

Curriculum Vitae of Francesco Bartolucci

(scientific and teaching activity)

Department of Economics
University of Perugia
06123 – Perugia (IT)

Education

- 1995: Graduation in Economics - University of Perugia
- 1999: Doctorate in “Statistical and Mathematical Methods for the Economic and Social Research” - University of Perugia

Current position

- 2007 - : Full Professor of Statistics in the Department of Economics at the University of Perugia (title of Full Professor acquired in 2005)

Current institutional roles and responsibilities

- 2020 -: Member of the Scientific-Strategic committee of AlmaLaurea
- 2019 -: Member of the Academic Board of the Doctorate program in Economics at the University of Perugia

Previous positions

- 2005 - 2007: Associate Professor of Statistics in the Faculty of Economics at the University of Perugia
- 2002 - 2005: Associate Professor of Statistics in the Faculty of Economics at the University of Urbino (IT)
- 2001 - 2002: Assistant Professor of Statistics in the Faculty of Political Sciences at the University of Perugia
- 1998 - 2001: Research Assistant in the Department of Statistics at the University of Perugia within the research project on “Graphical models with latent variables and stochastic ordering constraints”

Previous institutional roles and responsibilities

- 2018 - 2021: Member of the steering committee of the Italian Econometric Society (SIdE)
- 2013 - 2021: Member of the Committee of Evaluation (“Nucleo di Valutazione”) of the University of Perugia
- 2013 - 2019: Member of the Academic Board of the Doctorate program in “Mathematics, Informatics, and Statistics” at the University of Florence, jointly with the University of Perugia
- 2007 - 2012: Coordinator of the PhD program in “Mathematical and Statistical Methods for the Economic and Social Sciences” at the University of Perugia
- 2002 - 2012: Member of the Academic Board of the PhD program in “Econometrics and Empirical Economics” at the University of Rome “Tor Vergata” (IT)

Visiting periods

- 2017: Distinguished Visiting Scholar at Rhode Island University (USA) – short period
- 2009-: Several short visiting periods within Erasmus Exchange programs at: University College of Dublin (IE), Universitat Pompeu Frabra of Barcelona (ES)
- 2000: Visiting scholar in the Department of Statistics at the Penn State University (USA)
- 1997: Doctorate visiting student in the School of Mathematics and Statistics, University of Sheffield (UK)

Research interests

- Analysis of complex data structures: Longitudinal/multilevel data; spatial-temporal data; social networks
- Models for panel data, with applications in health, education and labor market
- Marginal models for categorical data
- Mixture and latent variable models, included hidden Markov models
- Monte Carlo and optimization algorithms for Bayesian and maximum likelihood estimation
- Stochastic volatility models based on hidden variables

Bibliometric indices

- H-index WoS: 24
- H-index Scopus: 25
- H-index Google Scholar: 34

Research projects (as coordinator)

- 2020: Scientific coordinator of the local unit in the Department of Economics of the University of Perugia within project "InPreSa" about COVID-19 funded by Lombardy Region
- 2019 - : Scientific coordinator (together with Prof. L. Ferrucci) of the local unit in the Department of Economics of the University of Perugia within the CARE project about cardiologic pathologies, with a project cost greater than 100.000€ for the single unit
- 2013-2016: Principal Investigator of the research grant about "Mixture and latent variable models for causal inference and analysis of socio-economic data", which was funded by the Italian Government (FIRB 2012 – "Futuro in ricerca"), with an overall project cost of around 900.000€
- 2009-2011: Principal Investigator of the research project "Advances in non-linear panel models with socio-economic applications" funded by the "Einaudi Institute for Economics and Finance" (Rome) for an overall amount of 30.000€
- 2007 - : Coordinator of several projects funded by Departments of Medicine within University of Perugia, for an overall amount of over 100.000€

Relevant research projects (as member)

- 2022, Project about COVID-19 funded by Fondazione Cassa di Risparmio di Perugia
- PRIN 2007, "Marginal models for causal inference"
- PRIN 2005, "Marginal models for causal inference"
- PRIN 2003, "Inference under uncertainty on the model"
- PRIN 2002, "Stochastic ordering in the analysis of dependence in multiple tables with application in sociology and health".

