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Comparing Two Populations; 3.3.1 Comparing Two Means (Variance Known); 3.3.2 Comparing Two Means (Variance Unknown but Equal); 3.3.3 Comparing Two Means (Variance Unknown and Unequal)
3.3.4 Comparing Two Means (Paired t-test)3.3.5 Comparing Two Standard Deviations; 3.3.6 Comparing Two Proportions; 3.4 Comparing Multiple Populations; 3.4.1 Completely Randomized Design; 3.4.2 Randomized Block Design; 3.4.3 Multiple Comparison Procedures; 3.4.4 Comparing Multiple Standard Deviations; 3.5 Correlation; 3.5.1 Scatter Diagram; 3.5.2 Correlation Coefficient; 3.6 Regression Analysis; 3.6.1 Fitting Equations to Data; 3.6.2 Accelerated Stability Tests; 4 Control Charts; 4.1 Role of Control Charts; 4.2 Logic of Control Limits; 4.3 Variable Control Charts
4.3.1 Average and Range Charts4.3.2 Average and Standard Deviation Charts; 4.3.3 Individual and Moving Range Charts; 4.4 Attribute Control Charts; 4.4.1 Fraction Defective (p) Chart; 4.4.2 Defects per Product (u) Chart; 4.5 Interpreting Control Charts; 4.5.1 Tests for the Chart of Averages; 4.5.2 Tests for Other Charts; 4.6 Key Success Factors; 5 Process Capability; 5.1 Capability and Performance Indices; 5.1.1 C(p) Index; 5.1.2 C(pk) Index; 5.1.3 P(p) Index; 5.1.4 P(pk) Index; 5.1.5 Relationships between C(p), C(pk), P(p), and P(pk); 5.2 Estimating Capability and Performance Indices
5.2.1 Point Estimates for Capability and Performance Indices5.2.2 Confidence Intervals for Capability and Performance Indices; 5.2.3 Connection with Tolerance Intervals; 5.3 Six-Sigma Goal; 5.4 Planning for Improvement; 6 Other Useful Charts; 6.1 Risk-based Control Charts; 6.1.1 Control Limits, Subgroup Size, and Risks; 6.1.2 Risk-Based X Chart; 6.1.3 Risk-Based Attribute Charts; 6.2 Modified Control Limit X Chart; 6.2.1 Chart Design; 6.2.2 Required Minimum C(pk); 6.3 Moving Average Control Chart; 6.4 Short-Run Control Charts; 6.4.1 Short-Run Individual and Moving Range Charts
6.4.2 Short-Run Average and Range Charts

Sommario/riassunto

A guide to achieving business successes through statistical methods Statistical methods are a key ingredient in providing data-based guidance to research and development as well as to manufacturing. Understanding the concepts and specific steps involved in each statistical method is critical for achieving consistent and on-target performance. Written by a recognized educator in the field, Statistical Methods for Six Sigma: In R&D and Manufacturing is specifically geared to engineers, scientists, technical managers, and other technical professionals in industry. Emphasizing practical learni