

Mario Fordellone

Contact

[Google Scholar](#) – [Cineca IRIS](#) – [ORCID](#) – [Github](#)

Actual working positions

Postdoctoral Research fellow in **Statistics**
Scientific disciplinary sector **SECS-S/01**
Department of Social and Economics Science, Sapienza University of Rome

Research interests

Multidimensional Analysis, joint methods for dimensionality reduction and clustering, cluster modeling, supervised and unsupervised classification, partial least squares regression, non-linear regression, fuzzy clustering, high-dimensional data analysis, structural equation modeling, path modeling, imprecise data analysis, fuzzy data classification, interval-valued data analysis.

Previous working positions

February 2020 - March 2021
Research fellow in Statistics
Scientific disciplinary sector **SECS-S/01**
Department of Social and Economics Science, Sapienza University of Rome
Topic: *Fuzzy clustering models for imprecise data*
Advisor: **Prof. Pierpaolo D'Urso**

September 2018 - August 2019
Research fellow in Statistics
Scientific disciplinary sector **SECS-S/01**
Department of Statistical Sciences, Sapienza University of Rome
Topic: *Sviluppo di uno strumento di analisi finalizzato al monitoraggio degli indicatori ANVUR per l'accreditamento degli Atenei*
Advisor: **Prof. Maurizio Vichi**

October 2015 - August 2018
Ph. D student with Scholarship in Methodological Statistics
Scientific disciplinary sector **SECS-S/01**
Department of Statistical Sciences, Sapienza University of Rome
Topic thesis: *Dimensionality reduction and simultaneous classification approaches for complex data: methods and applications*
Advisor: **Prof. Maurizio Vichi**

October 2014 - September 2015

Research Fellow, Scientific disciplinary sector **SECS-S/01**

Department of Statistical Sciences, University of Padua

Topic: *Metodi di costruzione di indicatori compositi e loro utilizzo per la valutazione dell'efficacia di Atenei e Comuni*

Advisor: **Prof. Giovanna Boccuzzo**

March 2014 - September 2014

Research activity, Scientific disciplinary sector **SECS-S/01**

Department of Political Sciences, Federico II University of Naples

Topic: *Prototypes definition through consensus analysis between Fuzzy c-Means and Archetypal Analysis*

Advisor: **Prof. Francesco Palumbo**

Academic teaching experience

Academic years: **2020/2021**

Course: *Statistical laboratory* (Italian)

Scientific disciplinary sector **AAF**

Bachelor's Degree in Mechanical Engineering, Sapienza University of Rome

Academic years: **2019/2020**

Course: *Introduction to biomedical statistics* (English)

Scientific disciplinary sector **MED/01**

Bachelor's Degree in Bioinformatics, Sapienza University of Rome

Academic teaching assistance experience

Academic years: **2020/2021 to present**

Course: *Data analysis laboratory for Economic, Political and Social Sciences* (English)

(**prof. Paolo Perciballi**)

Scientific disciplinary sector **INF/01**

Bachelor's Degree in Political Sciences, LUISS Independent University of Rome

Academic years: **2019/2020 to present**

Course: *Statistics* (Italian)

(**prof. Pierpaolo D'Urso**)

Scientific disciplinary sector **SECS-S/01**

Bachelor's Degree in Political Sciences, Sapienza University of Rome

Academic years: from **2018/2019 to present**

Course: *Statistics* (Italian)

(**prof. Pierpaolo D'Urso**)

Scientific disciplinary sector **SECS-S/01**

Bachelor's Degree in Political Sciences, LUISS Independent University of Rome

Academic years: from **2017/2018 to present**

Course: *Data analysis laboratory for Economic, Political and Social Sciences* (Italian)

(**prof. Marco Pini**)

Scientific disciplinary sector **INF/01**

Bachelor's Degree in Political Sciences, LUISS Independent University of Rome

Academic years: **2019/2020**

Course: *Statistics and econometrics* (Italian)

Scientific disciplinary sector **SECS-S/01**

Statistics and econometrics, LUISS Independent University of Rome

Academic years: **2018/2019**

Course: *Statistics and time series analysis* (Italian)

(**prof. Germana Scepi**)

Scientific disciplinary sector **SECS-S/01**

Bachelor's Degree in Economics of financial business, Federico II University of Naples

Academic years: from **2016/2017** to **2018/2019**

Course: *Advances in data analysis and statistical modelling* (English)

(**prof. Maurizio Vichi**)

Scientific disciplinary sector **SECS-S/01**

Master's Degree in Statistical Sciences, Sapienza University of Rome

Academic years: **2016/2017**

Course: *Statistics* (Italian)

(**prof. Giuseppina Guagnano, Silvia Poletti, Francesco Maria Sanna**)

