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Full Professor of Economic Statistics
University of Bologna

Education

Degree (Economic Statistics) 1990, University of Bologna.

Ph.D. 1995, Statistics, University of Bologna.

Grants

- Principal Investigator (PI) for the local unit of Bologna for the project: *SARALAB*, ERASMUS PLUS - AZIONE KA1, 2018/2019.
- Principal Investigator (PI) for the local unit of Bologna for the project: “Blue-Enterprise and Trade Statistics- (BLUE-ETS)”. Seventh Framework programme-Theme 8, Socio-economic Sciences and Humanities (SSH), 2010/2013.
- Scientific Coordinator for the University of Bologna, European Commission’s Lifelong Learning Programme (2012).

Honors

- American University, Washington DC, USA, Research Associates of the Info-Metrics Institute from 2011. <https://www.american.edu/cas/economics/info-metrics/>
- Center for Philosophy, Science, and Policy. External Members from 2023. <https://csp.univpm.it/profile/motivation-mission/>
- Brown University, Providence, RI – USA, 6 months, PhD Research Fellow, 1995.

Research Interests

Measurement errors in surveys and data quality, Statistical Utilization of administrative registers, Data Disaggregation procedures, Linear and Nonlinear Dynamics of Economic Systems and Data, Statistics and Information Systems, Policy and Applied Micro Economics. Information Theory and Entropy Econometrics, Spatial Econometrics/Spatial Micro-econometrics (Theory and Applied). Quantum systems bio-photons measurements.

Teaching

Economic Statistics (Undergraduate level), Measurements of productivity, Competitiveness and Efficiency (Postgraduate level); Quantitative methods in analysing development Analysis (Postgraduate level) University of Bologna.

Additional Teaching Experience

Short courses; 1- Information theoretic and entropy estimation methods, 2 - Productivity analysis (PhD level, Statistics, in English), Productivity analysis, Econometric models, Measurement of Economic Phenomena, University of Bologna (in English); Econometrics, Statistics, Economic Time series, National Accounts: methods and models, Marketing Research. Economic National Accounts for the Environment (Master degree, Social European Found/Umbria Region), Master, University of Perugia; ISTAT/EUROSTAT/Umbria Region – courses/workshops focused on Consumer price indices, Statistics and Economics (1997/1998 in English).

Faculty Positions

University of Perugia – Faculty of Economics, Research Professor	1999-2004
University of Bologna – Faculty of Statistics, Associate Professor	2004-2007
University of Bologna – Faculty of Statistics, Full Professor	2016
American University, Washington DC, USA, Research Associates of the Info-Metrics Institute	from 2011
University of Bologna – Member of the Ph.D scientific board for the Ph.D in Statistics, University of Bologna	2008-2021.

Other Academic Positions

Department of Economics, American University, Washington DC, USA Visiting professor September 2009, Faculty Supervisor: Prof. Amos Golan.

Department of Economics, London School of Economics and Political Science, LSE. Faculty Supervisor: Prof. O. Linton. LSE, London: Visiting Professor 2005 (2 months)

Brown University, Providence, RI – USA: Phd Research Fellow 1995 (6 months)

Italian National Statistical Institute – ISTAT – Roma- Italy: Research 1996-1998

Research and Institutional Activities

- Director of First Cycle Degree of International Development and Cooperation, 2013 - 2019.
- Scientific Committee and Local Organizing Committee of the School of the Italian Statistical Society, “Foundations of Info-Metrics and Information-Theoretic Methods of Inference”, Bologna, January 8 - 9 2018, Department of Statistical Sciences, University of Bologna.

