

# FLAVIO SANTI, PhD

## CONTACT INFORMATION

---

CURRENT POSITION: Assistant professor in Economic Statistics  
(*Ricercatore a tempo determinato ex art. 24 c. 3 lett. b, l. 240/2010*)  
Department of Economics  
University of Verona

ADDRESS: Dipartimento di Scienze Economiche  
Università degli Studi di Verona  
Via Cantarane 24  
37129 Verona (VR)

ROOM: Polo Santa Marta, Floor 1, Room 1.56

PHONE: (+39) 045 802 8239

E-MAIL: [flavio.santi@univr.it](mailto:flavio.santi@univr.it)

WEB PAGE: [www.flaviosanti.it](http://www.flaviosanti.it)

## PERSONAL INFORMATION

---

CITIZENSHIP: Italian

PEC ADDRESS: [flaviosanti@pec.it](mailto:flaviosanti@pec.it)

PGP KEY: 8242 C50E 9BEB AABA F833 5944 6218 CAF2 0A65 86C4

## ACADEMIC RECORD

---

since 12/2018	ASSISTANT PROFESSOR IN ECONOMIC STATISTICS (SECS-S/03) ( <i>Ricercatore a tempo determinato ex art. 24 c. 3 lett. b, l. 240/2010</i> ) Department of Economics, University of Verona
07/2016–12/2018	RESEARCH FELLOW IN ECONOMIC STATISTICS (SECS-S/03) Department of Economics and Management, University of Trento Istituto di Statistica della Provincia Autonoma di Trento (ISPAT)
Research project	“Uso e linkage di dati amministrativi per la ricerca statistica” ( <i>Use of administrative data for statistical purposes</i> )
02/2016–08/2016	ASSOCIATE RESEARCHER Department of Economics and Management, University of Trento
Research project	“Modelli di crescita nelle regioni europee (NUTS3) e in particolare sull’area alpina” ( <i>Growth models for NUTS3 European regions and in particular for the Alpine area</i> )
01/2016–06/2016	ASSOCIATE RESEARCHER Department of Economics and Management, University of Trento
Research project	“School to Career: Life and Working Career of Trento University Graduates”

## EDUCATION

---

12/07/2016	PHD IN INTERNATIONAL ECONOMICS AND FINANCE (XXVIII CYCLE) Department of Social and Economic Sciences Sapienza University of Rome (Italy)
Thesis	Three Essays on Model Choice and Estimation in Spatial Econometrics: Large-Sample Estimation, Isotropy Testing, and Multilevel Modelling
Supervisors	prof. Giuseppe Arbia, prof. Giuseppe Espa, prof. Marco Bee
28/03/2012	MASTER'S DEGREE IN BANKING, BUSINESS AND FINANCIAL MARKETS Department of Economics and Management University of Trento
Thesis	Metodi di stima dei parametri della distribuzione di Pareto generalizzata: aspetti teorici, numerici e analisi empirica <i>(Estimation Methods for the Parameters of the Generalized Pareto Distribution: Theoretical and Numerical Issues and Empirical Analysis)</i>
Supervisor	prof. Marco Bee
17/03/2009	BACHELOR'S DEGREE IN ECONOMICS Department of Economics and Management University of Trento
Thesis	Il Patto di Stabilità e i Patti di Stabilità Interni <i>(The Stability Pact and Internal Stability Pacts)</i>
Supervisor	prof. Gianfranco Cerea
2005	SECONDARY-SCHOOL DIPLOMA IN COMPUTER SCIENCE Istituto Tecnico Industriale "G. Marconi", Rovereto (TN, Italy)

## STUDIES ABROAD

---

- **Faculty Research Assistant** of the Department of Economics at the University of Maryland in College Park (MD, USA) from 1 November 2014 to 31 May 2015.

## OTHER SKILLS

---

### Computer science

*Operating Systems:* Linux, MacOS, Windows. *Symbolic computation:* Derive, Maxima. *Data processing and statistical analysis:* R, RMarkdown, Microsoft Excel, EViews, BUGS, SPSS. *Word processing and presentation program:*  $\text{\LaTeX}$ , Microsoft Word, Microsoft PowerPoint. *Database:* SQL, Microsoft Access. *Computer-aided design:* AutoCAD. *Web design:* html, liquid, jekyll. *Remote access, cryptography, and software development tools:* OpenSSH, OpenPGP, git, GitHub.

