Paolo Berta
Curriculum Vitae

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Mother Language:	Italian
Other Language:	English and French

EDUCATION AND TRAINING

2018	PhD in Statistics at Brunel University London, UK Dissertation: "Statistics Evaluation of Quality in Healthcare"
2003	Master's degree in Statistics for Health at the University of Milano-Bicocca, Italy Dissertation: "Using data mining for the analysis of pharmaceutical expenditure"
Sep 2002 - Jan 2003	Stage at the Local Health Authority (ASL) of Brescia The analysis of pharmaceutical use and expenditures of the residents in the territory of Brescia.
1999	Master's degree in Statistics at the University of Padua Dissertation: "From the Republic of Venice to the Kingdom of Italy: quality of population statistics in Veneto Region".

CURRENT POSITION

Nobember 2022 -	Associate Professor in Social Statistics at the Department of Statistics and Quantitative Methods of the University of Milan – Bicocca, Milan (Italy)
Nobember 2019 - October 2022	Assistant Professor Tenure Track in Social Statistics at the Department of Statistics and Quantitative Methods of the University of Milan – Bicocca, Milan (Italy)
June 2014 - May 2019	Assistant Professor in Statistics at the Department of Statistics and Quantitative Methods of the University of Milan – Bicocca, Milan (Italy)

ACADEMIC NATIONAL QUALIFICATION

July 2018	National qualification for the functions of Associate Professor in the scientific sector of Demography and Social Statistics
July 2018	National qualification for the functions of Associate Professor in the scientific sector of Financial Science

SCIENTIFIC ACTIVITIES

The scientific research activity concerns primarily on the application of multivariate statistical analysis techniques and mixed effects models to cross-sectional and longitudinal data for the evaluation of healthcare quality. In particular, the following statistical techniques have been extensively used in the study of healthcare quality:

- Multivariate Analysis;
- Multilevel Models;
- Stochastic Frontier Analysis;
- Discrete choice models;
- Causal Inference;
- Cluster Weighted Models

Studies on effectiveness	Multivariate statistical analysis and multilevel models are applied to administrative healthcare data for profiling healthcare providers performance based on different sets of outcomes (i.e: overall mortality, readmissions, transfer between hospitals, voluntary discharges and readmission in operating room). The main results of this research have been published in national and international peer reviewed journals. Policy impacts: Healthcare policy makers of Lombardy Region (Italy) have used findings from these researches to support the implementation of the performance evaluation system of the healthcare system in Lombardy Region. Furthermore, from 2012 the evaluation results are linked to the rewarding system of hospitals' CEOs determining an improvement or a reduction up to 2% of the annual budget assigned to each hospital.
Studies on efficiency	Stochastic frontier analysis has been applied to healthcare data in order to estimate the technical efficiency of the hospitals of Lombardy Region. Additionally, a particular focus has been given to the econometric analysis of the distorting elements of the healthcare systems based on prospective payment, an original theme in the context of international scientific literature. In this area of research were deepened both econometric analysis on cross-sectional data and panel data analysis. Findings from these studies have been published in international peer reviewed journals. Impact of this research area: Efficiency measures have been included in the official evaluation system of healthcare system of Lombardy Region.
Policies Evaluation	During the years, have developed a skill in policy evaluation. The design of the research and model applied aim at identify a design of the experiment that consider a pre-policy and a post-policy period and a sub-population interested from the policy and a sub-population not involved in the policy. A Difference in Differences approach allows identifying the policy effects. Findings from this studies have been published in international peer reviewed journals ([7]) Impact of this research area: based on evidences from these studies, Lombardy Regional administration decided to maintain an already implemented policy that reduces the reimbursement for specific discharges. Recently I have developed a SAS code to provide a Coarsened Exact Matching: the related paper was published in a scientific journal and the updated code version of the macro is available at http://gking.harvard.edu/cem.
Recent topics	Complete the research background the new research about the competition in healthcare and other studies on socio-demographic fields.