- Scientific Coordinator for the University of Bologna, European Commission's Lifelong Learning Programme (April 23-27 2012; October 8-12 2012, Prof. María Jesús Delgado Rodríguez, University Rey Juan Carlos, Madrid, Spain e Prof. Sonia de Lucas Santos, Universidad Autonoma de Madrid, Madrid, Spain.
- Ph.D supervisors (Annalisa Donno; Rodolfo Metulini, University of Bologna).
- Member of the Commission for the orientation test of the SVIC and SPOSI degree courses, University of Bologna from 2013.
- Member of the Quality Assurance Commission of the Degree Course in Development and International Cooperation (from 2012-2022).
- Member of the board for Internships in the Degree Course in Development and International Cooperation (from 2014 to 2020).
- Reviewer of MIUR research projects
- Member of the Board for a Research and Teaching courses (Selection)
 - Researcher Competition, SECS S/03, University of Padova, 2008.
 - PhD Researcher , University of Bologna, 2011/12, 27° ciclo.
 - PhD research competition, Lions Prize Lions Club Bologna - edizione 2012.
 - Researcher Competition, SECS S/03, University of Padova, 2014.
 - “Esame di Stato per la Professione di Statistico”, Università di Bologna.
 - Associated professor, 13/ D2 –Università degli studi di Perugia, 2018.
 - Researcher, 13/ D2, University of Bologna, 2019.
 - Researcher, 13/ D2, University of Chieti-Pescara, 2019.
 - Full Professor 13/ D2 , University of Padova, 2019.
 - Researcher 13/ D2, University of Bergamo, 2019.
 - Full Professor 13/ D2 , University of Bologna, 2020.
 - Associated professor, 13/ D2 –Università degli studi di Perugia, 2021.
- Teaching course Statistics Area, Universty of Bologna, 2013-2019.
- Tutor for courses, Statistics Area, Universty of Bologna, 2013-2019.
- Tutor for L courses degree (SVIC, SPOSI), Universty of Bologna, 2013-2019.

Research projects: coordination and participation (a selection)

- Research Grant, Italian Ministry of research and University, MURST 40% (1994/1996), Research Field: Complex social and economic Surveys, Measurement errors in survey and data quality.
- Research Grant, Department of Economics, Brown University, Providence, RI, USA (January/July 2005) Research Field: Estimation Problems in Non-Linear Models with Partially Missing Observations. Faculty Supervisors: Prof. P. Tony Lancaster, Pedro L. Gozalo.
- Research Grant, Italian Ministry of research and University, MURST 60% (1996), Research Field: Consumer expenditure surveys and analysis of consumption.

- Research Grant, EUROSTAT (1996/98) Research Field: revision of consumer price indices for an Harmonization at European level.
- Research Grant, “Study Group on quality change for vehicles – EUROSTAT” (1996/98), Members :Rachel Griffin, ONS, UK, Paul Haschka, Ostat, Austria, Arja Kinnunen, Statistics Finland, Ignazio Gonzales Veiga, INE, Spain. Consultant: Prof. Y. Vartia, University of Helsinki, Finland.
- Research Grant, Italian Ministry of research and University, MURST 40% (1997/1999), Research Field: data fusion from administrative registers.
- Research Grant, Department of statistics, University of Bologna (1999), Research Field: Maximum entropy estimation in presence of Nonrandom sampling.
- Research Grant, Italian Guaranty Commission for Statistical Information (1999), Research Field: Measurement errors in economic survey and data quality.
- Research Grant, Ministry of productive activities, Italian National Statistical Institute, Region of Umbria, (2000/2005), Research Field: Regional Consumer price indices.
- Research Grant, Italian Ministry of research and University, COFIN (1999/2001and 2001/2003), Research Field: quality of economic surveys and new strategies to collect data.
- Research Grant, Italian Ministry of research and University, COFIN (2003/2005 and 2005/2007)), Research Field: measurement and analysis of productive systems.
- Research Grant, Italian Guaranty Commission for Statistical Information (2011), Research Field: Intangible Assets measurements and National Accounts.
- Principal Investigator (PI), University of Bologna: “Blue-Enterprise and Trade Statistics- (BLUE-ETS)”. Seventh Framework programme-Theme 8, Socio-economic Sciences and Humanities (SSH), 2010/2013.
- Principal Investigator (PI), University of Bologna: *SARA LAB*, ERASMUS PLUS - AZIONE KA1: 2018/2019.