Scientific disciplinary sector **SECS-S/01**

Bachelor's Degree in Business Economics, Sapienza University of Rome

Other Teaching experiences

12 June 2017 – 16 June 2017

Lecturer in *Partial Least Squares regression*

Scientific disciplinary sector **SECS-S/01**

Società Italiana Agronomia (SIA)

Ph. D course in: *Generalized Linear Model and Partial Least Squares*

13 November 2017

Contract professor in *Multivariate data analysis and regression modeling*

Scientific disciplinary sector **SECS-S/01**

Bachelor's Degree in Political Sciences (course A)

(prof. Livia De Giovanni)

LUISS Independent University of Rome

15 November 2017

Contract professor in *Multivariate data analysis and regression modeling*

Scientific disciplinary sector **SECS-S/01**

Bachelor's Degree in Political Sciences (course B)

(prof. Pierpaolo D'Urso)

LUISS Independent University of Rome

Education

November 2015 – October 2018

Ph. D scholarship in Methodological Statistic (Scientific disciplinary sector SECS-S/01)

Department of Statistical Sciences, Sapienza University of Rome

Thesis: *Dimensionality reduction and simultaneous classification approaches for complex data: methods and applications*

October 2011 - March 2014

Master's degree in Statistical Sciences (110/110 cum laude)

Federico II, University of Naples

Thesis: *Definizione dei prototipi attraverso l'analisi del consenso: un approccio congiunto tra l'analisi archetipale ed il metodo delle k-medie sfocato*

October 2008 - October 2011

Bachelor's degree in Statistics (100/110)

Federico II, University of Naples

Thesis: *Il value at Risk nel periodo della grande crisi*

Other educational courses

22th May 2017 – 26th May 2017

1st International Summer School on Classification and Data Analysis

Department of Statistical Sciences, **University of Bologna**

Location: Rimini Campus

Publications

Books / monographs

1. Mario Fordellone (2019)

Statistical Analysis of Complex Data: Dimensionality reduction and classification methods

Publisher: *LAP LAMBERT Academic Publishing*

ISBN: 978-620-0-44372-4

Papers in scientific journal (Class A and B**)*

1. Pierpaolo D'Urso, De Giovanni Livia, Mario Fordellone (2020) *
Entropy-based fuzzy clustering model for interval-valued data
Expert System with applications (ESWA)
[Under review – 2° round]
2. Milena Luise, Ilaria De Benedictis, Mario Fordellone (2020) **
A PLS-SEM application for the investigation of factors and dynamics affecting perceived brand image and the consumer purchase intention
SN Business & Economics (SNBE)
[Under review – 2° round]
3. Venera Tomaselli, Mario Fordellone, Maurizio Vichi (2020) *
Building Well-Being Composite Indicator for Micro-Territorial Areas Through PLS-SEM and K-Means Approach
Social Indicator Research (SIR)
ISSN: 0303-8300 (print version) – ISSN: 1573-0921 (electronic version) –
DOI: <https://doi.org/10.1007/s11205-020-02454-0>

4. Mario Fordellone, Maurizio Vichi (2020) *
Finding groups in Structural Equation Modeling through the Partial Least Squares algorithm
Computational Statistics & Data Analysis (CSDA)
 ISSN: 0167-9473 – DOI: <https://doi.org/10.1016/j.csda.2020.106957>
5. Mario Fordellone, Andrea Bellincontro, Fabio Mencarelli (2019) **
Partial Least Squares Discriminant Analysis: a dimensionality reduction method to classify real hyperspectral data
Italian Journal of Applied Statistics – Vol. 31 (2) pp. 181-200
 ISSN: 1125-1964 (print version) – ISSN: 2038-5587 (electronic version)
 DOI: <https://doi.org/10.26398/IJAS.0031-010>
6. Mario Fordellone, Venera Tomaselli, Maurizio Vichi (2018) **
From tandem to simultaneous dimensionality reduction and clustering of tourism data
Italian Review of Economics, Demography and Statistics – Vol. 72 (1) pp. 5-16
 ISSN: 0035-6832
7. Mario Fordellone, Francesco Palumbo (2016) **
Prototypes definition through Consensus Analysis between Fuzzy c-Means and Archetypal Analysis
Italian Journal of Applied Statistics – Vol. 26 (2) pp. 141-162
 ISSN: 1125-1964 (print version) – ISSN: 2038-5587 (electronic version)