PARTICIPATION IN SCIENTIFIC COMMITTEES

2020	Member of Scientific Committee at National Statistical Institute (ISTAT) for the study and analysis of the phenomenon of the spread of Covid-19 infection
2014	Member of the PNE Working Group (National Program Outcomes) at the National Agency for Regional Health Services (AGENAS)
2013	Member of the PNE Working Group (National Program Outcomes) at the National Agency for Regional Health Services (AGENAS)
2010	Member of the Ethics Committee of the Mantova Hospital (Italy)
2009	Member of the Scientific Committee for the construction of a Regional Observatory on Addictions at the Regional Research Institute (IRER) of Lombardy Region

RESEARCH PROJECTS

2020 - 2022	Project financed by Norwegian Research Council - "EU-Covid19 - a multinational registry-based study with focus on risk and protective factors, clinical outcomes and mental health"
Apr 2020 - Oct 2020	Project financed by European Regional Development Fund 2014-2020 - Regione Lombardia "Early detection and SARS-siCoV-2 containment. Tools and services to address the challenge at Covid19."
2019-2022	Project Bando Ricerca Finalizzata anno 2016 - Programma di Rete "NET-2016-02363853 Performance evaluation and value assessment for cardiovascular and oncological care paths in a regional network context: challenges and opportunities".
2019	Project on policy evaluation for ARIA- Regione Lombardia "Impact evaluation of CREG".
2017	Principal Collaborator of the Project "Visitinps Scholars Program - A" Title of the project: "Job insecurity, unemployment, use of health services and mental health condition". Research group: Principal investigator: Massimiliano Bratti (Universita' degli Studi di Milano, IZA, LdA), Principal Collaborator: Paolo Berta (Universita' degli Studi di Milano Bicocca), Research Team: Massimiliano Bratti; Carlo Fiorio (Universita' degli Studi di Milano and Irvapp- FBK); Paolo Berta; Giorgio Vittadini (Universita' degli Studi di Milano Bicocca); Stefano Verzillo (European Commission, Joint Research Centre, JRC); and Luca Merlino (Regione Lombardia).
2015-2019	The hospital effectiveness evaluation: a research project for fourteen Italian regions. MeS Lab, Scuola Superiore Sant'Anna - Pisa (Italy)
2014	Project "Provision of a service of studies and research to support the process of reorganization of the Regional Health Service" - Eupolis Lombardia - Institute for research, statistics and training
2010-2011	Project "Regional Observatory on Addiction - ORed" for the Regional Directorate of Family and Social Solidarity of Lombardy Region
2009	Project "Evaluation of activities and decisions in health care systems," for the National Agency for Regional Health Services (AGENAS)
2005-2006	Project "The Family in front of autism" for the Regional Directorate of Family and Social Solidarity of Lombardy Region

SELECTED INVITED TALKS

14 September 2019	"The strange case of appropriate C-sections: DRG-tariff regulation, hospital ownership, and market concentration", APHEC 2019 Conference, Genova (Italy)
26 January 2019	"Does cooperation between hospitals increase the quality of healthcare?", Giornate di Studio sulla Popolazione (Population Days), Bocconi University, Milan (Italy)
26 September 2018	"Does cooperation between hospitals increase the quality of healthcare?", CostNet 2018 Conference, Warsaw (Poland)
17 July 2018	"Patient mobility and hospital reputation in a competitive system", Health Econometrics Workshop, Bergamo
14 September 2017	"Outcome evaluation in healthcare: the Multilevel Logistic Cluster Weighted Model", CLAssification and Data Analysis Group (CLADAG) of the Italian Statistical Society (SIS), Univeristy of Milano-Bicocca
8 July 2017	"Cream Skimming and Healthcare Contracts Empirical Evidence from Italy", American–European Health Economics Study Group Workshop, Oxford (UK)
6 September 2016	"Cluster Weighted Models for Count Data", Model Based Clustering Workshop, Catania
23 July 2016	"DRG-based spending and outcomes in the treatment of Acute Myocardial Infarction: a comparison between two regional healthcare systems in Italy", Health Econometrics Workshop, Bari
12 May 2015	"Statistical approaches in the evaluation of healthcare", Seminar at Brunel University, London (UK)
12 March 2015	"Freedom of choice, asymmetric information and the impact of competition on the quality of health care: evidence from Italy", CERGAS - Bocconi University, Milan.
30 June 20141	"Doing Research in Healthcare with Administrative Databases Workshop", Politecnico of Milan.
08 December 2012	"The effectiveness – efficiency trade-off in Lombardy hospitals" – 3rd Health Econometrics Workshop, Siena
22 November 2011	"La Valutazione della Qualita' in Sanita'" – SAS Campus, Milan
30 May 2011	"Performance measurements for healthcare services" – IES 2011 - Innovazione e societa', Firenze
29 October 2009	"The effects of Upcoding, Cream Skimming and Readmissions on the Italian Hospitals Efficiency: a Population - based investigation" – AIES, Bergamo

ORGANIZATION OF ACADEMIC TRAINING

Since 2008 Member of the organization committee of Health Econometric Workshop, an international workshop held every two years and attended by the world's leading health economists and econometricians. From 2014 with the participation of leading international experts was started a Summer School on "Applied Econometrics Health and Health Policy".