Editorial Activity

Member of the Editorial Board of:

- *Electronic Journal of Applied Statistical Analysis*. (EJASA)
- *American Journal of Applied Mathematics*. (AJAM)

Referee for the following Journals:

Journal of Business and Economic Statistics, Journal of Official Statistics, Journal of Applied Statistics, Entropy, Statistical Methods & Applications, Journal of Productivity Analysis, The Annals of Regional Science, Asian Journal of Mathematics and Statistics, International Journal of the Economics of Business, Studies in Nonlinear Dynamics & Econometrics, International Regional Science Review, Statistica, Empirical Economics, Computational Statistics and Data Analysis, American Journal of Applied Mathematics.

International Societies

Italian Statistical Society (SIS), American Statistical Association (ASA), System Dynamics Society (SDS), International Statistical Institute (ISI)/International Association for Statistical Computing (IASC), European Regional Science Association (ERSA).

Conference Presentations (selection from 2008)

- “MaxEnt 2008”- Sao Paolo, Brasil, July 6th – 11th 2008.
- “European Conference on Quality in Official Statistics (Q2008)”, Roma, Luglio 8-11, 2008.

- Invited speaker, Two contributions: Metodi, Modelli e Tecnologie dell'Informazione a Supporto delle Decisioni, Lecce, Settembre 18-20, 2008.
- Invited speaker, 10THWSEAS International Conference on Mathematics and computers in Business and Economics, Prague, March 23-25, 2009.
- EWPA 2009, XI European Workshop on Efficiency and Productivity Analysis, Pisa, June 23-26 2009.
- Invited speaker, Two contributions: 11th WSEAS Int. Conference on Mathematics and Computers in Business and Economics (MCBE'10). Iasi, June 13-15 2010.
- I cambiamenti della manifattura italiana visti attraverso l'indagine UniCredit 8 marzo 2010, Università degli Studi di Milano.
- SIE - Società Italiana degli Economisti, 51.ma Riunione Scientifica Annuale, Catania - 15, 16 ottobre 2010.
- Invited speaker: Info-Metrics: Theory and Applications, American University, Washington DC, September 24-25 2010.
- International Conference on "Human Capital and Employment in the European and Mediterranean Area". Bologna. 10-11 March 2011.
- EWPA 2011, XI European Workshop on Efficiency and Productivity Analysis, Verona, June 22-24 2011.
- SIE - Società Italiana degli Economisti, 52.ma Riunione Scientifica Annuale, Roma- 14-15 ottobre 2011.
- Invited speaker: ERSA 2011 Congress: New Challenges for European Regions and Urban Areas in a Globalised World, 30th August to 3rd September 2011, University of Barcelona in Barcelona.
- Two contributions: ERSA 2012 congress, Bratislava, October 19-22 2012.
- The 20th International Input-Output Conference 2012, Bratislava, Slovakia, June 24-29, 2012.
- Two contributions: BLUE-ETS EU FP7 Project, Workshop on phase 2 advances, new tools and research results, 8-9 November 2012, Istat, Rome.
- The 6th CSDA International Conference on Computational and Financial Econometrics (CFE 2012) , 1-3 December 2012, Conference Centre, Oviedo, Spain.
- EWPA 2013, 13th European Workshop on Efficiency and Productivity Analysis, 17 – 20 June 2013, Aalto University School of Business Helsinki, Finland.
- SIS 2013: Advances in Latent Variables - Methods, Models and Applications Brescia, Department of Economics and Management June 19, 2013 – June 21, 2013.
- ERSA 2013 Regional Integration: Europe, the Mediterranean and World Economy, 53rd Ersa Congress, 27-31 August 2013, Palermo, Italy.
- 54^a Riunione Scientifica annuale – Società Italiana degli Economisti Bologna, 24-26 ottobre 2013.
- Workshop internazionale “Trade and Innovation”, Dipartimento di Economia e Management, Università di Ferrara, 12 giugno 2014.
- ESD, International scientific conference economics and social development, New York October 24, 2014, New York, USA.
- Invited speaker: Round table, Info-Metric Fall Conference: recent innovations in Info-Metrics, October 31-November 1, 2014, Washington DC, USA.
- X World Conference SEA2016 – Rome, June 13-15, 2016, Università Cattolica del Sacro Cuore, Roma, Italy.
- Invited speaker: Info-Metrics: State of Research - Past, Present, Future American University Ca ampus Thursday, November 3, 2016, Washington DC, USA.
- Invited speaker, 12th International Conference on Computational and Financial Econometrics (CFE 2018), University of Pisa, Italy, 14-16 December 2018, “[Entropy based small area estimation for count data with spatial effects](#)” coautore, Esteban Fernandez Vazquez - University of Oviedo (Spain).
- 12th International Conference on Computational and Financial Econometrics (CFE 2018), University of Pisa, Italy, 14-16 December 2018, “GME discrete model with exogenous spatial effect variable for the job satisfaction” coautori: Enrico Ciavolino - University of Salento (Italy), Maurizio Carpita - University of Brescia (Italy), Esteban Fernandez Vazquez - University of Oviedo (Spain).
- ISER International Conference, New York, USA, 2019.
- Invited speaker (Chair, Scientific Committee). Recent Advances in Info-Metrics Research, April 8, 2021, Info-Metris Institute, W-DC, USA.