Editorial and evaluation activity

- 2022 - : Editor of *Statistical Modelling: An International Journal*
- 2017 - 2021: Associate Editor of the *Journal of the Royal Statistical Society – Series A*
- 2017: Guest Co-Editor of the special section of the *Biometrical Journal* on "Latent variable models for Longitudinal data"
- 2015 - 2016: Member of the Group of Evaluation Experts (GEV) that managed the Evaluation of the Quality of Research (VQR) - period 2011-2014 - for the subjects of Economics and Statistics; Coordinator of the sub-group evaluating research products in Statistics and Mathematical Methods for Decisions
- 2015: Guest Co-Editor of the Special Issue of *Metron* on "Latent variable models for the analysis of socio-economic data"
- 2012 - 2013: Member of the Group of Evaluation Experts (GEV) that managed the Evaluation of the Quality of Research (VQR) period 2004-2010, for the subjects of Economics and Statistics
- 2009 - 2012: Associate Editor of *Statistical Methods and Applications*
- 2007 - : Associate Editor (and then member of the Advisory Board) of *Metron*
- 2003 - 2021: Associate Editor of *Statistical Modelling: An International Journal*
- Referee for the most important international journals of Statistics and Econometrics

Organization of international conferences and workshop

- CCDA 2022, "Challenges for Categorical Data Analysis", Perugia (I), to be held in May 2022 (member of the organizer committee)

- ICEEE 2021, "Ninth Italian Congress of Econometrics and Empirical Economics", Cagliari (I), January 2021 (member of the program committee)
- IWEED 2018, "First Italian Workshop of Econometrics and Applied Economics: Panel Data Models and Applications", Milan, January 2018 (Chair of the program committee)
- "International Workshop on Statistical Modelling", Rennes (F), July 2016 (member of the scientific committee)
- ICEEE 2013, "Fifth Italian Congress of Econometrics and Empirical Economics", Genova (IT), January 2013 (member of the program committee)
- ICEEE 2011, "Fourth Italian Congress of Econometrics and Empirical Economics", Pisa (IT), January 2011 (member of the program committee)
- Conference of the Italian Statistical Society, Bologna (IT), June 2011 (member of the scientific programme committee)
- "Patient Reported Outcomes and Quality of Life", Paris (F), July 2011 (member of the scientific committee)
- "Classification and Data Analysis (CLADAG) 2008", Caserta (IT), June 2008 (member of the scientific committee)
- "International Workshop on Statistical Modelling", Barcelona (ES), July 2007 (member of the scientific committee)
- "Statistical Latent Variables Models in the Health Sciences", Perugia, September 2006 (member of the local committee)

Participation to conferences as invited speaker

- 2023: "A causal latent transition model with multivariate outcomes and unobserved heterogeneity: Application to human capital development", BW-WISPA (special session in honor of R.Colombi)
- 2022: "Discrete latent variable models with a special focus on hidden Markov models", ICDSBA2022 (as keynote speaker)
- 2021: "Hidden Markov and regime switching copula models for state allocation in multiple time-series", CLADAG2021
- 2020: "A shared-parameter continuous-time hidden Markov and survival model for longitudinal data with informative dropout", 30th International Biometric Conference
- 2020: "Latent Markov models for longitudinal data in R by LMest package", The European R Users (eRum), Milan
- 2019: "Latent variable models for evaluation systems", IES 2019 - Statistical evaluation systems at 360°: techniques, technologies and new frontiers, Rome
- 2018: "Marginal models with individual-specific effects for the analysis of longitudinal bipartite networks", Challenges for Categorical Data Analysis, Aachen (D)
- 2015: "Latent Markov model for causal inference with dynamic clustering: an application to the effectiveness of degree programs", SKAD conference, Danzic (PL)
- 2014: "Model selection in generalized linear finite mixture regression models by Hausman testing", MCB2, Catania (I) (as keynote speaker)
- 2012: "Modeling Longitudinal Data with Application to Educational and Psychological Measurement", CLADAG, Anacapri (I) (as keynote speaker)