### Languages

**Italian:** mother tongue. **English:** good.

## TEACHING EXPERIENCE

---

### Semestral courses

As appointed teacher

- “*Statistica aziendale*” (*Business statistics*, 36 hours) of the master's programme *Economia e Legislazione d'Impresa (Corporate Law and Economics)* of the Department of Business Administration of the University of Verona, Italy. – Academic year 2019-2020.

- “**Corso di R**” (*Course of R*, 30 hours), Department of Economics, University of Verona, Italy. – Academic year 2018-2019.
- “**Analisi esplorative dei dati (avanzato)**” (*Explorative data analysis – Advanced*, 12 hours) of the 2nd level master degree programme in *Social forecasting*, Department of Sociology and Social Research, University of Trento, Italy. – Academic years 2017-2018, 2018-2019.
- “**Serie temporali (avanzato)**” (*Time series – Advanced*, 8 hours) of the 2nd level master degree programme in *Social forecasting*, Department of Sociology and Social Research, University of Trento, Italy. – Academic years 2017-2018, 2018-2019.
- “**Crash Course in Statistics**” (30 hours) of the master’s programme in *Business Administration and Management*, School of Economics, Management, and Statistics, University of Bologna, Italy. – Academic year 2017-2018.

### As teaching assistant

- “**Statistica**” (*Statistics*, 24 hours) of the bachelor programme *Economia e Commercio (Economics and Business)* of the Department of Business Administration of the University of Verona, Italy. – Academic year 2019-2020.
- “**Analisi dei dati e statistica**” (*Data Analysis and Statistics*, 24 hours) of the bachelor programme *Economia e Management (Economics and Management)*, Department of Economics and Management, University of Trento, Italy. – Academic years 2018-2019, 2019-2020.
- “**Strumenti Quantitativi per la Gestione**” (*Quantitative Methods for Management*, 18 hours) of the master’s programme *Management*, Department of Economics and Management, University of Trento, Italy. – Academic year 2018-2019.
- “**Analisi dei dati e statistica**” (*Data Analysis and Statistics*, 24 hours) of the bachelor programme *Amministrazione Aziendale e Diritto (Business administration and law)*, Department of Economics and Management, University of Trento, Italy. – Academic year 2017-2018.
- “**Quantitative Methods for Market Analysis**” (18 hours) of the master’s programme *International Management*, Department of Economics and Management, University of Trento, Italy. – Academic years 2016-2017, 2017-2018, 2018-2019.
- “**Laboratorio di analisi dei mercati**” (*Laboratory of Market Analysis*, 48 hours) of the bachelor programme *Amministrazione Aziendale e Diritto (Business administration and law)*, Department of Economics and Management, University of Trento, Italy. – Academic year 2015-2016.

### Intensive courses

- 20 February 2018 – **R lab** teacher of the intensive course *Teoria del campionamento per le indagini economiche, sociali e ambientali (Sampling theory for economic, social and environmental surveys)* organised by the research group StaTA under the scientific coordination of prof. Giuseppe Espa, Department of Sociology and Social Research of the University of Trento. Trento (Italy), 20-22 February 2018. – <http://statagroup.economia.unitn.it/events/scuola2018.html>
- 6 September 2017 – Teacher in **advanced programming with R** at the summer school *Reaction 2017* organised by the Department of Mathematics of the University of Trento, the Department of Economics and Management of the University of Trento, the Faculty of Economics of the Free University of Bozen, and the University of Innsbruck. Trento (Italy), 5-8 September 2017. – <http://datascience.maths.unitn.it/events/reaction2017>

- 15–26 May 2017 (1 e 11 week) – Instructor of **spatial statistics and econometrics with R** for the summer school of the *Spatial Econometrics Advanced Institute (SEAI)* of the *Spatial Econometrics Association*. Catholic University of the Sacred Heart, Rome, 15 May – 9 June 2017.
- 16–20 May 2016 (1 week) – Instructor of **spatial statistics and econometrics with R** for the summer school of the *Spatial Econometrics Advanced Institute (SEAI)* of the *Spatial Econometrics Association*. Catholic University of the Sacred Heart, Rome, 16 May – 10 June 2016.

