

1. Record Nr.	UNINA9910830017203321
Autore	Liao Tim Futing
Titolo	Statistical group comparison [[electronic resource] /] / Tim Futing Liao
Pubbl/distr/stampa	New York, : Wiley-Interscience, c2002
ISBN	1-283-29484-2 9786613294845 1-118-20421-2 1-118-15061-9
Descrizione fisica	1 online resource (240 p.)
Collana	Wiley series in probability and statistics
Disciplina	519.5
Soggetti	Mathematical statistics Statistics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 199-206) and index.
Nota di contenuto	Statistical Group Comparison; Contents; Preface; 1. Introduction; 1.1 Rationale for Statistical Comparison; 1.2 Comparative Research in the Social Sciences; 1.3 Focus of the Book; 1.4 Outline of the Book; 1.4.1 Chapter 2-Statistical Foundation for Comparison; 1.4.2 Chapter 3-Comparison in Linear Regression; 1.4.3 Chapter 4-Nonparametric Comparison; 1.4.4 Chapter 5-Comparing Rates; 1.4.5 Chapter 6-Comparison in Generalized Linear Models; 1.4.6 Chapter 7-Additional Topics of Comparison in Generalized Linear Models; 1.4.7 Chapter 8-Comparison in Structural Equation Modeling 1.4.8 Chapter 9-Comparison with Categorical Latent Variables1.4.9 Chapter 10-Comparison in Multilevel Analysis; 1.4.10 Summary; 2. Statistical Foundation for Comparison; 2.1 A System for Statistical Comparison; 2.2 Test Statistics; 2.2.1 The $\chi^2$ Test; 2.2.2 The t-Test; 2.2.3 The F-test; 2.2.4 The Likelihood Ratio Test; 2.2.5 The Wald Test; 2.2.6 The Lagrange Multiplier Test; 2.2.7 A Summary Comparison of LRT WT and LMT; 2.3 What to Compare?; 2.3.1 Comparing Distributions; 2.3.2 Comparing Data Structures; 2.3.3 Comparing Model Structures; 2.3.4 Comparing Model Parameters 3. Comparison in Linear Models3.1 Introduction; 3.2 An Example; 3.3 Some Preliminary Considerations; 3.4 The Linear Model; 3.5 Comparing

Two Means; 3.6 ANOVA; 3.7 Multiple Comparison Methods; 3.7.1 Least Significance Difference Test; 3.7.2 Tukey's Model; 3.7.3 Scheffe's Method; 3.7.4 Bonferroni's Method; 3.8 ANCOVA; 3.9 Multiple Linear Regression; 3.10 Regression Decomposition; 3.10.1 Rationale; 3.10.2 Algebraic Presentation; 3.10.3 Interpretation; 3.10.4 Extension to Multiple Regression; 3.11 Which Linear Method to Use?; 4. Nonparametric Comparison; 4.1 Nonparametric Tests  
 4.1.1 Kolmogorov-Smirnov Two-Sample Test; 4.1.2 Mann-Whitney U-Test; 4.2 Resampling Methods; 4.2.1 Permutation Methods; 4.2.2 Bootstrapping Methods; 4.3 Relative Distribution Methods; 5. Comparison of Rates; 5.1 The Data; 5.2 Standardization; 5.2.1 Direct Standardization; 5.2.2 Indirect Standardization; 5.2.3 Model-Based Standardization; 5.3 Decomposition; 5.3.1 Arithmetic Decomposition; 5.3.2 Model-Based Decomposition; 6. Comparison in Generalized Linear Models; 6.1 Introduction; 6.1.1 The Exponential Family of Distributions; 6.1.2 The Link Function; 6.1.3 Maximum Likelihood Estimation  
 6.2 Comparing Generalized Linear Models; 6.2.1 The Null Hypothesis; 6.2.2 Comparisons Using Likelihood Ratio Tests; 6.2.3 The Chow Test as a Special Case; 6.3 A Logit Model Example; 6.3.1 The Data; 6.3.2 The Model Comparison; 6.4 A Hazard Rate Model Example; 6.4.1 The Model; 6.4.2 The Data; 6.4.3 The Model Comparison; 6.A Data Used in Section 6.4; 7. Additional Topics of Comparison in Generalized Linear Models; 7.1 Introduction; 7.2 GLM for Matched Case-Control Studies; 7.2.1 The 1 : 1 Matched Study; 7.2.2 The 1 : m Design; 7.2.3 The n : m Design; 7.3 Dispersion Heterogeneity; 7.3.1 The Data  
 7.3.2 Group Comparison with Heterogeneous Dispersion

---

## Sommario/riassunto

An incomparably useful examination of statistical methods for comparison. The nature of doing science, be it natural or social, inevitably calls for comparison. Statistical methods are at the heart of such comparison, for they not only help us gain understanding of the world around us but often define how our research is to be carried out. The need to compare between groups is best exemplified by experiments, which have clearly defined statistical methods. However, true experiments are not always possible. What complicates the matter more is a great deal of diversity in factors that are not

---