

1. Record Nr.	UNINA9911019126503321
Autore	Galwey N. W
Titolo	The False Discovery Rate : Its Meaning, Interpretation and Application in Data Science
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2024 ©2024
ISBN	9781119889809 1119889804 9781119889786 1119889782 9781119889793 1119889790
Edizione	[1st ed.]
Descrizione fisica	1 online resource (281 pages)
Collana	Statistics in Practice Series
Disciplina	519.5/6
Soggetti	Statistical hypothesis testing Mathematical statistics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Series Page -- Title Page -- Copyright Page -- Contents -- Preface and Acknowledgement -- About the Companion Website -- Chapter 1 Introduction -- 1.1 A Brief History of Multiple Testing -- 1.2 Outline of the Book -- 1.3 Summary -- References -- Chapter 2 The Meaning of the False Discovery Rate (FDR) -- 2.1 True Hypothesis Versus Conclusion from Evidence: The Confusion Matrix -- 2.2 The Meaning of the p-Value -- 2.3 The Meaning of the FDR: Its Relationship to the Confusion Matrix and the p-Value -- 2.4 Control of the FDR While Minimising False-Negative Results: The Benjamini-Hochberg (BH) Criterion -- 2.5 Graphical Illustration of the Benjamini-Hochberg FDR Criterion -- 2.6 Use of the Q-Q Plot in Other Contexts -- 2.7 Alternatives to the BH Criterion -- 2.8 Consequences of Correlations Among the Hypotheses Tested -- 2.9 The FDR in a Non-Statistical Context: A Diagnostic Test -- 2.10 Summary -- References -- Chapter 3 Graphical Presentation of the FDR -- 3.1 Presentation of the Q-Q Plot on the -log ₁₀ (p) Scale -- 3.2 Association

of the BH-FDR with Individual p-Values -- 3.3 Distinctive Plotting Symbols for Plotting of BH-FDR Values -- 3.4 Non-Monotonicity of the BH-FDR: Detection of Correlation Among p-Values from the - log10-Transformed Q-Q Plot -- 3.5 Summary

Sommario/riassunto

"By this time, such significance tests had become the mainstay of statistical data analysis in the biological and social sciences - a status that they still retain. However, it was apparent from the outset that there are conceptual problems associated with such tests. Firstly, the test does not address precisely the question that the researcher most wants to answer. The researcher is not primarily interested in the probability of their data set - in a sense its probability is irrelevant, as it is an event that has actually happened. What they really want to know is the probability of the hypothesis that the experiment was designed to test. This is the problem of 'inverse' or 'Bayesian' probability, the probability of things that are not - and cannot be - observed. Secondly, although the probability that a single experiment will give a significant result by coincidence is low, if more tests are conducted, the probability that at least one of them will do so increases"--