## PUBLICATIONS

---

### Articles on journals in the Journal Citation Report

- [8] Dickson M. M., G. Espa, D. Giuliani, F. Santi, L. Savadori (2020) “Assessing the effect of containment measures on the spatio-temporal dynamic of COVID-19 in Italy”, **Nonlinear Dynamics**. DOI: 10.1007/s11071-020-05853-7.
- [7] Santi F., M. M. Dickson, G. Espa, E. Taufer, A. Mazzitelli (2020) “Handling spatial dependence under unknown unit locations”, **Spatial Economic Analysis**. DOI: 10.1080/17421772.2020.1769171.
- [6] Santi F., M. M. Dickson, G. Espa (2019) “A graphical tool for interpreting regression coefficients of trinomial logit models”, **The American Statistician**, 73 (2), pp. 200-207. DOI: 10.1080/00031305.2018.1442368.
- [5] Dickson M. M., D. Giuliani, G. Espa, M. Bee, E. Taufer, F. Santi (2018) “Design-based estimation in environmental surveys with positional errors”, **Environmental and Ecological Statistics**, 25 (1), pp. 155-169. DOI: 10.1007/s10651-017-0381-3.
- [4] Bee M., M. M. Dickson, F. Santi (2018) “Likelihood-based risk estimation for variance-gamma models”, **Statistical Methods & Applications**, 27 (1), pp. 69-89. DOI: 10.1007/s10260-017-0393-z.
- [3] Arbia G., M. Bee, G. Espa, F. Santi (2018) “Fitting spatial regressions to large datasets using unilateral approximations”, **Communications in Statistics – Theory and Methods**, 47 (1), pp. 222-238. DOI: 10.1080/03610926.2017.1301476.
- [2] Santi F., G. Arbia, M. Bee, G. Espa (2017) “A frequency domain test for isotropy in spatial data models”, **Spatial Statistics**, 21, pp. 262-278. DOI: 10.1016/j.spasta.2017.05.002.
- [1] Bee M., G. Espa, D. Giuliani, F. Santi (2017) “A cross-entropy approach to the estimation of generalised linear multilevel models”, **Journal of Computational and Graphical Statistics**, 26 (3), pp. 695-708. DOI: 10.1080/10618600.2016.1278003.

### Articles on other refereed journals

- [4] Bison I., M. M. Dickson, G. Espa, F. Santi (2019) “Educational Qualifications Yields as Employment Risk: an Empirical Analysis of the Horizontal Inequality”, **Statistica Applicata – Italian Journal Of Applied Statistics**, 31.1, pp. 67-96.
- [3] Espa G., D. Giuliani, F. Santi, E. Taufer (2017) “Model-based variance estimation in two-dimensional systematic sampling” **Metron**, 75.3, pp. 265-275. DOI: 10.1007/s40300-017-0125-z.
- [2] Bee M., M. M. Dickson, D. Giuliani, D. Piacentino, F. Santi, E. Taufer (2016) “La sopravvivenza immediata delle start-up italiane del settore manifatturiero sanitario: un’analisi multilevel”, **Rivista di Economia e Statistica del Territorio**, 2016.3. DOI: 10.3280/REST2016-003004.
- [1] Santi F., G. Espa, E. Zaninotto (2016) “La crescita economica nelle regioni europee NUTS3: un’analisi delle economie alpine nel contesto dell’Unione Europea”, **Rivista di Economia e Statistica del Territorio**, 2016.3. DOI: 10.3280/REST2016-003005.

### Books

- [2] Santi F., G. Espa, E. Zaninotto (2018) *La nuova geografia della crescita*, Franco Angeli. ISBN: 978-8891768537.
- [1] Bee M., F. Santi (2013) *Finanza quantitativa con R*, Apogeo. ISBN: 978-8838787041.

## Working papers

- [9] Giuliani D., M. M. Dickson, G. Espa, D. Giuliani, F. Santi (2020) *Modelling and predicting the spatio-temporal spread of Coronavirus disease 2019 (COVID-19) in Italy*. arXiv: 2003.06664 [stat.AP].
- [8] Arbia G., M. M. Dickson, G. Espa, D. Giuliani, F. Santi (2019) *Reduced-bias estimation of spatial econometric models with incompletely geocoded data*. arXiv: 1909.02282 [stat.ME].
- [7] Taufer E., F. Santi, G. Espa, M. M. Dickson (2018) *On a property of the inequality curve  $\lambda(p)$* . arXiv: 1806.05928 [stat.ME].
- [6] Taufer E., F. Santi, G. Espa, M. M. Dickson (2018) *A goodness of fit test for the Pareto distribution*. arXiv: 1806.05951 [stat.ME].
- [5] Bee M., M. M. Dickson, F. Santi (2017) *Likelihood-based Risk Estimation for Variance-Gamma Models*. DEM Working Paper 2017/03, Department of Economics and Management, University of Trento.
- [4] Santi F., E. Zaninotto, G. Espa (2016) *Modelli di crescita nelle regioni europee. Un focus sull'area alpina*. Trentino School of Management.
- [3] Bee M., G. Espa, D. Giuliani, F. Santi (2015) *A Cross-Entropy Approach to the Estimation of Generalised Linear Multilevel Models*. DEM Working Paper 2015/04, Department of Economics and Management, University of Trento.
- [2] Arbia G., M. Bee, G. Espa, F. Santi (2015) *Testing for Asymmetries and Anisotropies in Regional Economic Models*. DEM Discussion Paper 2015/15, Department of Economics and Management, University of Trento.
- [1] Arbia G., M. Bee, G. Espa, F. Santi (2014) *Fitting Spatial Econometric Models through the Unilateral Approximation*. DEM Discussion Paper 2014/8. Department of Economics and Management, University of Trento.