Seminars

- 2021: "A Bayesian Multinomial model for repeated contingency tables with observed margins", Slide (Italian Econometric Society) Webinar
- 2018: "Advances in conditional maximum likelihood estimation of models for binary panel data", CEMFI, Madrid (ES)
- 2018: "Dealing with reciprocity in static and dynamic stochastic block models", CEIS Tor Vergata
- 2017: "Shedding light on the mystery of Data Science: Statistician's view", University of Rhode Island (USA)
- 2017: "Latent Markov models for longitudinal data", University of Rhode Island
- 2016: "Composite likelihood inference for hidden Markov models for dynamic networks: A new perspective for stochastic blockmodels", University of Lugano (CH)
- 2016: "Stochastic block models: Inferential developments in the context of static and dynamic social networks", University of Milano-Bicocca (IT)
- 2015: "Quadratic exponential model for estimating the dynamic logit model and testing for state dependence in binary panel data", University of Luxembourg (LU)

- 2014: “Study of the effect of the university degree on the work path by a latent Markov model”, University of Bolzano (IT)
- 2013: “Testing for time-invariant unobserved heterogeneity in nonlinear panel-data models”, University di Bologna (IT)
- 2012: “Testing for time-invariant unobserved heterogeneity in nonlinear panel-data models”, University of Genève (CH)
- 2012: “Ranking scientific journals via latent class models for polytomous item response data”, EIEF, Rome (IT)
- 2012: “Continuous and discrete latent variable models for longitudinal data: Comparison and new proposal”, University of Catania (IT)
- 2012: “Latent variable models for longitudinal data”, University of Rome 3 (IT)
- 2010: “Performance evaluation of nursing homes via latent Markov models”, University of Milan-Bicocca
- 2009: “Analysis of binary panel data by static and dynamic logit models”, University of Naples – Federico II (IT)
- 2009: “Pseudo conditional ML estimation of the dynamic logit model for binary panel data”, Universitat Pompeu Fabras of Barcelona & University of Leaven (BE)
- 2008: “Dynamic logit model: Pseudo conditional likelihood estimation and latent Markov extension”, University of Rome – LUISS (IT)
- 2006: “Likelihood inference for a latent Markov Rasch model, with application to educational assessment”, University of Paris VI- Pierre et Marie Curie (F)
- 2005: “A class of latent marginal models for capture-recapture data with continuous covariates”, University of Pavia (IT)
- 2004: “Empirical likelihood control charts for the process mean”, Department of Applied Statistics and Operational Research, Universitat Politècnica de Valencia (ES)
- 2003: “A Markov chain approach to quality control”, Department of Applied Statistics and Operational Research, Universitat Politècnica de València
- 2003: “Mixture models for the analysis of capture-recapture data”, Bocconi University, Milan (IT)
- 2002: “Analysis of categorical data by marginal models expressed through equality and inequality constraints”, EIEF, Rome
- 2002: “A class of latent variable models for the analysis of capture-recapture data”, Insubria University, Varese (IT)
- 2000: “A likelihood ratio test for MTP2 within binary variables”, Penn State University

Supervision of PhD students

- Valentina Nigro, graduated in “Econometrics and Empirical Economics” - University of Rome “Tor Vergata” (2007)
- Daniela Fruttini, graduated in “Mathematical and Statistical Methods for the Economic and Social Sciences” - University of Perugia (2008)
- Silvia Pandolfi, graduated in “Mathematical and Statistical Methods for the Economic and Social Sciences” - University of Perugia (2011)
- Francesco Valentini, graduated in Economics – Marche Polytechnic University – Ancona (IT) - (joint supervision with Claudia Pigini) – (2020)
- Federico Tullio, graduated program in “Economics and Finance” - University of Rome “Tor Vergata” (2020)

Memberships

- Italian Econometric Society (SIde)
- Italian Statistical Society (SIS)
- Elected member of the International Statistical Institute (ISI)
- Institute of Mathematical Statistics (IMS)

