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Nota di contenuto	Statistical Methods forQuality Improvement; Contents; Preface; Preface to the Second Edition; Preface to the First Edition; PART I FUNDAMENTAL QUALITY IMPROVEMENT AND STATISTICAL CONCEPTS; 1 Introduction; 1.1 Quality and Productivity; 1.2 Quality Costs (or Does It?); 1.3 The Need for Statistical Methods; 1.4 Early Use of Statistical Methods for Improving Quality; 1.5 Influential Quality Experts; 1.6 Summary; References; 2 Basic Tools for Improving Quality; 2.1 Histogram; 2.2 Pareto Charts; 2.3 Scatter Plots; 2.3.1 Variations of Scatter Plots; 2.4 Control Chart; 2.5 Check Sheet 2.6 Cause-and-Effect Diagram2.7 Defect Concentration Diagram; 2.8 The Seven Newer Tools; 2.8.1 Affinity Diagram; 2.8.2 Interrelationship Digraph; 2.8.3 Tree Diagram; 2.8.4 Prioritization Matrix; 2.8.5 Matrix Diagram; 2.8.6 Process Decision Program Chart; 2.8.7 Activity Network Diagram; 2.9 Software; 2.10 Summary; References; Exercises; 3 Basic

Concepts in Statistics and Probability; 3.1 Probability; 3.2 Sample Versus Population; 3.3 Location; 3.4 Variation; 3.5 Discrete Distributions; 3.5.1 Binomial Distribution; 3.5.2 Beta-Binomial Distribution; 3.5.3 Poisson Distribution  
 3.5.4 Geometric Distribution 3.5.5 Negative Binomial Distribution; 3.5.6 Hypergeometric Distribution; 3.6 Continuous Distributions; 3.6.1 Normal Distribution; 3.6.2 t Distribution; 3.6.3 Exponential Distribution; 3.6.4 Lognormal Distribution; 3.6.5 Weibull Distribution; 3.6.6 Extreme Value Distribution; 3.6.7 Gamma Distribution; 3.6.8 Chi-Square Distribution; 3.6.9 Truncated Normal Distribution; 3.6.10 Bivariate and Multivariate Normal Distributions; 3.6.11 F Distribution; 3.6.12 Beta Distribution; 3.6.13 Uniform Distribution; 3.7 Choice of Statistical Distribution; 3.8 Statistical Inference  
 3.8.1 Central Limit Theorem 3.8.2 Point Estimation; 3.8.2.1 Maximum Likelihood Estimation; 3.8.3 Confidence Intervals; 3.8.4 Tolerance Intervals; 3.8.5 Hypothesis Tests; 3.8.5.1 Probability Plots; 3.8.5.2 Likelihood Ratio Tests; 3.8.6 Bonferroni Intervals; 3.9 Enumerative Studies Versus Analytic Studies; References; Exercises; PART II CONTROL CHARTS AND PROCESS CAPABILITY; 4 Control Charts for Measurements With Subgrouping (for One Variable); 4.1 Basic Control Chart Principles; 4.2 Real-Time Control Charting Versus Analysis of Past Data  
 4.3 Control Charts: When to Use, Where to Use, How Many to Use 4.4 Benefits from the Use of Control Charts; 4.5 Rational Subgroups; 4.6 Basic Statistical Aspects of Control Charts; 4.7 Illustrative Example; 4.7.1 R-Chart; 4.7.2 R-Chart with Probability Limits; 4.7.3 S-Chart; 4.7.4 S-Chart with Probability Limits; 4.7.5 S<sup>2</sup>-Chart; 4.7.6 X-Chart; 4.7.7 Recomputing Control Limits; 4.7.8 Applying Control Limits to Future Production; 4.7.9 Combining an X- and an S-Chart; 4.7.10 Standards for Control Charts; 4.7.11 Deleting Points; 4.7.12 Target Values; 4.8 Illustrative Example with Real Data  
 4.9 Determining the Point of a Parameter Change

## Sommario/riassunto

Praise for the Second Edition "'As a comprehensive statistics reference book for quality improvement, it certainly is one of the best books available.'" -Technometrics This new edition continues to provide the most current, proven statistical methods for quality control and quality improvement The use of quantitative methods offers numerous benefits in the fields of industry and business, both through identifying existing trouble spots and alerting management and technical personnel to potential problems. Statistical Methods for Quality Improve