## Software

- [2] Santi F., M. M. Dickson, G. Espa (2020) *plot3logit: Ternary Plots for Trinomial Regression Models*. R package version 2.2.0. <https://CRAN.R-project.org/package=plot3logit>
- [1] Santi F. (2019) *noisyCE2: Cross-Entropy Optimisation of Noisy Functions*. R package version 1.0.0. <https://CRAN.R-project.org/package=noisyCE2>

## CONFERENCES AND SEMINARS

---

### Invited contributions

#### Papers presented as speaker

- [3] Santi F., M. M. Dickson, G. Espa (2020) "A graphical tool for interpreting regression coefficients of trinomial logit models", **Joint Statistical Meeting 2020**, Invited session sponsored by *The American Statistician* (five papers selected among those published in 2019), Philadelphia, 2–6 August.
- [2] Santi F., M. M. Dickson, G. Espa, D. Giuliani (2019) "Spatial models in the space of covariates: methodological and computational issues", **CFE-CMStatistics 2019**, London, 14–16 December.
- [1] Espa G., M. M. Dickson, D. Giuliani, F. Santi (2019) "Representation of covariate effects in trinomial logistic regression through ternary plots", **Categorical Data Analysis & Friends – Celebrating Alan Agresti's Italian citizenship**, Florence, 18 September.

#### Papers presented as coauthor

- [1] Arbia G., M. M. Dickson, G. Espa, D. Giuliani (2018) "A bias-reduction procedure for the estimation of spatial econometric models with incompletely geocoded data", **XII World Conference of the Spatial Econometrics Association (SEA)**, Vienna (Austria), 11-12 June.

### Contributed papers and posters

#### Papers presented as speaker

- [6] Santi F., G. Espa, M. M. Dickson e D. Giuliani (2019) "Cross-Validation of Spatial Econometric Models", **VII International Workshop on Computational Economics and Econometrics (IWCEE19)**, Rome, 3–5 July.

- [5] Santi F., G. Espa, E. Zaninotto (2019) “Economic Models and the Spatial Transmission of Growth among Alpine Regions”, **Euregio Economics Workshop 2019**, Trento (Italy), 4–5 April.
- [4] Bee M., M. M. Dickson, D. Giuliani, F. Santi (2016) “La probabilità di sopravvivenza a tre anni dalla nascita di start-up italiane del settore medicale: un’analisi congiunta delle determinanti individuali di impresa e di contesto territoriale”, **XXXVII Conferenza Scientifica Annuale dell’Associazione Italiana di Scienze Regionali (AISRe)**, Ancona (Italy), 20–22 September.
- [3] Bison I., M. M. Dickson, G. Espa, F. Santi (2016) “Educational Qualifications Yields as Employment Risk: an Empirical Analysis on the Horizontal Inequality”, **2016 International Conference of the Royal Statistical Society**, Manchester (UK), 5–8 September.
- [2] Dickson M. M., D. Giuliani, D. Piacentino, F. Santi (2016) “Three-Year Survival Probability of Italian Start-up Businesses in Healthcare Industry: an Empirical Investigation through Logistic Multi-level Modelling”, **Proceedings of the 48th Scientific Meeting of the Italian Statistical Society**, Salerno (Italy), 8–10 June.
- [1] Arbia G., M. Bee, G. Espa, F. Santi (2015) “Testing for Asymmetries and Anisotropies in Regional Economic Models”, **Proceedings of the 56th Annual Conference of the Italian Economic Association**, Naples (Italy), 22–24 October.