July 2022	7th Health Econometric Worskshop – Ispra (VA)
July 2020	Webinar: Covid-19 pandemic: Challenges and opportunities for the healthcare systems
June 2019	Local organizer of Convegno Intermedio SIS2019
July 2018	6th Health Econometric Worskshop – Bergamo
July 2016	5th Health Econometric Worskshop – Bari
July 2016	Applied Health Econometrics and Health Policy 3rd ed. – Summer School, Bergamo
July 2015	Applied Health Econometrics and Health Policy 2nd ed. – Summer School, Bergamo
July 2014	Applied Health Econometrics and Health Policy – Summer School, Bergamo
July 2014	4th Health Econometric Worskshop – Padova
December 2012	3rd Health Econometric Worskshop – Siena
December 2012	"Spatial Health Econometrics", CRISP – Training Course, Siena
July 2010	2nd Health Econometric Worskshop – Roma
December 2008	Health Econometric Worskshop – Milano

COLLABORATIONS AND SCIENTIFIC ADVICE

2020	Fondazione per la Sussidiareita' - Infectious disease in hospital: market rules and cleaning industry in hospital budget.
2016	Fondazione per la Sussidiareita' - Observatory ONBSI: Market and rules on procurement in the cleaning industry and in integrated multi-services
2013-2014	Hospital of Cremona - Analysis of the hospital data applied to the internal evaluation of the hospitalizations
2010 - 2014	Department of Addiction of Local Health Authority Sondrio (Italy) - Consultancy activities for research and testing of methods and models to assess effectiveness and efficiency of the social services for drug addicts.
2010 - 2014	Lombardia Informatica SpA - Identification of a set of indicators for measuring the overall performance for Lombardy Region and engineering of their use on the basis of a DWH.
2004 - 2014	Lombardy Region - Activities involve the collection and analysis of hospitals data through the application of multilevel model to study the effectiveness of healthcare facilities in Lombardy. The project has produced the first health evaluation system of Lombardy, which has been applied effectively since March 2012.

TEACHING ACTIVITIES

BICOCCA TEACHING ACTIVITIES

Academic Year 2018-2022	Lecturer at the University of Milan - Bicocca, in charge of the course "Statistical inference"
Academic Year 2019	Invited Lecturer on "Lean in Healthcare Services " at MBA Program of Brunel University London (UK):
Academic Year 2019	Lecturer at the Statistics PhD of the University of Milan - Bicocca: Multilevel Model, Finite Mixture Models and Cluster Weighted Models
Academic Year 2018-2019	SAS Lab for the course of "Data Analysis - University of Milan - Bicocca
Academic Year 2018	Lecturer at the Statistics PhD of the University of Milan - Bicocca: Multilevel Model, Finite Mixture Models and Cluster Weighted Models
Academic Year 2013-2018	Lecturer at the University of Milan - Bicocca, in charge of the course "Statistical evaluation of health systems"
Academic Year 2017-2018	SAS Lab for the course of "Generalized Linear Models" - University of Milan - Bicocca
Academic Year 2017	Lecturer at the Statistics PhD of the University of Milan - Bicocca: Multilevel Model, Finite Mixture Models and Cluster Weighted Models
Academic Year 2016-2017	SAS Lab for the course of "Generalized Linear Models" - University of Milan - Bicocca
Academic Year 2016	Lecturer at the Statistics PhD of the University of Milan - Bicocca: Finite Mixture Models and Cluster Weighted Models
Academic Year 2015-2016	SAS Lab for the course of "Multivariate Analysis" - University of Milan - Bicocca
Academic Year 2015	SAS Lab at the Statistics PhD of the University of Milan - Bicocca: application of generalized linear models, Tobit and Heckman models and Structural Equation Models
Academic Year 2014-2015	SAS Lab for the course of "Data Analysis - University of Milan - Bicocca
Academic Year 2014-2015	Lecturer on Statistics and Data Mining at the Master in Business Intelligence - University of Milan - Bicocca
July 2014	STATA Lab at the Health Econometrics Summer School
Academic Year 2014	SAS Lab at the Statistics PhD of the University of Milan - Bicocca: application of generalized linear models, Tobit and Heckman models and Structural Equation Models

