

1. Record Nr.	UNINA9910337956203321
Autore	Makowski David
Titolo	From Experimental Network to Meta-analysis [[electronic resource]] : Methods and Applications with R for Agronomic and Environmental Sciences // by David Makowski, François Piraux, François Brun
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2019
ISBN	94-024-1696-X
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (160 pages) : illustrations
Disciplina	003
Soggetti	Agriculture Plant science Botany Statistics Environmental sciences R (Computer program language) Plant Sciences Statistical Theory and Methods Environmental Science and Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1. Introduction and examples -- Part I. Analysis of experimental networks -- Chapter 2. Basic Concepts -- Chapter 3. Analysis of network of experiments in blocks of complete randomness as a studied factor -- Chapter 4. Advanced Methods for Network Analysis -- Chapter 5. Planning an Experimental Network -- Part II. The meta-analysis -- Chapter 6. Basics for meta-analysis -- Chapter 7. Specific statistical problems for the meta-analysis -- Annex. R resources to implement the methods of analysis networks and meta-analysis -- Package Codes.
Sommario/riassunto	Data analysis plays an increasing role in research, scientific expertise and prospective studies. Multiple data sources are often available to estimate a key parameter or to test a hypothesis of scientific or societal interest. These data, obtained under different environmental conditions

or based on different experimental protocols, are generally heterogeneous. Sometimes they are not even directly accessible and should be extracted from scientific articles or reports. However, a comprehensive analysis of the available data is essential to increase the accuracy of estimates, assess the validity of research conclusions and understand the origin of the variability of the experimental results. A quantitative synthesis of the data set available allows for a better understanding of the effects of explanatory factors and for evidence-based recommendations. Designed as a methodological guide, this book shows the interests and limitations of different statistical methods to analyze data from experimental networks and to perform meta-analyses. It is intended for engineers, students and researchers involved in data analysis in agronomy and environmental science. Our objective is to present the main statistical methods to analyze data from experimental networks and scientific publications. Each chapter exposes one or more methods and illustrates them with examples processed with the R software. Data and R codes are provided and commented in order to facilitate their adaptation to other situations. The codes can be reused from the KenSyn R package associated with this book.
