

Preface



The XVIII SIGEF Congress, entitled *Scientific methods for the treatment of uncertainty in social sciences* took place in Girona, Catalonia (Spain) from 6 to 8 July 2015, and was organized by the International Association for Fuzzy-Set Management and Economy (SIGEF) and the University of Girona, through the Department of Business Administration and the research group on Accounting and Mathematics for Economics and Business.

The appearance of the first applications on multivalent logics and the theory of fuzzy sets in economics and business problems, has suggested grouping all those people, businesses, teachers and researchers wishing to collaborate in developing and promoting the new techniques emerging from these achievements that modern science puts in the hands of researchers, professionals and executives. The treatment of uncertainty in the economic and business analysis is fundamental and requires instruments compatible with the uncertain environment of economics and business, because most of the traditional models have been overtaken by this reality when trying to make decisions when the information and the data are uncertain and/or subjective.

To achieve this goal, in 1993 was born the Association for Fuzzy-Set Management and Economy (SIGEF), whose creation has driven the research, study and treatment of all problems associated with the economy in general and business administration in particular.

At this moment, the main objectives of SIGEF are:

- (a) To promote research and development of new modelling for the treatment of uncertainty in Economics and Business Administration.
- (b) To promote training of postgraduates by organizing courses, workshops and conferences.

- (c) To promote the interest of society in the use of new techniques for the treatment of uncertainty in the different areas of Economics and Social Sciences.
- (d) To disseminate research, developments and innovations of its members, teachers, researches and businesses.

To achieve these objectives, among other activities, SIGEF publishes the scientific journal *Fuzzy Economic Review* and regularly organizes International Conferences. In this way, this XVIII International SIGEF Congress, entitled *Scientific methods for the treatment of uncertainty in social sciences*, means to introduce these new techniques in social science fields, and it continues and extends the Series of International Conferences organized by SIGEF. Previous Conferences were held in Reus, Spain (1994), Santiago de Compostela, Spain (1995), Buenos Aires, Argentina (1996), Santiago de Cuba, Cuba (1997), Lausanne, Switzerland (1998), Morelia, México (1999), Chania, Greece (2000), Napoli, Italy (2001), Mérida, Venezuela (2002), León, Spain (2003), Reggio Calabria-Messina, Italy (2004), Bahía Blanca, Argentina (2005), Hammamet, Tunisia (2006), Poiana Brasov, Romania (2007), Lugo, Spain (2009), Morelia, México (2010) and Reus, Spain (2012). This international congress aims to stimulate scientific exchanges, to promote international cooperation between the academic community and companies, and disseminate results of theoretical and applied research.

This book includes a selection of papers received by the Scientific Committee, covering the main topics discussed at the Congress. We believe it is a good example of the excellent work of the associates and the significant progress about this line of research in recent times.

The book is organized according to seven thematic groups, although these groups do not offer a disjoint classification: Decision Making, Expert Systems and Forgotten Effects Theory, Forecasting Models, Fuzzy Logic and Fuzzy Sets, Modelling and Simulation Techniques, Neural Networks and Genetic Algorithms and Optimization and Control.

Finally, we would like to address our warmest thanks to all the authors and reviewers, participants at the conference, organizations and institutional sponsors for their help and support and for creating a pleasant connection point for the collaborative efforts and exchange of ideas and information among persons from varied disciplines.

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