

Preface

During the last years social-economic systems have been involved in a rapid change not only at the European, but also at a wider international level. This process has triggered a renewed interest for topics related to Education and Knowledge development. Particularly “higher education has been affected by a number of changes, including higher rates of participation, internationalisation, the growing importance of knowledge-led economies and increased global competition”. Thus, the Bologna Process [1999] and the Lisbon Strategy [2000] aim at making the European Union “the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion”. In the last decade, the Italian University System (IUS) has changed in several directions as a result of those two European policy processes. The principles that inspired such changes lay in the improvement of the whole University service, of the competitiveness and of accountability, and in the aim of getting closer to the other European University systems. The reform – introduced by several bills, first D.L. 509/1998 and 270/2004 and after DD.MM. 544/2007 e 362/2007 – has determined that the propensity to accountability of all the IUS’s processes, the accuracy in the management of financial and human resources, the monitoring and the evaluation of the main processes of the US have become the principles of the governance of the IUS. After 7 years, the reform is not still fully “implemented”, and its approaching effectiveness has already provoked questions on its effects and results. For certain, two big issues have been claimed in the last years: the “shortage” of monetary funds to cover the new “tasks” introduced by the reform and the absence of consistent and clear evaluation policies. In fact, a structured framework for the evaluation of the quality in the IUS is still in progress. The main obstacle is given by the ambiguities of the IUS, because the processes and the functions of the didactics and the research activities have not been defined clearly. In the last years the University Ministry bills and indications have been very fragmentary and without a long-term perspective. These indecisions have not helped the universities in the process of defining and establishing common evaluation methods and models in order to improve the research and didactics activities. For instance, a nationwide research evaluation program was conducted just once in 2001–2003 and another one will be likely carried out in the next years. For the didactics activities, Students Evaluation of Teaching (SET) results are utilized just to organize teaching activities in terms of quality in

a few universities, even if this survey is mandatory since 1999. In this direction, the first input is given by the Ministerial Decree 544/2007, in which there is an indicator to measure the quality of teaching. This indicator is used to give funds to the universities and it does not take into account the students assessments. In fact, it is merely quantitative because it is given by the number of the courses, in which SET is conducted, over the total courses offered, so the university takes “money” if that indicator is greater than the median (which is computed nationwide), otherwise it takes less funds. On the other hand, on behalf of the Ministry of Education and Scientific Research, it was instituted a National Committee for the Evaluation of the University System in 1999. It has produced either several reports on descriptive analysis of the IUS or some research topics on evaluation of the IUS. At the same time, several Italian statisticians have published scientific papers and reports either about the criteria, the modalities, the contents of the IUS activities, or the construction of measures (and indicators) devoted just to the IUS. In general, the aspects covered by the Italian literature concern the IUS organization, its functionality and, in particular, the political and cultural meaning involved in the whole evaluation process. Both the institutional and the scientific works are the result of the Bologna Process, whose “core” is the quality, as demonstrated by the European quality assurance developments. The Standards and Guidelines for Quality Assurance in the European Higher Education Area and the annual European Quality Assurance Forum are a concrete proof of the crucial role of “Quality Shared” as a success factor to engage a real change in the policies. The difficulties encountered in classifying the most appropriate evaluative practices for the IUS can be found in the statistical literature evaluation processes. Indeed, the statistical literature, that analyzes the main processes of the IUS, is very vast and therefore it is hard to classify it. But some trends in methods and statistical models to analyze the results of the evaluation of the IUS can be pointed out. At first the scientific developments concentrated on the construction of simple and/or composite indicators, with the aim of providing statistical tools easily interpretable to policy makers. However, the inadequacy of indicators to capture the complexity of the assessment processes led to the need for the development of a modelling approach for the analysis of such processes. The modelling approach is vast too, because the IUS covers such different issues that we are able to mention (and partially cover in this book) just some of them. For instance, the most used models to measure individual opinions about the quality of teaching activities allow us to take into account factors that can lead to a misleading interpretation of the latent structure of the examined phenomenon. So multivariate analysis techniques or covariance models are extensively used for the individualization of latent dimensions. A further approach is based on Rasch Model, able to measure individual opinions and to test a questionnaire. Moreover, fixed or random effects models are used to analyze longitudinal individual data because they allow to test the presence of heterogeneity of behaviour among sub-populations and they are appropriate to study the student’s career performance and occupational outcomes. Finally, in a stochastic process view, the students’ careers and occupational outcomes are analyzed by “Markov chains”, that allow to model durations and transitions from one state to another of the IUS in an appropriate way. This book, which

collects a selected range of refereed chapters, is the results of the projects funded by the Italian Ministry of Education (Prin, 2005) entitles “Construction Indicators for Public Decision-making Processes Between Measurement Issues and Opportunities Knowledge” and (Prin, 2008) “Measures, statistical models and indicators for the assessment of the University System”. It contains four parts, each of them devoted to the following topics:

- Introduction: Different Perspectives of the Evaluation of the Italian University System
- The Evaluation in the Italian Universities. Student Teaching Evaluation
- The Evaluation in the Italian Universities. Statistical Methods for Careers and Services Evaluation
- Research Design and data for Evaluation: University between the High School and the Labour Market

The first part includes three chapters: two of them devoted to the assessment of university teaching by students from two different points of view. One makes a critical analysis of the practice teaching evaluation in the IUS and the other one investigates the assessment process in organizations. The third chapter examines a method, currently used by the Italian research institute Censis, for ranking Italian universities on indicators related to educational quality and proposes alternative ways to get the rankings. The second part is dedicated to chapters developing different statistical models, almost all attributable to GLMM, aimed to investigate the determinants of the evaluation teaching process by students. In this part relevant issues, such as the quantification of the impact of individual covariates on the perception of the main aspects of University teaching and the study of how perception changes with the profiles of students, are analyzed. The third part is devoted to models to analyze the quality of services and careers of students. This part contains some methodological and substantive results of interest: the estimates of the satisfaction levels for specific feature of students and/or service by the extension of the logistic binomial GLMM, the estimates of the systematic changes over time of this student career delay indicator by the Latent Curve Model and the estimates of the student’s perception of the quality of the management. Finally, the last part includes different interesting applications. These chapters may appear fragmentary in the content. However, the results span from the assessment of primary and secondary effects in secondary school choices in Italy to the labour market outcomes for PhDs. So it is possible to give a track, through the use of different statistical models, of the difficult transition from the Italian higher education till the entry into the labour market. We would like to thank all the referees for their invaluable effort in reviewing more than 25 papers. They are:

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