

SUSANNA LEVANTESI
Curriculum Vitae
per la destinazione “ai fini della pubblicazione”

Part I – General Information

omesse in modo da garantire la conformità del Curriculum Vitae a quanto prescritto dall’art. 4 del Codice in materia di protezione dei dati personali e dall’art. 26 del D. Lgs. 14 marzo 2013, n. 33, al fine della pubblicazione, e contrassegnata per la destinazione “ai fini della pubblicazione”.

Part II – Education

Type	Year	Institution	Notes
PhD	2004	Faculty of Statistical Sciences, Sapienza University of Rome	PhD in Actuarial Science
University graduation	1999	Faculty of Statistical Sciences, Sapienza University of Rome	Degree in Actuarial and Statistical Science (100/110)

Part III – Appointments

III.A – Academic Appointments

Start	End	Institution	Position
2019	present	Department of Statistical Sciences (Sapienza University of Rome)	Associate Professor
2008	2019	Department of Statistical Sciences (Sapienza University of Rome)	Assistant Professor
2005	2008	Faculty of Statistical Sciences, Sapienza University of Rome	Research Grant

20/04/2021	20/04/2032	National Scientific Qualification (Abilitazione Scientifica Nazionale) for the role of Full Professor	SC: 13/D4
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III.B – Other Academic Appointments

Start	End	Institution	Position
2023	present	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for Research evaluation
2023	present	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for Research and Network

2023	2023	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for a Research grant competition. SSD: SECS-S/06
2022	2022	University of Udine	Member of the Committee for the final examination for the Ph.D. program in Managerial and Actuarial Science (XXXVI cycle)
2022	2022	Faculty of Banking, Finance and Insurance Sciences. Catholic University of Milan	Member of the Committee for a Research grant competition. SSD: SECS-S/06
2021	2021	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for a RTDA competition. SSD: SECS-S/06
2021	2021	Department of Social and Economic Sciences (Sapienza University of Rome)	Member of the Committee for a Research grant competition. SSD: SECS-S/06
2021	2021	University of Cagliari	Member of the Committee for the access examination for the Ph.D. program in Economic and Business Sciences (XXXIV cycle)
2021	2021	University of Roma Tre	Member of the Committee for the access examination for the Ph.D. program in Economics (XXXIII cycle)
2020	2020	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for the access examination for the Ph.D. program in Actuarial Science (XXXVI cycle)
2018	present	Department of Statistical Sciences (Sapienza University of Rome)	Coordinator of the Ph.D. program in Actuarial Science within the “School of Statistical Sciences”
2012	Present	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Scientific Board of the PhD Program “School of Statistical Sciences”
2012	present	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for the Quality Assurance of the Master’s degree in Actuarial and Financial Science
2015	present	Sapienza University of Rome	Member of the Audit Group of Sapienza University of Rome
2013	2016	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for Orientation and Tutoring Service
2013	2016	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for the Classrooms’ management
2010	2012	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for Research
2010	2011	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for Seminars
2010	2011	Faculty of Statistical Sciences (Sapienza University of Rome)	Member of the Scientific Board of the PhD Program “Actuarial Science”
2010	2010	Department of Statistical Sciences (Sapienza University of Rome)	Member of the Committee for the access examination for the Ph.D. program in Actuarial Science (XXVI cycle)
2009	2010	Department of Statistical Sciences (Sapienza University of Rome)	Support activities for the completion of study plans for the Degree program in Actuarial and financial sciences

2009	2012	Department of Statistical Sciences (Sapienza University of Rome)	Erasmus leader for the Degree program in Actuarial and financial sciences
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Part IV – Teaching experience