OTHER TEACHING ACTIVITIES

2018-2021	Lecture on Statistical evaluation in healthcare at Master on Management for healthcare of University of Bergamo
2015-2018	Lecture on Statistical evaluation in healthcare at course for healthcare managers at Sant'Anna School of Pisa
2014-2020	STATA Lab at la Summer School in Health Econometrics (University of Bergamo)
2012-2014	Lecture on Statistical evaluation in healthcare – Master in Business Intelligence at University of Milano – Bicocca
2011-2012	Course on SAS Software at Laboratorio MES - Sant'Anna School of Pisa
2011 and 2012	Course on the use of SAS software at MES Laboratory of Scuola Superiore Sant'Anna of Pisa
2010	Lectures on Health Evaluation in the Statistical Analysis of Data Course - Models of quality assessment at Almo Collegio Borromeo in Pavia
2009	Lesson on the Evaluation of outcomes in healthcare at PROGEA Company, as part of the Joint Commission International for Lombardy Region
2005	Course on Multilevel and Logistic Regression Analysis Techniques in Quality Evaluation of Healthcare for the Master in Health at the University of Milan - Bicocca

EDITORIAL STAFF FOR SCIENTIFIC JOURNALS

- Statistica Applicata - Italian Journal of Applied Statistics

REVIEWER FOR SCIENTIFIC JOURNALS

- Journal of Applied Econometrics
- Journal of the Royal Statistical Society: Series A
- Health Economics
- Health Policy
- Demographic research
- Social Science and Medicine
- European Journal of Health Economics
- Economic Modelling
- Economics and Human Biology
- International Journal for Quality in Health Care
- International Journal of Health Policy and Management
- Journal of Evaluation in Clinical Practice
- Quality and Quantity
- Econometrics and Statistics
- Empirical Economic
- Health Services Management Research
- BMC Health Services Research
- Epidemiologia e prevenzione
- Statistica Applicata - Italian Journal of Applied Statistics

SCIENTIFIC SOCIETIES MEMBERSHIP

- SIS - Italian Statistical Society
- AISP -Italian Association for Population Studies
- 2017 - RSS - Royal Statistical Society

AFFILIATIONS

2018	HEDG - Health Econometrics and Data Group, Department of Economics and Related Studies, University of York (UK)
2019	Laboratorio MeS - Scuola Superiore Sant'Anna di Pisa

COMPUTER SKILLS

Over the years he has deepen his knowledge in different areas of computing, and particularly in programming for elaboration of statistical data using specialized software and application packages of general utility. The whole research has required the intensive use of SAS software both in its basic version and in Macro environment. Finally, he has developed an intensive use of statistical software R and STATA to complete his professional skills. In addition, in particular to develop and produce scientific texts, he has acquired an excellent ability in the use of LaTeX software

Riferimenti bibliografici

[1] Marta Angelici, Paolo Berta, Joan Costa-Font, and Gilberto Turati. Divided We Survive? Multilevel Governance during the COVID-19 Pandemic in Italy and Spain. *Publius: The Journal of Federalism*, 02 2023. pjad002.

[2] Ivan Merlo, Mariano Crea, Paolo Berta, Francesca Ieva, Flavia Carle, Federico Rea, Gloria Porcu, Laura Savaré, Raul De Maio, Marco Villa, Danilo Cereda, Olivia Leoni, Francesco Bortolan, Giuseppe Maria Sechi, Antonino Bella, Patrizio Pezzotti, Silvio Brusaferro, Gian Carlo Blangiardo, Massimo Fedeli, Giovanni Corrao, and on behalf of the Italian AlertCoV Project group. Detecting early signals of covid-19 outbreaks in 2020 in small areas by monitoring healthcare utilisation databases: first lessons learned from the italian alertcov project. *Eurosurveillance*, 28(1), 2023.