- Invited speaker, 4th Workshop on Maximum Entropy and its Applications, July 7, 2021, [Department of Mathematics of the University of Aveiro](#) and the Center for Research & Development in Mathematics and Applications (CIDMA, University of Aveiro, Portugal).
- SAE 2022: Small Area Estimation, Surveys and Data Science, May 23-27, 2022, University of Maryland, College Park, USA.

Publications (Selection from 2008)

Bernardini Papalia R., Gullà D., Nastati E., Quantum agriculture and experimental detection of wheat flour quality using thermal image technology. *Heliyon*, 2023.

Bernardini Papalia R., Scognamiglio G., Environmental justice: Geo-statistical analysis of environmental hazards and socioeconomic factors. The case of Italy. Under revision, 2023.

Bernardini Papalia R., Fernandez Vazquez E., Spatial Small Area Information theoretic based estimation for Non-Gaussian Discrete Data Under Informative Sampling”, Proceedings of the SAE 2022: Small Area Estimation, Surveys and Data Science, University of Maryland, College Park, USA, May 24-27, 2022.

Bernardini Papalia R., Uncertainty in Official Statistics: key perspectives of the Info-Metrics approach, Proceedings of the 4th Workshop on Maximum Entropy and its Applications, Department of Mathematics of the University of Aveiro, Portugal, July 7, 2021.

Bernardini Papalia R., Fernandez Vazquez E., *Forecasting Socioeconomic Distributions on Small-Area Spatial Domains for Count Data*, in: *Advances in Info-Metrics: Information and Information Processing across Disciplines*, edited by M.Chen, J.M. Dunn, A. Golan, A. Ullah, Oxford, Oxford University Press, pp. 240-263, 2021.

Bernardini Papalia R.; Fernandez Vazquez E., *Entropy-Based Solutions for Ecological Inference Problems: A Composite Estimator*, *Entropy*, 2020, 22(7), 781, 1-12.

Bernardini Papalia R., Evaluating Social and Emotional Skills: New ICT-based Techniques, *International Journal of Biomedical Engineering* Vol. 6: Issue 1, 2020, IJBE (2020) 6-11.

Bernardini Papalia R., Review of: *Foundations of Info-Metrics: Modeling, Inference, and Imperfect Information*, «JOURNAL OF THE ROYAL STATISTICAL SOCIETY. SERIES A, STATISTICS IN SOCIETY», 2019, Volume 183, Issue 1, pp. 404 – 405.

Bernardini Papalia R., Measuring emotional skills: new methods and perspectives, in: Proceedings of 235th ISER International Conference, New York, USA, 2019, pp. 9 - 12 (235th ISER International Conference, New York, USA, 16th – 17th November, 2019).

