DESCRIPTION

THE MOST PRACTICAL, UP-TO-DATE GUIDE TO MODELLING AND ANALYZING TIME-TO-EVENT DATA—NOW IN A VALUABLE NEW EDITION

Since publication of the first edition nearly a decade ago, analyses using time-to-event methods have increase considerably in all areas of scientific inquiry mainly as a result of model-building methods available in modern statistical software packages. However, there has been minimal coverage in the available literature to guide researchers, practitioners, and students who wish to apply these methods to health-related areas of study. Applied Survival Analysis, Second Edition provides a comprehensive and up-to-date introduction to regression modeling for time-to-event data in medical, epidemiological, biostatistical, and other health-related research.

This book places a unique emphasis on the practical and contemporary applications of regression modeling rather than the mathematical theory. It offers a clear and accessible presentation of modern modeling techniques supplemented with real-world examples and case studies. Key topics covered include: variable selection, identification of the scale of continuous covariates, the role of interactions in the model, assessment of fit and model assumptions, regression diagnostics, recurrent event models, frailty models, additive models, competing risk models, and missing data.

Features of the Second Edition include:

• Expanded coverage of interactions and the covariate-adjusted survival functions
• The use of the Worchester Heart Attack Study as the main modeling data set for illustrating discussed concepts and techniques

• New discussion of variable selection with multivariable fractional polynomials

• Further exploration of time-varying covariates, complex with examples

• Additional treatment of the exponential, Weibull, and log-logistic parametric regression models

• Increased emphasis on interpreting and using results as well as utilizing multiple imputation methods to analyze data with missing values

• New examples and exercises at the end of each chapter

Analyses throughout the text are performed using Stata® Version 9, and an accompanying FTP site contains the data sets used in the book. Applied Survival Analysis, Second Edition is an ideal book for graduate-level courses in biostatistics, statistics, and epidemiologic methods. It also serves as a valuable reference for practitioners and researchers in any health-related field or for professionals in insurance and government.

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**ABOUT THE AUTHOR**

**David W. Hosmer, PhD**, is Professor Emeritus of Biostatistics in the School of Public Health and Health Sciences at the University of Massachusetts Amherst. Dr. Hosmer is the coauthor of *Applied Logistic Regression*, published by Wiley.

**Stanley Lemeshow, PhD**, is Professor and Dean of the College of Public Health at The Ohio State University. Dr. Lemeshow has over thirty-five years of academic experience in the areas of regression, categorical data methods, and sampling methods. He is the coauthor of *Sampling of Population: Methods and Application* and *Applied Logistic Regression*, both published by Wiley.

**Susanne May, PhD**, is Assistant Professor of Biostatistics at the University of California, San Diego. Dr. May has over twelve years of experience in providing statistical support for health-related research projects.

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**NEW TO EDITION**

• New data sets, new examples, new exercises,

• New material on confounding polynomials, interactions, variable selection, fractional polynomials, frailty models, time varying covariates, power, sample size, competing risks and missing values
• Serious considerations have been given to user feedback, especially to those who have used the first edition in class or to guide their own research.

FEATURES

• Unlike other texts on the subject, this book focuses almost exclusively on the modeling of data and the interpretation of results.

• Sections dealing with some of the more advanced topics in the later chapters have been expanded to include new developments.

• Real-world examples and specific case studies are included.

• Each chapter describes available statistical software and their respective and relevant updates.

• The book emphasizes applications rather than mathematical theory.

• The book is supported by an FTP site that contains provocative data sets and useful pedagogical hints.

SERIES

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