[3] Lucia Salvioni, Filippo Testa, Adela Sulejmani, Francesca Pepe, Pietro Giorgio Lovaglio, Paolo Berta, Roberto Dominici, Valerio Leoni, Davide Prosperi, Giorgio Vittadini, Miriam Colombo, and Luisa Fiandra. Surfactant protein d (sp-d) as a biomarker of sars-cov-2 infection. *Clinica Chimica Acta*, 537:140–145, 2022.

[4] Marta Angelici, Paolo Berta, and Giorgio Vittadini. The impact of covid-19 pandemic on the healthcare system in lombardy. In *The Economics of COVID-19*, pages 159–172. Emerald Publishing Limited, 2022.

[5] Paolo Berta, Gianmaria Martini, Daniele Spinelli, and Giorgio Vittadini. The beaten paths effect on patient inter-regional mobility: An application to the italian nhs. *Papers in Regional Science*, 2022.

[6] Giuseppe Arbia, Paolo Berta, and Carrie B. Dolan. Locational error in the estimation of regional discrete choice models using distance as a regressor. *The Annals of Regional Science*, 2022.

[7] Paolo Berta, Veronica Vinciotti, and Francesco Moscone. The association between hospital cooperation and the quality of healthcare. *Regional Studies*, 0(0):1–16, 2022.

[8] Camillo Rossi, Paolo Berta, Salvatore Curello, Pietro Giorgio Lovaglio, Mauro Magoni, Marco Metra, Aldo Maria Roccaro, Stefano Verzillo, and Giorgio Vittadini. The impact of covid-19 pandemic on ami and stroke mortality in lombardy: Evidence from the epicenter of the pandemic. *PLOS ONE*, 16(10):1–15, 10 2021.

[9] Paolo Berta, Pietro Giorgio Lovaglio, and Stefano Verzillo. How have casemix, cost and hospital stay of inpatients in the last year of life changed over the past decade? evidence from italy. *Health Policy*, 2021.

[10] Paolo Berta, Carla Guerriero, and Rosella Levaggi. Hospitals' strategic behaviours and patient mobility: Evidence from italy. *Socio-Economic Planning Sciences*, page 101030, 2021.

[11] Paolo Berta, Paolo Paruolo, Stefano Verzillo, and Pietro Giorgio Lovaglio. A bivariate prediction approach for adapting the health care system response to the spread of covid-19. *Plos one*, 15(10):e0240150, 2020.

[12] Paolo Berta, Gianmaria Martini, Massimiliano Piacenza, and Gilberto Turati. The strange case of less c-sections: Hospital ownership, market concentration, and drg-tariff regulation. *Health Economics*, 2020.

[13] Paolo Berta and Veronica Vinciotti. Multilevel logistic cluster-weighted model for outcome evaluation in healthcare. *Statistical Analysis and Data Mining*, 2019.

[14] Massimo Cannas, Paolo Berta, and Francesco Mola. Template matching for hospital comparison: an application to birth event data in italy. *Statistica & Applicazioni*, 2019.

[15] Chiara Seghieri, Paolo Berta, and Sabina Nuti. Geographic variation in inpatient costs for acute myocardial infarction care: Insights from italy. *Health Policy*, 2019.

[16] Alina Peluso, Paolo Berta, and Veronica Vinciotti. Do pay-for-performance incentives lead to a better health outcome? *Empirical Economics*, 56(6):2167–2184, Jun 2019.

[17] Anna Garriga and Paolo Berta. Single-mother families, mother's educational level, children's school outcomes. In *Unequal Family Lives: Causes and Consequences in Europe and the Americas*, pages 143–164. Cambridge University Press, 2018.

[18] Tommaso Grillo Ruggeri, Paolo Berta, Anna Maria Murante, and Sabina Nuti. Patient satisfaction, patients leaving hospital against medical advice and mortality in italian university hospitals: a cross-sectional analysis. *BMC Health Services Research*, 18(51), 2018.

[19] Paolo Berta, Rosella Levaggi, Gianmaria Martini, and Stefano Verzillo. The redistributive effects of copayment in outpatient prescriptions: evidence from lombardy. *BMC Health Services Research*, 17(1):336, 2017.

[20] Paolo Berta, Matteo Bossi, and Stefano Verzillo. %CEM: a SAS macro to perform Coarsened Exact Matching. *Journal of Statistical Computation and Simulation*, 87(2):227–238, 2017.