IV.A - Academic teaching in Undergraduate and Postgraduate Degree Courses

Year	Institution	Lecture/Course
2022-2023 - present	Department of Statistical Sciences, Sapienza University of Rome	Bilancio delle imprese e delle assicurazioni. Master's degree program in Actuarial Science. SSD: SECS-P/08
2020-2021 - present	Department of Statistical Sciences, Sapienza University of Rome	Machine learning per le assicurazioni, Master's degree program in Actuarial Science. SSD: SECS-S/06
2019-2020 - present	Department of Statistical Sciences, Sapienza University of Rome	Tecnica attuariale della previdenza, Master's degree program in Actuarial Science. SSD: SECS-S/06
2019-2020	Department of Statistical Sciences, Sapienza University of Rome	Matematica attuariale, Bachelor's degree program in Statistics, Economics Finance, and Insurance. SSD: SECS-S/06
2014-2015 - 2021-2022	Department of Statistical Sciences, Sapienza University of Rome	Laboratorio di tecnica attuariale, Master's degree program in Actuarial Science. SSD: SECS-S/06
2008-2009 - 2018-2019	Department of Statistical Sciences, Sapienza University of Rome	Bilancio delle imprese di assicurazione, Master's degree program in Actuarial Science. SSD: SECS-P/08
2014-2015 - 2016-2017	Faculty of Economics, "Luiss Guido Carli" University	Advanced Financial Mathematics (Supplementary contract), Bachelor's degree in Economics. SSD: SECS-S/06
2010-2011	Faculty of Economics, "Luiss Guido Carli" University	Mathematics finance (Supplementary contract), Bachelor's degree in Economics. SSD: SECS-S/06
2005-2006 - 2009-2010	Faculty of Economics, University of Sannio	Modelli attuariali per le assicurazioni sulla salute, Master's degree program in Actuarial Science. SSD: SECS-S/06
2004-2005 - 2009-2010	Faculty of Economics, University of Sannio	Tecnica attuariale delle assicurazioni sulla vita, Master's degree program in Actuarial Science. SSD: SECS-S/06
2004-2005	Faculty of Economics, University of Sannio	Teoria del rischio, Master's degree program in Actuarial Science. SSD: SECS-S/06

IV.B - Academic teaching in I and II level Master

Year	Institution	Lecture/Course
2016-2017 - present	Department of Statistical Sciences, Sapienza University of Rome	II level Master in "Big Data. Metodi statistici per la Società della Conoscenza". Course "Forecasting models in insurance and health".
2020-2021	Faculty of Economics, Sapienza University of Rome	II level Master in "Banking and Finance (Ba.Fi.)". Course "Mathematical methods for

		Pension Funds management”.
2017-2018	Faculty of Economics, “Luiss Guido Carli” University and Mefop	II level Master in “Economia, Finanza e Investitori Istituzionali” (EFGII). Lecture “Longevity risk: assesment and management”.
2016-2017	Faculty of Economics, “Luiss Guido Carli” University and Mefop	II level Master in “The new discipline of the Public Administration of subsidiaries and pension institutions”. Lecture “Longevity risk management”.
2013-2014	Faculty of Economics, University of Tuscia and Mefop	I level Master in “Public and private welfare of supplementary pension schemes”. Lecture “Longevity risk”.
2008-2009	Faculty of Economics, University of Tuscia and Mefop	II level Master in “Economics and Law for supplementary pension schemes”. Lecture “Long Term Care benefits in pension funds”.
2005-2006 - 2009-2010	Department of Economics, Sapienza University of Rome	II level Master in “Analyst in Risk Management for insurance” (ARMA). Course: “Mathematical models for health insurance”.

IV.C - Academic teaching/seminars in PhD Schools and Research Centers

Year	Institution	Lecture/Course
2023-2024	Ph.D Program “School of Statistical Sciences”. Department of Statistical Sciences, Sapienza University of Rome	Seminar “Come scrivere e pubblicare un articolo scientifico”
2022-2023	Ph.D Program “School of Statistical Sciences”. Department of Statistical Sciences, Sapienza University of Rome	Seminar “Come scrivere un articolo scientifico”
2016-2017	Ph.D Program “School of Statistical Sciences”. Department of Statistical Sciences, Sapienza University of Rome	Course “Longevity risk”.
2013-2014	Ph.D Program “School of Statistical Sciences”. Department of Statistical Sciences, Sapienza University of Rome	Seminar “Mortality models for basis risk in longevity and mortality linked securities”.
2011-2012	Ph.D Program “Actuarial Science”. Department of Statistical Sciences, Sapienza University of Rome	Seminar “Actuarial models for health insurance”.
2008-2009	Ph.D Program “Actuarial Science”. Department of Statistical Sciences, Sapienza University of Rome	Seminar “Longevity risk”.

