Valeria Caviezel

Conferences and Workshops

- 8 – 12 June 2009 – International Rasch Measurement Workshop – Bled, Slovenia.

  Talk: Caviezel V., Mesbah M., "A simple graphical device to assess dimensionality in a longitudinal setting. Application to the Functional Independence Measure".

- 11 – 13 October 2008 – AMAT 2008 Conference – Memphis – Tennessee, USA.

  Talk: Caviezel V., Ortobelli-Lozza S., Rachev S., "Semiparametric estimators for heavy tailed distributions".

- 5 – 6 September 2008 – Statistical Modelling for University Evaluation: an International Overview – Università di Foggia.

  Talk: Bacci S., Caviezel V., "A methodological approach for university teaching evaluation: the multilevel Rasch model".

- 25 – 27 June 2008 – XLIV Riunione Scientifica della Società Italina di Statistica – Università della Calabria.

  Talk: Caviezel V., "Weighted raw scorse and Rasch measurements".

- 12 – 13 April 2007 – Valutazione e Customer Satisfaction per la Qualità dei Servizi – Roma.

  Talk: Bertoli-Barsotti L., Biffignandi S., Caviezel V., "Le competenze dei laureati mediante l'analisi di Rasch".

Publications

- Caviezel V., Ortobelli-Lozza S., Rachev S., Semiparametric estimators for heavy tailed distributions. Accepted by *Journal of Concrete and Applicable Mathematics* (JCAAM).

Abstract: In this paper we describe and apply estimating function theory to evaluate the parameters of parametric distributions uniquely defined by their characteristic functions. We first implement an estimating function model based on the first four moments of a parametric function of the underlying random variables. For instance we propose two parametric functions of the underlying random variables so as to obtain its first moments more easily by the simple knowledge of the characteristic function. Thus we consider the estimates that present the minimal asymptotic variance with respect to the parameter of the function. Then we propose an empirical analysis based on simulated stable Paretian distributions. Using simulated data of stable distributions we evaluate the forecasting power of the proposed methodology comparing it with the analogous maximum likelihood estimates. Moreover we show how to apply the same methodology to some well-known infinitely divisible distributions.

- Bacci S., Caviezel V., A methodological approach for university teaching evaluation: the multilevel Rasch model. Sent to *Journal of Educational and Behavioral Statistics*.

Abstract: In this paper a generalization of the Rating Scale Model (RSM) with a hierarchical data structure will be presented. Having shown how the RSM, as with other Rasch models, may be read in terms of a Generalized Linear Mixed Model (GLMM) with two aggregation levels, a presentation will be given of an extension to the case of measuring the latent trait of individuals aggregated in groups. The use of this model will be illustrated via reference to the evaluation of university teaching by students following the courses. The aim is to generate a ranking of teaching on the basis of student satisfaction, so as to give teachers, and those responsible for organizing study courses, a background of information that takes the opinions of the direct target group for university teaching (that is, the students) into account, in the context of improving the teaching programmes available.

- Caviezel V., Weighted raw scorse and Rasch measurements.

Abstact: In this paper the Rasch Model, the Multiple Choice Model and the One Parameter Linear Model, applied to a mathematical test given to students at the start of school year 2007/08.

- Caviezel V., Criscuolo A., Gnudi., Indagine sul livello delle conoscenze e abilità matematiche nel passaggio fra scuola secondaria inferiore e superiore, *Quaderni del Dipartimento di Matematica, Statistica, Informatica ed Applicazioni, Serie MatNet*, Università degli Studi di Bergamo, n.1, 2008.

- Bertoli-Barsotti L., Biffignandi S., Caviezel V., Le competenze dei laureati mediante l'analisi di Rasch, *Rivista di Economia e Statistica del Territorio*, n. 3, 2007, pagg. 109-135.

Abstract: In this study we apply the Rasch analysis to evaluate the competences of graduates in their job (required and effective competences). The data base comes from a study of employment performances of University of Bergamo graduates. In this paper, we study the

latent variable which is constructed as a difference between the score attributed by the subject to the item on effectiveness and the score attributed to the importance of the corresponding item. Each item represents activities related to the job. We determined the optimal categorization of the difference variable, we eliminated the subjects with a lot of missing answers and we selected the good person factors. Starting from 26 items, we obtained a collection of 21 items which can be suggested as a test form for measuring the competences. This new collection is a good measurement instrument according to the Rasch analysis.

- Caviezel V., Estimation for the Rasch models under a linkage structure: a case study, *Quaderni del Dipartimento di Matematica, Statistica, Informatica ed Applicazioni*, Università degli Studi di Bergamo, n.13, 2004.

  Abstract: The purpose of this study is to measure the student's ability and the course's difficulty of a sample of students of the Faculty of Economics, University of Bergamo, using a Rasch measurement model. The problems of the linkage structure and of the choice of optimal categorization are discussed too.

- Caviezel V., Coin D., *Esercizi per un corso di statistica*, ed. Giappichelli, Torino, 2004.