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To João Tiago Mexia, on his 70th birthday, as a token of gratitude for a lifelong dedication to Statistics and for his unyielding and everlasting support of younger colleagues

João Lita da Silva
Frederico Caeiro
Isabel Natário
Carlos A. Braumann
Manuel L. Esquível

Foreword

Dear reader, On behalf of the four Scientific Statistical Societies – the SEIO, Sociedad de Estadística e Investigación Operativa (Spanish Statistical Society and Operation Research); SFdS, Société Française de Statistique (French Statistical Society); SIS, Società Italiana di Statistica (Italian Statistical Society); and the SPE, Sociedade Portuguesa de Estatística (Portuguese Statistical Society) – we would like to inform you that this is a new book series of Springer entitled "Studies in Theoretical and Applied Statistics," with two lines of books published in the series: "Advanced Studies" and "Selected Papers of the Statistical Societies."

The first line of books offers constant up-to-date information on the most recent developments and methods in the fields of theoretical statistics, applied statistics, and demography. Books in this series are solicited in constant cooperation between the statistical societies and need to show a high-level authorship formed by a team preferably from different groups so as to integrate different research perspectives.

The second line of books presents a fully peer-reviewed selection of papers on specific relevant topics organized by the editors, also on the occasion of conferences, to show their research directions and developments in important topics, quickly and informally, but with a high level of quality. The explicit aim is to summarize and communicate current knowledge in an accessible way. This line of books will not include conference proceedings and will strive to become a premier communication medium in the scientific statistical community by receiving an Impact Factor, as have other book series such as "Lecture Notes in Mathematics."

The volumes of selected papers from the statistical societies will cover a broad range of theoretical, methodological as well as application-oriented articles, surveys and discussions. A major goal is to show the intensive interplay between various, seemingly unrelated domains and to foster the cooperation between scientists in different fields by offering well-founded and innovative solutions to urgent practice-related problems.

On behalf of the founding statistical societies I wish to thank Springer, Heidelberg and in particular Dr. Martina Bihn for the help and constant cooperation in the organization of this new and innovative book series.

Rome, Italy — Maurizio Vichi

Preface

This volume of the selected papers from Portugal is a product of the Seventeenth Congress of the Portuguese Statistical Society. The meeting took place at the beautiful resort seaside city of Sesimbra in 2009. At the meeting there were 5 invited 1-hour conferences, 118 papers presented in 20-min talks, and 68 in poster sessions. Following all these presentations, 72 papers were submitted by March 2010. More than 200 participants had fruitful opportunities for learning about the latest ideas and methods being developed in a broad variety of statistical domains such as linear models and regression, survival analysis, extreme value theory, and statistics of diffusions and other Markov processes. Many of the papers and posters presented were applied studies in areas where statistics has a powerful and recognized role as an intelligence-gathering and management tool. The works presented at the congress that were submitted for publication in this volume were thoroughly refereed by a rigorous team of scientific experts, which the editorial team would like to express its heartfelt thanks to. The papers selected were carefully edited in order to provide readers with an extensive, reliable reference work on the subjects treated, as well as a thorough account of the best contributions presented at this major scientific event.

Lisbon, Portugal
June 9, 2012

João Lita da Silva
Frederico Caeiro
Isabel Natário
Carlos A. Braumann
Manuel L. Esquível
João Tiago Mexia

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