Multivariable regression models are of fundamental importance in all areas of science in which empirical data must be analyzed. This book proposes a systematic approach to building such models based on standard principles of statistical modeling. The main emphasis is on the fractional polynomial method for modeling the influence of continuous variables in a multivariable context, a topic for which there is no standard approach. Existing options range from very simple step functions to highly complex adaptive methods such as multivariate splines with many knots and penalisation. This new approach, developed in part by the authors over the last decade, is a compromise which promotes interpretable, comprehensible and transportable models.

ABOUT THE AUTHOR

Patrick Royston  DSc, is a senior statistician and cancer clinical realist at the MRC Clinical Trials Unit, London, an honorary professor of statistics at University College London and a fellow of the Royal Statistical Society. he has authored many research papers in biostatistics, and has published over 150 articles in leading statistical journals. Patrick is an experienced statistical consultant, Stata programmer and software author.

Willi Sauerbrei  PhD, is a senior statistician and professor in medical biometry at the IMBI, University Medical Center Freiburg. He has authored many research papers in biostatistics and has published over 100 articles in leading statistical and clinical journals.
He worked for more than two decades as an academic biostatistician and has extensive experience of cancer research, with a particular concern for breast cancer.