Bernardini Papalia R., Fernandez Vazquez E., *Entropy based small area estimation for count data with spatial effects*, in: Book of Abstract CFE-CMStatistics 2018, atti di: CFE-CMStatistics 2018, 12th International Conference on Computational and Financial Econometrics, 2018, pp. 178 - 178 (11th International Conference of the ERCIM Working Group on Computational and Methodological Statistics,, Pisa, Italy, 14-16 December 2018).

Bernardini Papalia R., Carpita M., Ciavolino E., Fernandez Vazquez E., *GME discrete model with exogenous spatial effect variable for the job satisfaction*, in: Book of Abstract CFE-CMStatistics 2018, atti di: CFE-CMStatistics 2018, 12th International Conference on Computational and Financial Econometrics, 2018, (11th International Conference of the ERCIM Working Group on Computational and Methodological Statistics,, Pisa, Italy, 16th – 17th November, 2019).

Bernardini Papalia, R.; Fernandez Vazquez, E., *Information Theoretic methods in small domain estimation*, «ECONOMETRIC REVIEWS», 2018, .37, pp. 347 – 359.

Bernardini Papalia, R.; Bertarelli, S.; Mancinelli, S., *Innovation, complementarity, and exporting. Evidence from German manufacturing firms*, «INTERNATIONAL REVIEW OF APPLIED ECONOMICS», 2018, 32, pp. 3 – 38.

Bernardini Papalia, R.; Ciavolino E., *Developing a composite index by using spatial latent modelling based on information theoretic estimation*, «QUALITY & QUANTITY», 2015, 49, pp. 989 - 997

Rosa Bernardini Papalia;Pinuccia Calia;Carlo Filippucci, *Information Theoretic Competitiveness Composite Indicator at Micro Level*, «SOCIAL INDICATORS RESEARCH», 2015, 123, pp. 349 – 370.

Bernardini Papalia, R; Fernandez Vazquez E., *PREDICTING INDICATORS AT SMALL SCALE USING ENTROPY ECONOMETRICS*, «JOURNAL OF ECONOMIC AND SOCIAL DEVELOPMENT», 2015, Vol 2, No 1, pp. 66 – 74.

Bernardini Papalia R; Bertarelli S., *Trade costs in bilateral trade flows: Heterogeneity and zeroes in structural gravity models*, «WORLD ECONOMY», 2015, Volume 38, Issue 11, pp. 1744 - 1762

Bernardini Papalia R; Bertarelli S., *Identification and estimation of club convergence models with spatial dependence*, «INTERNATIONAL JOURNAL OF URBAN AND REGIONAL RESEARCH», 2013, 37, pp. 2094 - 2115 [Scientific article]

Bernardini Papalia R; Bertarelli S., *Non linearities in economic growth and club convergence*, «EMPIRICAL ECONOMICS», 2013, 44, 3, pp. 1171 - 1202 [Scientific article]

Bernardini Papalia R., *An information theoretic approach to ecological inference in presence of spatial dependence*, in: Rethinking the Economic Region. New Possibilities of Regional Analyses from data at Small Scale, BERLIN, SPRINGER-VERLAG, 2012, pp. 157 - 171 [Chapter or essay]

Bernardini Papalia R.;Ciavolino E., *GME estimation of spatial structural equations models*, «JOURNAL OF CLASSIFICATION», 2011, 28 (1), pp. 126 - 141 [Scientific article]

Bernardini Papalia R.; S. Bertarelli; C. Filippucci, *Human capital, technological spillovers and development across OECD countries*, Bologna, AlmaLaurea, 2011, pp. 13 (ALMALAUREA WORKING PAPERS). [Research monograph]

R. Bernardini Papalia; P. Calia, *A novel factor decomposition of productivity differentials: evidence from foreign owned and domestic firms in Italy*, «WSEAS TRANSACTIONS ON BUSINESS AND ECONOMICS», 2010, 7, pp. 332 - 348 [Scientific article]