Main teaching activity by Year or Academic Year

- 2000: Course on *Regression Methods* for master students at the Department of Statistics, Penn State University
- 2002/03: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Urbino
Course of *Data Analysis* for graduate students of the Faculty of Economics, University of Perugia
- 2003/04: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Urbino
Course of *Statistical Methods for Marketing* for students of the Faculty of Economics, University of Urbino
Course of *Data Analysis* for graduate students of the Faculty of Economics, University of Perugia
Short course about *Point Estimation* for students for Master MEI, University of Rome "Tor Vergata"
Short course about *Models for Categorical data* for students for Master MEI, University of Rome "Tor Vergata"
- 2004/05: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Urbino
Course of *Statistical Methods for Marketing* for students of the Faculty of Economics, University of Urbino
Course of *Data Analysis* for graduate students of the Faculty of Economics, University of Perugia
Short course about *Point Estimation* for students for Master MEI, University of Rome "Tor Vergata"
Short course about *Models for Categorical data* for students for Master MEI, University of Rome "Tor Vergata"
- 2005/06: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Urbino
Course of *Evaluation of Policies and Services* for students in Communication Science, University of Perugia
Course of *Statistics II* for undergraduate students of the Faculty of Economics, University of Perugia
Short course about *Point Estimation* for students for Master MEI, University of Rome "Tor Vergata"
- 2006/07: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Urbino
Course of *Evaluation of Policies and Services* for students in Communication Science, University of Perugia
Course of *Statistics II* for undergraduate students of the Faculty of Economics, University of Perugia
Short course about *Categorical Data Analysis* for PhD students in "Mathematical and Statistical Methods for Economic and Social Sciences", University of Perugia
- 2007/08: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Perugia
Course of *Evaluation of Policies and Services* for students in Communication Science, University of Perugia
Short course about *Categorical Data Analysis* for PhD students in "Mathematical and Statistical Methods for Economic and Social Sciences", University of Perugia
- 2008/09: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Perugia
Course of *Evaluation of Policies and Services* for students in Communication Science, University of Perugia
- 2009/10: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Perugia
Course of *Statistical Methods for Finance* for graduate students in Faculty of Economics, University of Perugia
Course on Latent variable models for visiting students at EIEF, Rome
- 2010/11: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Perugia
Course of *Statistical Methods for Finance* for graduate students in Faculty of Economics, University of Perugia
Course on Latent variable models for visiting students at EIEF, Rome
- 2011/12: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Perugia
Course of *Statistical Methods for Finance* for graduate students in Faculty of Economics, University of Perugia
Course on Latent variable models for visiting students at EIEF, Rome
- 2012/13: Basic course of *Statistics* for undergraduate students of the Faculty of Economics, University of Perugia
Course of *Statistical Methods for Finance* for graduate students in Faculty of Economics, University of Perugia
Course on Latent variable models for visiting students at EIEF, Rome

- 2013/14: Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
 Course of *Statistical Methods for Finance* for graduate students in Faculty of Economics, University of Perugia
 Course on Latent variable models for visiting students at EIEF, Rome
- 2014/15: Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
 Course of *Statistical Methods for Finance* for graduate students in the Department of Economics, University of Perugia
 Course on Latent variable models for visiting students at EIEF, Rome
- 2015/16: Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
 Course of *Statistical Methods for Finance* for graduate students in the Department of Economics, University of Perugia
 Course on Latent variable models for visiting students at EIEF, Rome
- 2016/17: Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
 Course of *Statistical Methods for Finance* for graduate students in the Department of Economics, University of Perugia
 Course on Latent variable models for visiting students at EIEF, Rome
 Course on Latent variable models for graduate students enrolled in the PhD program in “Mathematics, Informatics and Statistics” at the University of Florence, jointly with the University of Perugia
- 2017/18: Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
 Course of *Bayesian Computation* for graduate students in the Department of Economics, University of Perugia
 Course on Latent variable models for graduate students enrolled in the PhD program in “Mathematics, Informatics and Statistics” at the University of Florence, jointly with the University of Perugia
 Course of *Mathematical Statistics* (module II) within Master RoME (jointly organized by LUISS and EIEF)
- 2018/19: Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
 Course of *Bayesian Computation* for graduate students in the Department of Economics, University of Perugia
 Course on Latent variable models for graduate students enrolled in the PhD program in “Mathematics, Informatics and Statistics” at the University of Florence, jointly with the University of Perugia
 Course of *Mathematical Statistics* (module II) within Master RoME (jointly organized by LUISS and EIEF)
- 2019/20: Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
 Course of *Bayesian Computation* for graduate students in the Department of Economics, University of Perugia
 Course on *Models for longitudinal data* for graduate students enrolled in the PhD program in Economics at the University of Perugia
 Course of *Mathematical Statistics* (module II) within Master RoME (jointly organized by LUISS and EIEF)
 Cycle of seminars for the students of the PhD ECOSTAT at the University of Milan-Bicocca
- 2020/21: Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
 Course of *Bayesian Computation* for graduate students in the Department of Economics, University of Perugia
 Course on *Models for longitudinal data* for graduate students enrolled in the PhD program in Economics at the University of Perugia