IV.D - Academic teaching/seminars abroad in Universities or Research Centers

Year	Institution	Lecture/Course
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2020	Department of Mathematical Sciences, University of Copenhagen	Invited Seminar “Natural hedging strategies in long term care insurance” (1 hour)
2019	Tashkent Institute of Finance, Uzbekistan.	Course “Practical work on Gender Mortality” and “Practical work on Gender Financial Inclusion” - Summer School on “Gender economics. Statistics for the Study of Gender Equality. Methods and Tools to implement Gender Sensitive Indicators” (8 hours)
2018	Eastern Africa Statistical Training Center (EASTC), University of Dar-Es-Salaam, Tanzania	Course “Prevalence, statistical indicators and analysis of risk factors for violence against women” – Summer School on “Statistics for the Study of Gender Equality. Methods and Tools to study Violence against Women” (14 hours)
2017	Eastern Africa Statistical Training Center (EASTC), University of Dar-Es-Salaam, Tanzania	Course “Actuarial mathematics and mortality modeling” – Mission AICS (Italian Agency for Cooperation and Development), AFRICA SUB-SAHARIANA project for the strengthening of the Statistical Area - AFRISTAT (Observatoire Economique et Statistique d’Afrique Subsaharienne) & EASTC (30 hours)
2013	Institut de Sciences Financière et d’Assurances (ISFA) Université Lyon 1, France.	Invited Seminar: “Managing longevity and disability risks in life annuities with Long Term Care”, Le Séminaire du laboratoire SAF (1 hour)

Part V - Society memberships, Awards and Honors

Year	Title
2021 - present	Member of the Board of the Professional Association of Italian Actuaries
2018 - present	Member of the Scientific Committee of the Professional Association of Italian Actuaries
2009 - present	Member of the Italian Institute of Actuaries
2001 - present	Member of the Professional Association of Italian Actuaries (Fully Qualified Actuary)
2011 - present	Member of the Working Group on the “Mortality of pensioners and annuitants in Italy”, founded by the Professional Association of Italian Actuaries and the National Association of the Insurance Companies.
2021	ESSEC - AMUNDI ESG Award for the paper “ESG Score Prediction Through Random Forest Algorithm” presented at CEMA (Commodity and Energy Markets Association) 2020-21
2001 - 2018	Member of A.M.A.S.E.S. (Associazione per la Matematica Applicata per le Scienze Economiche e Sociali)
2011	Expert on the validation of data on long-term care of the elderly appointed by the Committee for Statistical Information (CoGIS), the Prime Minister's Office.
2017	Grant for research activity (Law 240/10, art. 29), Sapienza University of Rome
2014	Grant for research activity (Law 240/10, art. 29), Sapienza University of Rome
2000-2003	MIUR Scholarship for Ph.D. program in Actuarial Science (XVI course),

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

VI.A - Grants as PI-Principal Investigator

Year	Title	Program	Grant value
2020	New issues in a systemic risk management	Research project funded by Sapienza University of Rome (Progetto di Ateneo)	39.000 euro
2018	Time series analysis of social security invalidity risk	Research project funded by ANIA (National Association of Insurance Companies)	4.500 euro
2017	Fund for basic research activities (FFABR)	Miur	3.000 euro
2017	Funding for visiting professors (prof. Enrico Biffis)	Sapienza Visiting Professor Program	5.000 euro

VI.B - Grants as I-Investigator

Year	Title	Program	Grant value
2023	New monetary policies made possible by digital technologies	Research project PRIN - PNRR 2022 funded by MUR	Approx. 250.000 euro
2023	Insurance and Finance for Sustainable and Inclusive Growth (IFSIG)	Research project PRIN 2022 funded by MUR	205.000 euro
2021	Sustainability and ESG: risk drivers and corporate profitability	Research project funded by Sapienza University of Rome (Progetto di Ateneo)	10.000 euro
2019	Creation of an Algorithmic trading tool for the optimized management of the Securities Portfolio for Poste Italiane's Customers	Research project funded by Infoedge Technology S.r.l.	7.000 euro
2019	Quantitative models for risks managing and pricing in bank and insurance sectors under the new EU regulation	Research project funded by Sapienza University of Rome (Progetto di Ateneo)	7.500 euro
2016	A Risk-Based model for the evaluation of Medical Malpractice	Research project funded by Sapienza University of Rome (Progetto di Ateneo)	3.000 euro
2014	Quantitative models for estimating probability distributions in long-term care and critical illness insurance	Research project funded by ANIA (National Association of Insurance Companies)	15.000 euro
2012	Actuarial support to the development of a risk-based pricing model for Medical Malpractice	Research project funded by AIBA (Italian Insurance Brokers' Association)	12.000 euro
2012	Markovian processes: numerical methods and actuarial and financial applications	Research project funded by Sapienza University of Rome (Progetto di Ateneo)	15.000 euro

