

1. Record Nr.	UNINA9910830159603321
Autore	Searle S. R (Shayle R.), <1928->
Titolo	Variance components [[electronic resource] /] / Shayle R. Searle, George Casella, Charles E. McCulloch
Pubbl/distr/stampa	New York, : Wiley, c1992
ISBN	1-282-30740-1 9786612307409 0-470-31685-3 0-470-31769-8
Descrizione fisica	1 online resource (537 p.)
Collana	Wiley series in probability and mathematical statistics. Applied probability and statistics
Altri autori (Persone)	CasellaGeorge McCullochCharles E
Disciplina	519.5 519.538
Soggetti	Analysis of variance Mathematical statistics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"A Wiley-Interscience publication."
Nota di bibliografia	Includes bibliographical references (p. 475-489) and indexes.
Nota di contenuto	Variance Components; CONTENTS; 1. Introduction; 1.1. Factors, levels, cells and effects; 1.2. Balanced and unbalanced data; a. Balanced data; b. Special cases of unbalanced data; -i. Planned unbalancedness; -ii. Estimating missing observations; c. Unbalanced data; 1.3. Fixed effects and random effects; a. Fixed effects models; Example 1 (Tomato varieties); Example 2 (Medications); Example 3 (Soils and, fertilizers); b. Random effects models; Example 4 (Clinics); Example 5 (Dairy bulls); Example 6 (Ball bearings and calipers); c. Mixed models; Example 7 (Medications and clinics) Example 8 (Varieties and gardens)1.4. Fixed or random?; Example 9 (Mice and technicians); 1.5. Finite populations; 1.6. Summary; a. Characteristics of the fixed effects model and the random effects model for the I-way classification; b. Examples; c. Fixed or random; 2. History and Comment; 2.1. Analysis of variance; 2.2. Early years: 1861-1949; a. Sources; b. Pre-1900; C. 1900-1939; -i. R. A. Fisher; -ii. L. C. Tippett; -iii. The late 1930s; -iv. Unbalanced data; d. The 1940s; 2.3.

Great strides: 1950-1969; a. The Henderson methods; b. ANOVA estimation, in general; -i. Negative estimates
 -ii. Unbiasedness-iii. Best unbiasedness; -iv. Minimal sufficient statistics; -v. Lack of uniqueness; 2.4 Into the 1970s and beyond; a. Maximum likelihood (ML); b. Restricted maximum likelihood (REML); c. Minimum norm estimation; d. The dispersion-mean model; e. Bayes estimation; f. The recent decade; 3. The I-Way Classification; 3.1. The model; a. The model equation; b. First moments; c. Second moments; 3.2. Matrix formulation of the model; a. Example 1; b. The general case; c. Dispersion matrices; -i. The traditional random model; -ii. Other alternatives; d. Unbalanced data; -i. Example 2
 -ii. The general case-iii. Dispersion matrix; 3.3 Estimating the mean; 3.4 Predicting random effects; 3.5 ANOVA estimation-balanced data; a. Expected sums of squares; -i. A direct derivation; -ii. Using the matrix formulation; b. ANOVA estimators; c. Negative estimates; d. Normality assumptions; -i. χ^2 -distributions of sums of squares; -ii. Independence of sums of squares; -iii. Sampling variances of estimators; -iv. An F-statistic to test $H: \sigma^2/a = 0$; -v. Confidence intervals; -vi. Probability of a negative estimate; -vii. Distribution of estimators; 3.6 ANOVA estimation-unbalanced data
 a. Expected sums of squares-i. A direct derivation; -ii. Using the matrix formulation; b. ANOVA estimators; c. Negative estimates; d. Normality assumptions; -i. χ^2 -distributions of sums of squares; -ii. Independence of sums of squares; -iii. Sampling variances of estimators; -iv. The effect of unbalancedness on sampling variances; -v. F-statistics; -vi. Confidence intervals; 3.7. Maximum likelihood estimation; a. Balanced data; -i. Likelihood; -ii. ML equations and their solutions; -iii. ML estimators; -iv. Expected values and bias; -v. Sampling variances; b. Unbalanced data; -i. Likelihood
 -ii. ML equations and their solutions

Sommario/riassunto

WILEY-INTERSCIENCE PAPERBACK SERIES The **Wiley-Interscience Paperback Series** consists of selected books that have been made more accessible to consumers in an effort to increase global appeal and general circulation. With these new unabridged softcover volumes, Wiley hopes to extend the lives of these works by making them available to future generations of statisticians, mathematicians, and scientists. ". . . *Variance Components* is an excellent book. It is organized and well written, and provides many references to a variety of topics. I recommend it to anyone with inte