- 2021/22: Course of *Mathematical Statistics* (module II) within Master RoME (jointly organized by LUISS and EIEF)
Cycle of seminars for the students of the PhD ECOSTAT at the University of Milan-Bicocca
Basic course of *Statistics* for undergraduate students in the Department of Economics, University of Perugia
Course of *Bayesian Computation* for graduate students in the Department of Economics, University of Perugia
Course on *Models for longitudinal data* for graduate students enrolled in the PhD program in Economics at the University of Perugia
Course of *Mathematical Statistics* (module II) within Master RoME (jointly organized by LUISS and EIEF)
Cycle of seminars for the students of the PhD ECOSTAT at the University of Milan-Bicocca

May 16, 2023

Francesco Bartolucci

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Main publications of Francesco Bartolucci (conference papers, working papers, and similar publications not reported)

Books

1. Bartolucci, F., Bacci, S., and Gnaldi, M. (2015), *Statistical Analysis of Questionnaires: A Unified Approach Based on Stata and R*, Chapman and Hall/CRC press.
2. Bartolucci, F., Farcomeni, A., and Pennoni, F. (2013), *Latent Markov Models for Longitudinal Data*, Chapman and Hall/CRC press.

Articles in international journals

1. Sherratt, K. et al. (2023), Predictive performance of multi-model ensemble forecasts of COVID-19 across European nations, *eLife, Epidemiology and Global Health*.
2. Pandolfi, S., Bartolucci, F., and Pennoni, F. (2023), A hidden Markov model for continuous longitudinal data with missing responses and dropout, *Biometrical Journal*, in press.
3. Bartolucci, F., Li Donni, P., and Mira, A. (2023), Temporal analysis of hospital network data by hierarchical Bayesian p2 models with covariates, *Journal of the Royal Statistical Society, Series A*, in press.
4. Bartolucci, F., Pennoni, F., and Vittadini, G. (2023), A Causal Latent Transition Model With Multivariate Outcomes and Unobserved Heterogeneity: Application to Human Capital Development, *Journal of Educational and Behavioral Statistics*, in press.
5. Bartolucci, F., Pigini, C., and Valentini, F. (2023), Testing for state dependence in the fixed-effects ordered logit model, *Economics Letters*, **222**.
6. Bartolucci, F., Valentini, F., and Pigini, C. (2023), Recursive Computation of the Conditional Probability Function of the Quadratic Exponential Model for Binary Panel Data, *Computational Economics*, **61**, 529-557.
7. Bartolucci, F., Pigini, C., and Valentini, F. (2022), Conditional inference and bias reduction for partial effects estimation of fixed-effects logit models, *Empirical Economics*, in press.
8. Brusa, L., Bartolucci, F., and Pennoni, F. (2022), Tempered expectation-maximization algorithm for the estimation of discrete latent variable models, *Computational Statistics*, in press.
9. Tullio, F. and Bartolucci, F. (2022), Causal inference for time-varying treatments in latent Markov models: An application to the effects of remittances on poverty dynamics, *Annals of Applied Statistics*, **16**, pp. 1962-1985.
10. Federici, S., Lepri, A., Bacci, S., Bartolucci, F. (2022), Male recognition bias in sex assignment based on visual stimuli, *Scientific Reports*, **12**: 8156.
11. Bartolucci, F., Pandolfi, S., and Pennoni, F. (2022), Discrete latent variable models, *Annual Review of Statistics and its Application*, **9**, pp. 425-452.
12. Bartolucci, F. and Farcomeni, A. (2022), A hidden Markov space-time model for mapping the dynamics of global access to food, *Journal of the Royal Statistical Society, Series A*, **185**, pp. 246-266.
13. Agresti, A., Bartolucci, F., and Mira, A. (2021), Reflections on Murray Aitkin's contributions to nonparametric mixture models and Bayes factors, *Statistical Modelling*, **22**, 33-45.
14. Pennoni, F., Bartolucci, F., Forte, G., and Ametrano, F. (2022), Exploring the dependencies among main cryptocurrency log-returns: A hidden Markov model, *Economic notes*, **51**, e12193.
15. Bartolucci, F. and Farcomeni, A. (2022), A spatio-temporal model based on discrete latent variables for the analysis of COVID-19 incidence, *Spatial Statistics*, 100504.
16. Genge, E. and Bartolucci, F. (2022), Are attitudes toward immigration changing in Europe? An analysis based on latent class IRT models, *Advances in Data Analysis and Classification*, **16**, 235-271.
17. Pigini, C. and Bartolucci, F. (2022), Conditional inference for binary panel data models with predetermined covariates, *Econometrics and Statistics*, **23**, pp. 83-104.
18. Bartolucci, F., Pennoni, F., and Mira, A. (2021), A multivariate statistical approach to predict COVID-19 count data with epidemiological interpretation and uncertainty quantification, *Statistics in Medicine*, **40**, pp. 5351-5372.
19. Ghiringhelli, C., Bartolucci, F., Mira, A., and Arbia, G. (2021), Modelling Nonstationary Spatial Lag Models with Hidden Markov Random Fields, *Spatial Statistics*, **44**, 100522.
20. Aristei, D., Bacci, S., Bartolucci, F., and Pandolfi, S. (2020), A bivariate finite mixture growth model with selection, *Advances in Classification and Data Analysis*, in press.
21. Bartolucci, F. and Pandolfi, S. (2020), An exact algorithm for time-dependent variational inference for the dynamic stochastic block model, *Pattern Recognition Letters*, **138**, pp. 362-369.
22. Favero, D., Sciulli, D., and Bartolucci, F. (2020), Primary-school class composition and the development of social capital, *Socio-Economic Planning Sciences*, **72**, 100874.