Bernardini Papalia R., *Data Disaggregation Procedures within a Maximum Entropy Framework*, «JOURNAL OF APPLIED STATISTICS», 2010, 37(11), pp. 1947 - 1959 [Scientific article]

Bernardini Papalia R.; Bertarelli S., *Evaluating total factor productivity differences by a mapping structure in growth models*, «INTERNATIONAL REGIONAL SCIENCE REVIEW», 2010, 33, 1, pp. 31 - 59 [Scientific article]

Bernardini Papalia R., *Generalized Maximum Entropy Estimation of Spatial Panel Interaction Models*, «WSEAS TRANSACTIONS ON BUSINESS AND ECONOMICS», 2010, 4(7), pp. 322 - 331 [Scientific article]

Bernardini Papalia R., *Incorporating spatial structures in ecological inference: an information theoretic approach*, «ENTROPY», 2010, 12(10), pp. 2171 - 2185 [Scientific article]

Bernardini Papalia R; Bertarelli S., *Decomposing productivity patterns in a conditional convergence framework*, «JOURNAL OF PRODUCTIVITY ANALYSIS», 2009, 31, pp. 57 - 75 [Scientific article]

Bernardini Papalia R., *Estimating spatial heterogeneous panel data: an Information-Theoretic approach*, «WSEAS TRANSACTIONS ON BUSINESS AND ECONOMICS», 2009, 6: 4, pp. 167 - 176 [Scientific article]

Bernardini Papalia R., *Estimating spatial heterogenous panel data: an Information-Theoretic Approach*, «WSEAS TRANSACTIONS ON BUSINESS AND ECONOMICS», 2009, 6, 4, pp. 167 - 176 [Scientific article]

Bernardini Papalia R.; Bertarelli S., *The Role of Local Agglomeration Economies and Regional Characteristics in Attracting FDI: Italian Evidence*, «INTERNATIONAL JOURNAL OF THE ECONOMICS OF BUSINESS», 2009, 16, 2, pp. 161 - 188 [Scientific article]

Bernardini Papalia R., *A composite generalized cross entropy formulation in small sample estimation*, ECONOMETRIC REVIEWS, 2009, 27 (4-6), 596-609.

Bernardini Papalia R., *Analyzing Trade Dynamics from Incomplete Data in Spatial Regional Models: a Maximum Entropy Approach*, in: Bayesian inference and maximum entropy methods in science and engineering, NEW YORK, American Institute of Physics, 2008, 1073, pp. 325 - 331 (atti di: 28 TH WORKSHOP ON BAYESIAN INFERENCE AND MAXIMUM ENTROPY METHODS IN SCIENCE AND ENGINEERING, UNIVERSITY OF SAO PAULO, BRAZIL, 6-11 JULY 2008) [Contribution to conference proceedings]

Bernardini Papalia R; Calia P., *Decomposing productivity differential: evidence from foreign owned and domestic firms in Italy*, BOLOGNA, ALMA DL – Rapporti di ricerca, Università di Bologna, 2008, pp. 22 (Quaderni di Dipartimento di Scienze Statistiche, ISSN 1973-9346). [Research monograph]

Bernardini Papalia R., *Estimating item weights of Consumer Price Indexes for small reference populations*, «STATISTICS IN TRANSITION», 2008, 9 (1), pp. 49 - 70 [Scientific article]

Bernardini Papalia R.; Ciavolino E., *GME estimation of spatial structural equations models*, in: Models and Information Technologies for Decision Support Systems, LECCE, Editoria Scientifica Elettronica, 2008, pp. 228 - 231 (atti di: MTISD 2008, LECCE, 18-20 SEPTEMBER 2008) [Contribution to conference proceedings]

Bernardini Papalia R., *Incorporating spatial structures in ecological inference: an information theoretic approach*, in: Methods, Models and Information Technologies for Decision Support Systems, LECCE, Editoria Scientifica Elettronica, 2008, pp. 232 - 235 (atti di: MTISD 2008, LECCE, 18-20 SEPTEMBER 2008) [Contribution to conference proceedings]