Contribution ID: **49** Type: **not specified**

JASP for Quality Control: An Open-Source Software for Industrial Statistics

Quality control methods such as measurement systems analysis, control charts, capability studies, and design of experiments are central to modern manufacturing and increasingly used in service industries. However, many established software solutions (e.g., Minitab, JMP) are costly or require substantial technical expertise (e.g., R, Python). In this presentation, we introduce the Quality Control module of JASP, a free and open-source statistical software package with a graphical user interface that does not require programming. The module supports a broad range of methods used in industrial practice, including Type 1 gauge studies, Gauge R&R, linearity studies, attributes agreement analysis, classical (Shewhart) and advanced control charts (e.g., EWMA, CUSUM), process capability analysis for normal and non-normal data, and design of experiments (factorial and response surface designs). Because results update in real time as users adjust settings, JASP allows rapid exploration of analyses, assumptions, and model choices. Beyond quality control, JASP includes a broad range of other statistical tools and modules, including general statistics, Bayesian inference, machine learning, reliability, and time series analysis, among many others, making it a flexible platform for the broader analytical needs of quality professionals. We demonstrate how JASP can serve as an accessible and transparent alternative for quality engineers, Six Sigma practitioners, and other industrial statisticians.

Special/ Invited session

Software invited session

Classification

Mainly application

Keywords

Statistical process control, measurement systems analysis, design of experiments, open-source software

Primary authors: PFADT, Julius (University of Amsterdam); Mr VAN DEN BERGH, Don; BARTOS, Frantisek; GODMANN, Henrik; PETTER, Jonas; VAN DOORN, Johnny; KUCHARSKY, Simon; WAGENMAKERS, Eric-Jan

Presenters: PFADT, Julius (University of Amsterdam); Mr VAN DEN BERGH, Don; BARTOS, Frantisek; GODMANN, Henrik; PETTER, Jonas; VAN DOORN, Johnny; KUCHARSKY, Simon; WAGENMAKERS, Eric-Jan

Track Classification: Other/special session/invited session