23. Bianchi, F., Bartolucci, F., Peluso, S., and Mira, A. (2020), Longitudinal Networks of Dyadic Relations Using Latent Trajectories: Evidence from the European Interbank Market, *Journal of the Royal Statistical Society - Series C*, **69**, pp. 711-739.
24. Bacci, S., Bartolucci, F., Bettin, S., and Pigini, C. (2019), A latent class growth model for migrants' remittances: An application to the German Socio-Economic Panel, *Journal of the Royal Statistical Society – Series A*, **182**, pp. 1607-1632.
25. Bartolucci, F., Farcomeni, A. (2019), A shared-parameter continuous-time hidden Markov and survival model for longitudinal data with informative drop-out, *Statistics in Medicine*, **38**, pp.1056-1073.
26. Rajeziesfahani, S., Federici, S., Bacci, S., Meloni, F., Bartolucci, F., Zahiroddin, A., Shams, J., and Noorbakhshe, S. (2019), Validity of the 36-item Persian (Farsi) version of the world health organization disability assessment schedule (WHODAS) 2.0, *International Journal of Mental Health*, **48**, pp. 14-39.
27. Montanari, G. E., Doretto, M., Bartolucci, F. (2018), A multilevel latent Markov model for the evaluation of nursing homes' performance, *Biometrical Journal*, **60**, 962-978.
28. Cagini, L., Andolfi, M., Becattini, C., Ranalli, M. G., Bartolucci, F., Mancuso, A., Vannucci, J., Agnelli, G., and Puma, F. (2018), Bedside sonography assessment of extravascular lung water increase after major pulmonary resection in non-small cell lung cancer patients, *Journal of Thoracic Disease*, **10**(7).
29. Bertarelli, G., Ranalli, M. G., Bartolucci, F., D'Alò, M., and Solari, F. (2018), Small area estimation of unemployment using Latent Markov Models, *Survey Methodology*, **44**, 167-192.
30. Bartolucci, F., Bacci, S., & Mira, A. (2018), On the role of latent variable models in the era of big data, *Statistics and Probability Letters*, **136**, pp. 165-169.
31. Bartolucci, F., Choudhry, M. T., Marelli, E., and Signorelli, M. (2018), GDP Dynamics and Unemployment Changes in Developed and Developing Countries, *Applied Economics*, **50**, pp. 3338-3356.
32. Bartolucci, F., Marino, F. & Pandolfi, S. (2018), Dealing with Reciprocity in Dynamic Stochastic Block Models, *Computational Statistics and Data Analysis*, **123**, pp.86-100.
33. Bartolucci, F., Montanari, G.E., and Pandolfi, S. (2018), Latent ignorability and item selection for nursing home case-mix evaluation, *Journal of Classification*, **35**, 172-193.
34. Bacci, S., Bartolucci, F., and Pandolfi, S. (2018), A joint model for longitudinal and survival data based on an AR(1) latent process, *Statistical Methods in Medical Research*, **27**, 1285-1311.
35. Bartolucci, F., Nigro, V., and Pigini, C. (2018), Testing for State Dependence in Binary Panel Data with Individual Covariates by a Modified Quadratic Exponential Model, *Econometric Reviews*, **37**, pp. 61-81.