2008	Longevity risk and longevity-linked securities	Research project funded by Sapienza University of Rome (Progetto di Ateneo)	7.500 euro
2008	Risk assessment models for the insurance and social security solvency	PRIN 2007	Approx. 100.000 euro
2006	Biometric risks in life insurance: measurement, management and effects on the insurance solvency	MURST 60%	11.500 euro
2005	Financial sustainability of public health and pension expenditure: a contribution to the creation of possible adjustments	MURST 60%	Approx. 7.500 euro

Part VII – Research Activities

VII.A – Research Topics

Keywords	Brief Description
Mortality/longevity forecasting	<p>Understanding mortality dynamics in a high-dimensional framework is crucial for demographic assessments and could help design appropriate pension plans that mitigate the burden of increased longevity. In the selected publication [4], we propose a coherent mortality forecasting methodology, which leverages the four-way Candecomp/Parafac and Vector-Error Correction models, providing two steps further on methodological developments in the field of mortality analysis and forecasting in a high-dimensional space.</p> <p>Life and healthy life expectancies forecasting are essential for pension systems and for planning the provision of health care to elderly populations. In the selected publication [11], we propose a new approach for forecasting life expectancy and lifespan disparity, independently and simultaneously, based on recurrent neural networks with long short-term memory. In the selected publication [7], we apply a functional clustering method to the multivariate time series of life expectancy at birth. We perform the life expectancy simultaneous forecasting of the countries inside each cluster by implementing a multivariate long short-term memory neural network.</p> <p>In the selected publication [5], the functional clustering is applied to the healthy life expectancy. Then, through a multivariate random walk with drift, a HLE simultaneous forecasting of the populations within each cluster is carried out.</p>
Health insurance (critical illness, long term care) pricing and risk management	<p>The health insurance pricing requires specific and detailed insurance data on healthy and ill lives. Where the health insurance market is small or national commercial insurance data are unavailable, national health statistics can be a viable starting point for insurance ratemaking purposes. In the selected publications [12] and [14], we develop parametric two health insurance pricing models structured on multiple-state continuous and time-inhomogeneous Markov chains based on national statistics in paper [12], assuming that the mortality intensities of healthy and ill lives are modelled by two Weibull hazard functions, in paper [14], by two independent Gompertz-Makeham models).</p> <p>In the selected publication [15], we propose a model for risk assessment in a portfolio of life annuities with long-term care benefits based on a Markovian</p>

	<p>multi-state framework. First, we develop a stochastic projection model to represent the future evolution of mortality and disability transition intensities; second, we investigate the insurance portfolio's solvency through a risk model based on the portfolio risk reserve. In the selected publication [13], we investigate natural hedging strategies for long-term care insurers by diversifying longevity and disability risks. One natural hedging strategy is built on a multivariate duration, the other on the Conditional Value-at-Risk minimization of the unexpected loss. Both approaches are extended to long-term care insurance using a multiple-state framework. We calculate the optimal level of a product mix and measure the effectiveness provided by the interaction of long-term care stand-alone, deferred annuity and whole life insurance.</p>
<p>Pension systems and pension funds</p>	<p>In the selected publications [1] and [10], we dealt with the Notional Defined Contribution (NDC) pension system, which is based on pay-as-you-go funding. In [10], we propose to include automatic balance mechanisms (ABMs) into the Italian NDC pension system to preserve social adequacy under financial sustainability constraints. For this purpose, we build a nonlinear optimization model based on three control variables: pensions indexation, notional rate and contribution rate. In [1], we propose including long-term care benefits in the Italian NDC pension system using a multivariate stochastic model to represent the future evolution of transition probabilities and economic variables. It allows us to deal with the system's financial sustainability in a stochastic environment. Furthermore, we built two ABMs, one based on the solvency ratio and the other on the liquidity ratio. Both act on the indexation of pensions and the notional rate. In the selected publication [9], we aim to understand whether the Italian pension funds' investments are in line with the optimal portfolios built through the declared benchmarks. To achieve the results, we set up a portfolio optimization problem building two networks of pension funds: one based on the (Pearson) correlation and the other measuring the tail correlation. For each network, we use the local clustering coefficients to describe the level of connectivity, and we insert it in the risk function. This approach allows us to consider the network measures directly in the portfolio optimization model.</p>
<p>InsureTech and Cryptocurrencies</p>	<p>The challenges of using technology in the insurance and financial field are opening new horizons for developing and distributing innovative products. Peer-to-peer (P2P) insurance is emerging as part of this trend. The selected publication [2] introduces a model to determine the entry price in a broker-based P2P scheme using a cooperative game approach. We employ the Shapley Value method to distribute the risk among participants. In the selected publication [3], we propose a cashback distribution mechanism based on the participant's marginal contribution to the risk, framing the issue in a cooperative game and applying the concept of Shapley value to define an optimal allocation rule of the remaining capital. The selected publication [6] develops a Jordan Neural Network model to capture the cryptocurrency volatility dynamics. Such a model, which is a parsimonious recurrent neural network, shows a more predictability power than other models designed for time series, such as the Self Exciting Threshold Autoregressive model models and the Non-Linear Autoregressive Neural Networks.</p>
<p>Sustainable finance</p>	<p>Sustainable and responsible finance has become a major aim for asset managers who are regularly dealing with the measurement and management of Environmental, Social and Governance (ESG) risks. ESG ratings are becoming quite popular even if highly questioned in terms of reliability. In the selected publication [8], assuming a reliable set of ESG ratings, our research aims to</p>

