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Nota di contenuto	DESIGN AND ANALYSIS OF SENSORY OPTIMIZATION; PREFACE; CONTENTS; 1. INTRODUCTION; 1.1 Statistical Inference; 1.2 Experimental Design; 1.3 Sample Size; 1.4 Randomization; 1.5 Analysis of Variance; 1.6 Multiple Comparison Tests; Duncan's Multiple Range Test; Rank Sum Multiple Comparison Test; 1.7 Some Useful Tools for Data Analysis; Deviation from the Mean; Rejection of Outlying Observations; Test Procedures; 2. DESIGNS FOR COMPARING TWO POPULATIONS; 2.1 Paired Comparison Design; 2.2 Group Comparison Design; 3. COMPLETELY RANDOM AND RANDOMIZED COMPLETE BLOCK DESIGN 3.1 Completely Randomized Design3.2 Randomized Complete Block Design; 4. INCOMPLETE BLOCK DESIGNS; 4.1 Balanced Incomplete Block Design; 4.2 Incomplete Blocks Augmented with Control; 5. CROSSOVER DESIGN; 5.1 Crossover Design in Home-Use Consumer Tests; 5.2 Rating Scale Response; 5.3 Binary Response; 5.4 Analysis of Data with Carry-Over Effects; 6. FRACTIONAL FACTORIAL DESIGN FOR FACTORS AT TWO LEVELS; 6.1 The 2k Factorial Designs; The 22 Factorial Design; Estimate of Average Factor Effects; The 23 Factorial Design; Addition of

Center Point in 2k Factorial Design; 6.2 One-Half Fraction of 24
6.3 One-Half and One-Fourth Fraction of 2k7. SCALING METHODS; 7.1 Sensory Measurements; Nominal Scale; Ordinal Scale; Interval Scale; Ratio Scale; 7.2 The Thurstone-Mosteller Model; 7.3 Ranking Method; Rank Scaling in Balanced Incomplete Block Designs; 7.4 Transitivity Property of Paired Comparison; 7.5 Scaling Consumer Acceptance; In-House Consumer Test; Home-Use Test; Central Location Test; Questionnaire Design; 8. PRODUCT OPTIMIZATION; 8.1 Preliminaries; Test for Adequacy of Statistical Model; Least Squares Estimation of Regression Parameters; 8.2 Why Use Optimization Technique?
8.3 Types of Optimization ExperimentsNonmixture Experiments; Mixture Experiments; Space Configuration of Nonmixture and Mixture Designs; 8.4 Plackett and Burman Design; 8.5 Box and Behnken Design; 8.6 Box and Wilson Design; 8.7 Mixture Designs; Mixture Models; Scheffe Simplex-Lattice Design; Scheffk Simplex-Centroid Design; Designs with Constraints on Proportion; 8.8 Search for Optimum Areas in Response Surfaces; 8.9 Use of Contour Maps in Product Reformulation; 8.10 Augmentation of Fractional Factorial Design; The Augmented 1/2 Fraction of 24; The Augmented 1/2 and 114 Fractions of 25
The Augmented 1/4 Fraction of 268.11 Precaution of Fraction Factorial Designs; 8.12 Optimization of Discrete Variables; Discrete Variable Optimization; Optimization of Discrete and Continuous Variables; 8.13 Optimization for Robustness; The Taguchi Method; Types of Quality Characteristics; Problems with Perceived Quality Characteristics; The Measurement of Quality; Scales for Perceived Quality; The Use of Signal-to-Noise Ratio in Formula Selection; 9. CLAIM SUBSTANTIATION; 9.1 Claim Substantiation Guidelines; 9.2 Testing of Claims Hypothesis; 9.3 Experimental Design and Claims Support
9.4 Test for Equivalence and Superiority

Sommario/riassunto

This book discusses experimental designs which are very useful in sensory and consumer testing. As an added feature this coverage is fully illustrated with real-life examples. In addition, the importance of fractional factorial designs are explained more fully than in books now available. The heart of this book is product optimization which covers in great detail designs and analysis of optimization studies with consumers. A rundown of this chapter includes: preliminaries, test for adequacy of statistical model and least squares estimation of regression parameters; why use optimization