### Papers presented as coauthor

- [6] Taufer E., F. Santi, G. Espa, M. M. Dickson (2020) “Goodness-of-fit tests for Pareto and log-normal distributions based on inequality curves”, **Distributions and Inequality Measures in Economics**, Milan (Italy), 20–21 February.
- [5] Santi F., G. Arbia, M. M. Dickson, G. Espa e D. Giuliani (2019) “The Role of Cross-Validation in Spatial Econometrics”, **66th Annual North American Meetings of the Regional Science Association International (NARSC)**, Pittsburgh (USA), 13–16 November.
- [4] Taufer E., F. Santi, G. Espa, M. M. Dickson (2018) “Tail analysis of a distribution by means of an inequality curve”, **Proceedings of the 49th Scientific Meeting of the Italian Statistical Society**, Palermo (Italy), 20–22 June.
- [3] Taufer E., F. Santi, G. Espa e M. M. Dickson (2018) “Goodness of fit tests for Pareto and Log-normal distributions”, **Proceedings of the 4th Conference of the International Society for Nonparametric Statistics (ISNPS2018)**, Salerno (Italy), 11–15 June.
- [2] Bee M., G. Espa, D. Giuliani, M. M. Dickson, E. Taufer, F. Santi (2017) “An EM-type algorithm for maximum likelihood estimation of spatial models with positional errors”, **11th International Conference on Computational and Financial Econometrics**, University of London, London, 16–18 December.
- [1] Bee M., M. M. Dickson, F. Santi (2016) “Estimating the variance-gamma distribution: A comparison of algorithms and of estimated option prices”, **10th International Conference on Computational and Financial Econometrics**, University of Seville, Seville (Spain), 9–11 December.

### Posters

- [2] Bison I., M. M. Dickson, G. Espa e F. Santi. (2017) “The Employment Situation of University of Trento’s Students One Year after Graduation: an Empirical Analysis Based on Administrative Data and Almalaurea’s Surveys”. **Scienza e coscienza a 1000 euro al mese. Neolaureati e mercato del lavoro**, University of Padua, Padua (Italy), 17 March.
- [1] Bison I., M. M. Dickson, G. Espa e F. Santi. (2016) “How the Field of Study and the Academic Curriculum Affect the Employability of Graduates of the University of Trento”. **European Sociological Association (ESA) Mid-term Conference 2016 – Research Network RN 10 – Sociology of Education**, Milan (Italy), 12–13 September.

### Invited seminars

- [2] 13 February 2020 – Seminar *Geostatistics and Spatial Point Pattern Analysis* for the course *Geospatial Information Science* of the *Master in Data Science* of the **Catholic University of the Sacred Heart**, Milan (Italy).
- [1] 25–26 September 2018 – Seminar *Analisi Esplorativa dei Dati con R (Explorative Data Analysis with R)* for the course *Dottorato di Ricerca in Scienze Infermieristiche e Sanità Pubblica (PhD Programme in Nursing Sciences and Public Health)* of the **Tor Vergata University of Rome**, Rome.

## Other talks

- [1] Giuliani D., F. Santi (2017) “R e non solo”. *StatCities Trento – Linee operative e prospettive di riforma del sistema statistico nazionale a livello locale*, Trento (Italy), 14–15 September.

## OTHER SCIENTIFIC ACTIVITIES

---

### Member of scientific and organising committees of conferences and seminars

- 6–8 September 2019 – Member of the Local Organizing Committee of the conference “*Goodness-of-fit, change points and related problems (GOFCP2019)*”, Department of Economics and Management, the University of Trento. – <https://event.unitn.it/gofcp2019>
- 15 February 2017 – Member of the scientific and organising committee of workshop *Advances in Sampling Methods – Five lectures for understanding the world of samplers*, Department of Economics and Management, University of Trento. – <http://statagroup.economia.unitn.it/events/workshop2017.html>

### Referee for scientific journals

- Referee for: *Economia Politica* (2017), *Spatial Statistics* (2018).

## NON-ACADEMIC PROFESSIONAL EXPERIENCE

---

- Consultant as expert in statistics and software development in R for the health fund Sanifonds Trentino (2018, 2020).
- Consultant as expert in statistics and software development in R for the analysis of energy markets for Prisma srl (2017-2018).

## OTHER QUALIFICATIONS

---

### Institutional roles

- Member of the **Teaching Committee** of the Department of Economics of the University of Verona since 6 June 2020.

### Prizes and awards

- Honoured by the Department of Economics and Management of the University of Trento and by the Department of Economics of the University of Verona with the prize in memory of Andrea Vaona for the best doctoral thesis (2018).

### National Scientific Qualification

- Obtained on 6 August 2020 the National Scientific Qualification (*Abilitazione scientifica nazionale, ASN*) as Associate Professor in Economic Statistics (13/D2) – Validity: 6 August 2018 – 6 August 2027.

Verona, 30th August 2020