[21] Paolo Berta, Giuseppe D'Orio, and Tommaso Grillo Ruggeri. La valutazione degli esiti per specialita': la sperimentazione del metodo crisp-mes per le aou del network delle regioi. In *La valutazione delle performance delle Aziende Ospedaliero-Universitarie*, pages 105–119. il Mulino, Bologna, 2016.

[22] Giorgio Vittadini, Paolo Berta, and Merlino Luca Giuseppe. La valutazione degli esiti per specialita': introduzione metodologica. In *La valutazione delle performance delle Aziende Ospedaliero-Universitarie*, pages 89–103. il Mulino, Bologna, 2016.

[23] Paolo Berta, Salvatore Ingrassia, Antonio Punzo, and Giorgio Vittadini. Multilevel cluster-weighted models for the evaluation of hospitals. *METRON*, pages 1–18, 2016.

[24] Paolo Berta, Gianmaria Martini, Francesco Moscone, and Giorgio Vittadini. The association between asymmetric information, hospital competition and quality of healthcare: evidence from italy. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 179(4):907–926, 2016.

[25] Anna Garriga, Sebastià Sarasa, and Paolo Berta. Mother's educational level and single motherhood: Comparing spain and italy. *Demographic Research*, 33:1165–1210, 2015.

[26] Gianmaria Martini, Paolo Berta, John Mullahy, and Giorgio Vittadini. The effectiveness-efficiency trade-off in health care: The case of hospitals in Lombardy, Italy. *Regional Science and Urban Economics*, 49:217–231, 2014.

[27] Paolo Berta, Chiara Seghieri, and Giorgio Vittadini. Comparing health outcomes among hospitals: the experience of the Lombardy Region. *Health care management science*, 16(3):245–257, 2013.

[28] Paolo Berta, Luca Merlino, and Giorgio Vittadini. Efficacia ex post. In *Manuale del Sistema di valutazione della performance degli ospedali lombardi*, pages 33–45. Aracne Editrice, Milano, 2012.

[29] Paolo Berta, Gianmaria Martini, and Giorgio Vittadini. L'efficienza. In *Manuale del Sistema di valutazione della performance degli ospedali lombardi*, pages 63–67. Aracne Editrice, Milano, 2012.

[30] Paolo Berta, Gianmaria Martini, and Giorgio Vittadini. Appendice i. In *Manuale del Sistema di valutazione della performance degli ospedali lombardi*, pages 77–89. Aracne Editrice, Milano, 2012.

[31] Giorgio Vittadini, Paolo Berta, Gianmaria Martini, and Giuditta Callea. The effect of a law limiting upcoding on hospital admissions: evidence from italy. *Empirical economics*, 42(2):563–582, 2012.

[32] Paolo Berta, Giuditta Callea, Gianmaria Martini, and Giorgio Vittadini. The effetcs of upcoding, cream skimming and readmissions on the italian hospitals efficiency modelling: a populaiton-based investigtion. *Economic modelling*, 27(4):789–890, 2010.

[33] Giorgio Vittadini and Paolo Berta. La valutazione dell'efficacia in sanita'. In *La valutazione della qualita' nel sistema sanitario. Analisi dell'efficacia ospedaliera in Lombardia*, pages 25–64. Guerini Editore, Milano, 2010.

[34] Paolo Berta and Michele Castelli. Appendice 1 – la valutazione dell'efficacia a livello internazionale. In *La valutazione della qualita' nel sistema sanitario. Analisi dell'efficacia ospedaliera in Lombardia*, pages 25–64. Guerini Editore, Milano, 2010.

[35] Carlo Zocchetti and Paolo Berta. La variabilita' entro regione. il caso della lombardia. *I quaderni di Monitor*, 3(22), 2008.

[36] Paolo Berta. La metodologia statistica. In *La famimglia davanti all'autismo*, chapter 3, pages 27–34. Guerini Editore, Milano, 2008.

[37] Luca Merlino and Paolo Berta. La valutazione degli outcome negli ospedali lombardi. *Non Profit*, 3:749–762, 2007.

[38] Giorgio Vittadini, Maurizio Sanarico, and Paolo Berta. Testing procedures for multilevel models with administrative data. In Sergio Zani, Andrea Cerioli, Marco Riani, and Maurizio Vichi, editors, *Data Analysis, Classification and the Forward Search*, pages 329–337, Berlin, Heidelberg, 2006. Springer Berlin Heidelberg.