36. Bartolucci, F., Burno, G. S. F., Demidova, O., and Signorelli, M. (2017), Job satisfaction and compensating wage differentials: Evidence from Russia, *CESifo Economic Studies*, **63**, pp. 333-351.
37. Bacci, S., Bartolucci, F., Grilli, L., and Rampichini, C. (2017), Evaluation of student performance through a multidimensional finite mixture IRT model, *Multivariate Behavioral Research*, **52**, pp. 732-746.
38. Bartolucci, F., Farcomeni, A., and Scaccia, L. (2017), A nonparametric multidimensional latent class IRT model in a Bayesian framework, *Psychometrika*, **82**, pp. 952–978.
39. Bartolucci, F., Pandolfi, S., and Pennoni, F. (2017), LMest: An R Package for Latent Markov Models for Longitudinal Categorical Data, *Journal of Statistical Software*, **81**(4).
40. Bartolucci, F. and Pigini, C. (2017), cquad: An R and Stata Package for Conditional Maximum Likelihood Estimation of Dynamic Binary Panel Data Models, *Journal of Statistical Software*, **78**, pp. 1-26.
41. Bartolucci, F., Chiaromonte, F., Kuruppumullage Don, P., and Lindsay, B. G. (2017), Composite likelihood inference in a discrete latent variable model for two-way "clustering-by-segmentation" problems, *Journal of Computational and Graphical Statistics*, **26**, pp. 388-402.
42. Cagnone, S. and Bartolucci, F. (2017), Adaptive quadrature for maximum likelihood estimation of a class of dynamic latent variable models, *Computational Economics*, **49**, pp. 599-622.
43. Bartolucci, F., Bacci, S., and Pigini, C. (2017), Misspecification test for random effects in generalized linear finite-mixture models for clustered binary and ordered data, *Econometrics and Statistics*, **3**, pp. 112-131.
44. Bartolucci, F. and Lupparelli, M. (2016), Pairwise likelihood inference for nested hidden Markov chain models for multilevel longitudinal data, *Journal of the American Statistical Association*, **111**, pp. 216-228.
45. Bacci, S. and Bartolucci, F. (2016), Two-Tier Latent Class IRT Models in R, *The R Journal*, **8**, pp. 139-166.
46. Bartolucci, F., Bellio, R., Sartori, N. and Salvan, A. (2016), Modified profile likelihood for fixed-effects panel data models, *Econometric Reviews*, **35**, 1271-1289.
47. Bartolucci, F., Montanari, G.E., and Pandolfi, S. (2016), Item selection by latent class-based methods: An application to nursing home evaluation, *Advances in Data Analysis and Classification*, **10**, pp.245-262.
48. Bartolucci, F., Pennoni, F., and Vittadini, G. (2016), Causal latent Markov model for the comparison of multiple treatments in observational longitudinal studies, *Journal of Educational and Behavioral Statistics*, **41**, pp. 146-179.
49. Gnaldi, M., Bacci, S., and Bartolucci, F. (2016), A multilevel finite mixture item response model to cluster examinees and schools, *Advances in Data Analysis and Classification*, **10**, pp. 53-70.

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