, variation, relationships, and uncertainty
- Apply sampling, estimation, and hypothesis-testing logic
- Choose charts and visual encodings for analytical purpose
- Evaluate claims, assumptions, and limitations
- Build a Statistical Visualization Decision Pack

Course Agenda

Day 1: Frame Decisions and Explore Data

- Decision Question and Evidence Map
- Variable Type and Measurement Guide
- Data Quality and Sampling Review
- Descriptive Statistics Profile
- Exploratory Data Analysis Plan

Day 2: Analyze Distributions and Comparisons

- Center, Spread, Shape, and Outlier Review
- Distribution and Percentile Analysis
- Group Comparison and Effect Summary
- Sampling Error and Confidence Interval
- Comparison Chart Selection Matrix

Day 3: Examine Relationships and Statistical Claims

- Cross-Tabulation and Association Review
- Correlation and Scatterplot Analysis
- Regression Interpretation and Diagnostics
- Hypothesis Test Decision Record
- Association, Prediction, and Causation Check

Day 4: Design Honest Visual Evidence

- Chart Purpose and Encoding Checklist
- Scale, Axis, Baseline, and Normalization Review
- Color, Annotation, and Accessibility Guide
- Uncertainty and Forecast Visualization
- Visual Integrity and Misleading-Chart Audit



Day 5: Communicate Decisions and Limitations

- Decision Dashboard and Evidence Sequence
- Insight, Limitation, and Recommendation Structure
- Executive Statistical Briefing
- Exercise: Audit a Statistical Claim and Chart
- Capstone: Statistical Visualization Decision Pack

Practical Exercises

The course uses suggested activities based on finance, operations, customers, workforce, quality, and service datasets.

- Suggested activity: frame a decision question, classify variables, assess data quality, and prepare an exploratory plan.
- Suggested activity: compare groups, visualize distributions, calculate uncertainty, and document assumptions.
- Suggested activity: evaluate a relationship, interpret statistical output, and separate association from causation.
- Suggested activity: redesign a misleading chart and present a recommendation with evidence and limitations.

FAQs

Who suits statistical data visualization training, and what does it assume?

Analysts, reporting teams, planners, performance professionals, managers, and decision-support functions suit the training; it assumes routine work with tables, percentages, averages, and common charts.

How does exploratory analysis differ from statistical inference?

Exploratory analysis reveals patterns, structure, anomalies, and possible models without beginning from a fixed formal claim. Statistical inference uses defined assumptions and probability methods to estimate uncertainty or test a specified claim.

How should a chart be selected?

Select a chart by the decision question, variable types, analytical purpose, audience, comparison structure, time or geographic context, uncertainty, required detail, and risk of visual distortion—not by decoration or familiarity alone.



Why must uncertainty appear in decision communication?

Uncertainty shows the plausible range around estimates or forecasts, helps decision-makers compare risk, prevents false precision, and clarifies how sample size, variability, assumptions, and model limitations affect conclusions.

How can teams avoid confusing correlation with causation?

Teams should distinguish association from temporal order and causal mechanism, consider confounding factors and selection effects, test alternative explanations, use suitable experimental or quasi-experimental designs, and state conclusions at the strength supported by evidence.

Conclusion

Participants take back a Statistical Visualization Decision Pack containing question maps, variable guides, data checks, descriptive profiles, comparison and relationship analyses, uncertainty records, statistical decisions, chart matrices, integrity audits, dashboards, and briefing templates. It connects statistical reasoning to visual communication without overstating evidence. The pack gives teams a repeatable structure for analysis, review, decision, and explanation.