Chapters in books

1. Venera Tomaselli, Mario Fordellone, Maurizio Vichi (2020)
Modeling Well-Being through PLS-SEM and K-Means
Book of Short Papers SIS 2020 Published by Pearson pp. 1513-1518
 ISBN: 9788891910776
2. Venera Tomaselli, Mario Fordellone, Maurizio Vichi (2020)
Construction of an Immigrant Integration Composite Indicator Through the Partial Least Squares Structural Equation Model K-Means
Data Science and Social Research II
 ISBN: 978-3-030-51221-7 / DOI: 10.1007/978-3-030-51222-4_28
3. Mario Fordellone, Venera Tomaselli, Maurizio Vichi (2019)
A new proposal for building immigrant integration composite indicator
Book of Short Papers CLADAG 2019 pp. 199-202
 ISBN 978-88-8317-108-6
4. Mario Fordellone, Maurizio Vichi (2018)
Simultaneous unsupervised and supervised classification modeling for clustering, model selection and dimensionality reduction
Book of Short Papers SIS 2018 Published by Pearson pp. 1435-1441
 ISBN: 978-88-91910-23-3

5. Mario Fordellone, Maurizio Vichi (2017)
Simultaneous supervised and unsupervised classification modeling for assessing cluster analysis and improving results interpretability
Statistical Learning of Complex Data (Selected papers) pp. 23-31
 ISBN: 978-3-030-21140-0
6. Mario Fordellone, Maurizio Vichi (2017)
Clustering and Structural Equation Modeling
Universitas Studiorum. Zenga Editors
 ISBN: 978-88-99459-71-0
7. Mario Fordellone, Maurizio Vichi (2017)
Multiple Correspondence K-Means: Simultaneous Versus Sequential Approach for Dimension Reduction and Clustering
Data Science and Social Research pp. 81-95
 ISBN: 978-3-319-55476-1 / DOI: 10.1007/978-3-319-55477-8_8
8. Mario Fordellone, Francesco Palumbo (2017)
Finding Prototypes Through a Two-Step Fuzzy Approach
Data Science pp. 111-121
 ISSN: 1431-8814 (print version) / ISSN: 2198-3321 (electronic version)
 ISBN: 978-3-319-55722-9 / DOI: 10.1007/978-3-319-55723-6

Working papers and technical reports

1. Mario Fordellone (2019)
Dimensionality reduction and simultaneous classification approaches for complex data: methods and applications
Dipartimento di Scienze Statistiche, Università di Roma LA SAPIENZA
https://iris.uniroma1.it/retrieve/handle/11573/1315683/1254754/Tesi_dottorato_Fordellone.pdf
2. Mario Fordellone, Andrea Bellincontro, Fabio Mencarelli (2018)
Partial Least Squares Discriminant Analysis: a dimensionality reduction method to classify real hyperspectral data
 ISSN: 2279-798X *Dipartimento di Scienze Statistiche, Università di Roma LA SAPIENZA*
<http://www.dss.uniroma1.it/it/node/7282>
3. Mario Fordellone, Maurizio Vichi (2018)
Simultaneous supervised and unsupervised classification modeling for assessing cluster analysis and improving results interpretability
 ISSN: 2279-798X *Dipartimento di Scienze Statistiche, Università di Roma LA SAPIENZA*
<http://www.dss.uniroma1.it/it/node/7320>
4. Mario Fordellone, Maurizio Vichi (2018)
Structural Equation Modeling and simultaneous clustering through the Partial Least Squares algorithm
 ISSN: 2279-798X *Dipartimento di Scienze Statistiche, Università di Roma LA SAPIENZA*
<http://www.dss.uniroma1.it/it/node/7277>

5. Mario Fordellone, Giovanna Boccuzzo (2015)
Comments about the use of PLS path modeling in building a Job Quality Composite Indicator
Working Paper Series, N. 2, June 2015 (University of Padua:
<http://paduaresearch.cab.unipd.it/8841/>)

International Conference

1. Venera Tomaselli, Mario Fordellone, Maurizio Vichi
Modeling Well-Being through PLS-SEM and K-Means
49th Scientific meeting of the Italian Statistical Society (SIS)
22-24 June 2020, University of Pisa Sant'Anna (Italy)
2. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
A composite indicator to measure immigrant integration by a PLS-SEM-KM method
12th Classification and Data Analysis Group (CLADAG)
11-13 September 2019, University of Cassino (Italy)
3. Venera Tomaselli, Mario Fordellone, Maurizio Vichi
Building well-being profiles in territorial areas through a k-means approach in the partial least squares path modelling
56th Scientific Conference
22-24 May 2019, University of Ascoli Piceno (Italy)
4. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
A composite indicator to measure immigrant integration by a PLS-SEM-KM method
13th Edition of Population Days
24-26 January 2019, University of Milano "Bocconi" (Italy)
5. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
Simultaneous clustering and dimensionality reduction in a PLS-SEM approach: a composite indicator to measure immigrant integration
Workshop on High Dimensional Small Data
19-20 October 2018, University of Venice (Italy)
6. Mario Fordellone, Maurizio Vichi
Improving clustering assessment through supervised classification modeling
Workshop on Model-Based Clustering and Classification (MBC²)
5-7 September 2018, University of Catania (Italy)
7. Mario Fordellone, Maurizio Vichi
Simultaneous unsupervised and supervised classification modeling for clustering, model selection and dimensionality reduction
49th Scientific meeting of the Italian Statistical Society (SIS)
20-22 June 2018, University of Palermo (Italy)
8. Mario Fordellone, Maurizio Vichi
Clustering and Structural Equation Modeling
11th Classification and Data Analysis Group (CLADAG)
13-15 September 2017, University of Milano-Bicocca (Italy)

