

1. Record Nr.	UNISA996466548403316
Autore	Morales Domingo
Titolo	A course on small area estimation and mixed models : methods, theory and applications in R // Domingo Morales [and three others]
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-63757-3
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (XX, 599 p. 373 illus., 10 illus. in color.)
Collana	Statistics for Social and Behavioral Sciences
Disciplina	519.52
Soggetti	Small area statistics R (Computer program language) Estadística matemàtica R (Llenguatge de programació) Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1 Small Area Estimation -- 2 Design-based Direct Estimation -- 3 Design-based Indirect Estimation -- 4 Prediction Theory -- 5 Linear Models -- 6 Linear Mixed Models -- 7 Nested Error Regression Models -- 8 EBLUPs under Nested Error Regression Models -- 9 Mean Squared Error of EBLUPs -- 10 EBPs under Nested Error Regression Models -- 11 EBLUPs under Two-fold Nested Error Regression Models -- 12 EBPs under Two-fold Nested Error Regression Models -- 13 Random Regression Coefficient Models -- 14 EBPs under Unit-level Logit Mixed Models -- 15 EBPs under Unit-level Two-fold Logit Mixed Models -- 16 Fay-Herriot Models -- 17 Area-level Temporal Linear Mixed Models -- 18 Area-level Spatio-temporal Linear Mixed Models -- 19 Area-level Bivariate Linear Mixed Models -- 20 Area-level Poisson Mixed Models -- 21 Area-level Temporal Poisson Mixed Models -- A Some Useful Formulas -- Index.
Sommario/riassunto	This advanced textbook explores small area estimation techniques, covers the underlying mathematical and statistical theory and offers hands-on support with their implementation. It presents the theory in a rigorous way and compares and contrasts various statistical

methodologies, helping readers understand how to develop new methodologies for small area estimation. It also includes numerous sample applications of small area estimation techniques. The underlying R code is provided in the text and applied to four datasets that mimic data from labor markets and living conditions surveys, where the socioeconomic indicators include the small area estimation of total unemployment, unemployment rates, average annual household incomes and poverty indicators. Given its scope, the book will be useful for master and PhD students, and for official and other applied statisticians. .

---