

Constantin MITRUT

PhD, University Professor
Dean of Faculty of Cybernetics, Statistics and Economic Computer Science
Academy of Economic Studies, Bucharest, Romania

E-mail: cmitrut@ase.ro



Key words: statistical experiments, experiments design, ANOVA, DOE, case studies,
Alexandru Isaic-Maniu, Viorel Gh. Voda

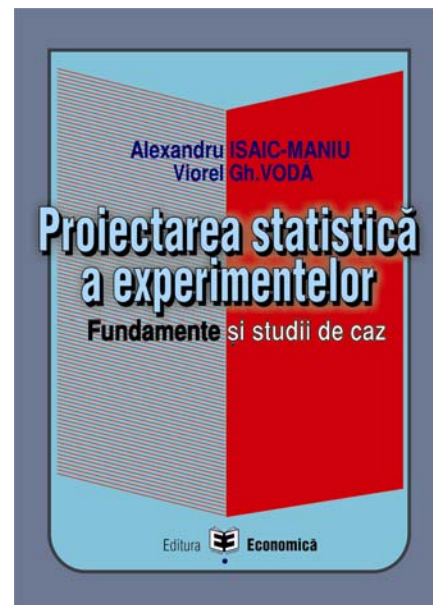
Book review on
STATISTICAL EXPERIMENTS DESIGN. FUNDAMENTS
AND CASE STUDIES (“PROIECTAREA STATISTICA A
EXPERIMENTELOR. FUNDAMENTE SI STUDII DE CAZ”)
by PhD Alexandru ISAIC-MANIU and PhD Viorel Gh. VODA
Editura Economica, Bucharest, 2006
Forewords by PhD Marius IOSIFESCU,
vice-president of Romanian Academy of Science

The book is – as the forewords author’s underlines – the first heavy monograph in Romanian on experiments design using statistical-probabilistic tools for analyses and interpretation.

The approach is set on multiple perspective: historical, philosophical, methodological and an applied one.

The two authors, well-known in qualityology, start – in a original manner – from an essay of our great poet and philosopher Lucian BLAGA (1895-1961) named „The Experiment and the Mathematical Spirit” („Experimentul si spiritul matematic”) published at Humanitas, Bucharest in 1998. In this essay Lucian BLAGA launches the idea about a methodological couple between experiment (as an act or a physical element) and mathematical tool (as an abstract entity) for the analyses and interpretation.

Following this line, the authors research the nature and consequences of interferences between the experiment and thinking scheme which is frequently named as statistical. It starts with vocabulary terms (as: experience, experiment, experimental environment/ lab, level, block, factor, replica etc.) and it continues with the history of



„planned“ (designed) experiments which gain a high level with the famous Britain scholars Sir Ronald A. FISHER (1890-1962), Frank YATES (1902-1994), William Sealy GOSSET (1876-1937) inside of Agricultural Laboratory for Experiments from Rothamsted. Next, the authors show in an exhaustive manner the DOE methodology (Design of Experiments) and adding toolbox which consists in ANOVA (Analysis of Variance) methods.

The book also presents some new approaches on problems like: reliability experiments, experiments theory of Genichi TAGUCHI, EVOP, the relations between DOE and ANOVA with so called SSM (Six Sigma Movement).

The V-th Chapter consists in 10 case studies on different areas such as chemistry, metrology, machine making etc that forms a valuable tool for qualitology.