9. Mario Fordellone, Maurizio Vichi, Raffaele Casa, Andrea Bellincontro, Fabio Mencarelli
Classifying olive fruits using Partial Least Squares Discriminant Analysis on high dimensional hyperspectral data
 Stat Food2017 Conference
 7-9 September 2017, University of Naples (Italy)
10. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
La riduzione dimensionale dei dati Sul metodo di segmentazione simultanea: analisi della domanda turistica
 54ma Riunione Scientifica della Società Italiana di Economia, Demografia e Statistica (SIEDS)
 25-26 May 2017, Università degli Studi di Catania (Italy)
11. Mario Fordellone, Maurizio Vichi
Multiple Correspondence K-Means: a new approach for dimension reduction and clustering
 Data Science and Social Research
 17-19 February 2016, Federico II University of Naples (Italy)
12. Mario Fordellone, Giovanna Boccuzzo
Building composite indicators through PLS path modeling: comparison between formative and reflective approach for the construction of a job quality indicator
 Dealing with complexity in society: from plurality of data to synthetic indicators
 17-18 September 2015, University of Padua (Italy)
13. Mario Fordellone, Francesco Palumbo
Set-valued prototypes through Consensus Analysis
 International Federation of Classification Societies
 6-8 July 2015, University of Bologna (Italy)

Grants

2020

Funded research project in: *Analysis of rankings and preference data: new methods and applications*

Department of Social and Economic Sciences, **Sapienza University of Rome**

Project manager: **Roy Cerqueti**

Qualification: **research team component**

2017

Funded research project in: *Risk Management in commodity, energy and financial markets: new challenges*

Department of Statistical Sciences, **Sapienza University of Rome**

Project manager: **Rita Laurea D'Ecclesia**

Qualification: **research team component**

2017 (PRIN)

Funded research project in: *Challenges in Latent Variable Models and Multivariate Methods for Complex, High-dimensional Data: Specification, Inference and Statistical Scalability Issues*

Department of Statistical Sciences, **Sapienza University of Rome**

Project manager: **Marco Alfò**

Qualification: **research team component**

2016

Funded research project in: *Model-Based Composite Indicators and Dimensionality Reduction for Big Data Analysis*

Department of Statistical Sciences, **Sapienza University of Rome**

Project manager: **Maurizio Vichi**

Qualification: **research team component**

Awards

Rassegna Economica 2017 – IV classificato

Project theme: *Le caratteristiche competitive e le dinamiche evolutive della Maritime Economy in Italia e nel Mezzogiorno.*

Contribution title: *La Circular Economy come una green strategy per il profondo blu del Mezzogiorno.*

Played role: **Statistical analysis**

Reviewer of scientific research journals (Classes A* and B**)
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1. Japanese Journal of Statistics and Data Science (JJSD)**
(<https://www.springer.com/journal/42081>)
2. Italian Journal of Planning Practice (IJPP)**
(<http://www.ijpp.it/index.php/it>)
3. Information Sciences Journal (INS)*
(<https://www.journals.elsevier.com/information-sciences>)
4. Advances in Data Analysis and Classification (ADAC)*
(<https://link.springer.com/journal/11634>)
5. Social Indicator Research (SIR)*
(<https://www.springer.com/journal/11205>)
6. Soft Computing Letters (SCL)*
(<https://www.journals.elsevier.com/soft-computing-letters>)
7. Metron (TRON)**
(<https://www.springer.com/journal/40300>)
8. Expert System With Application (ESWA)*
(<https://www.journals.elsevier.com/expert-systems-with-applications>)
9. SN Business & Economics (SNBE)*
(<https://www.springer.com/journal/43546>)
10. International Journal of Human Anatomy (IJHA)*
(<https://openaccesspub.org/journal/ijha>)
11. Transportation Research Part A (YTRA)*
(<https://www.journals.elsevier.com/transportation-research-part-a-policy-and-practice>)

Language skills

Italian: mother tongue

English: B2 level

Computer skills

- Operating system: Windows, Macintosh OS X
- Software: Microsoft Office, Adobe
- Programming: R, MatLab, Octave, SAS, Python, WinBugs, Latex

In compliance with the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document