	assess how structural data/balance sheet items may affect ESG scores assigned to regularly traded stocks. Using a Random Forest algorithm, we identify the structural corporate variables, which affect the ESG score of the companies constituents the STOXX 600 Index.
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VII.B – Speaker at conference, workshops and seminars

Year	Title
30/6-3/07/2024	33rd European Conference on Operational Research, Copenhagen, Contributed session. Paper: “Sustainability risks affecting solvency ratios for insurance companies” (co-authors: R.L. D’Ecclesia, A. D’Orazio, K. Stefanelli)
4-6/04/2024	Mathematical and Statistical Methods for Actuarial Sciences and Finance (MAF) Congress 2024, University of Le Havre Normandie, Contributed session. Paper: “The Environmental Score and the financial statement: A Machine Learning analysis for four European stock indexes” (co-author R.L. D’Ecclesia, G. Piscopo, K. Stefanelli)
30/11-1/12/2023	Sustainable and Impact Investments International Conference 2023, Roma, Contributed session. Paper: “The ESG Score and the financial statement: the European case” (co-authors R.L. D’Ecclesia, K. Stefanelli)
17-20/10/2023	Dynamics of Social and Economic Systems (DYSES), Almeria, Contributed session. Paper: “The ESG score and the corporate finance ratios: the European case” (co-authors R.L. D’Ecclesia, K. Stefanelli)
5-8/10/2023	96th International Atlantic Economic Society Conference (IAES), Philadelphia, Contributed session. Paper: “The ESG score and the financial statement: The European case” (co-authors R.L. D’Ecclesia, K. Stefanelli)
6-9/06/2023	Applied Stochastic Models and Data Analysis International Conference (ASMDA), Virtual, Contributed session. Paper: “An alternative approach to causes of death prediction using Support Vector Machines” (co-authors A. Nigri, D. Ticconi)
17-19/12/2022	16th International Conference on Computational and Financial Econometrics, King’s College London, Contributed session. Paper: “Deepening the relationship between ESG score and firms’ performance via machine learning” (co-authors: V. D’Amato, R.L. D’Ecclesia)
3-6/07/2022	32nd European Conference on Operational Research, Helsinki, Contributed session. Paper: “Firms’ profitability and ESG score: a machine learning approach” (co-authors: V. D’Amato, R.L. D’Ecclesia)
15-17/06/2022	Insurance Data Science Conference, Università Cattolica del Sacro Cuore, Milan. Paper “Multi-country clustering-based forecasting of healthy life expectancy” (co-authors A. Nigri, G. Piscopo, A. Spelta)
4/11/2021	LV Congresso Nazionale della Cassa del Notariato, Roma, Invited speaker. Talk: Il rischio di longevità
11-14/07/2021	31st European Conference on Operational Research, Athens, Contributed session. Paper: “Optimal cash back allocation in Peer to Peer Insurance” (co-authors: G.P. Clemente, G. Piscopo)
1-4/06/2021	Applied Stochastic Models and Data Analysis International Conference (ASMDA), Virtual, Contributed session. Paper: “Predicting the second wave of COVID-19 pandemic through the Dynamic Evolving Neuro Fuzzy Inference

	System” (co-authors A. Nigri, G. Piscopo)
25/11/2020	ICAS 2020 - 14th International Conference on Applied Statistics, On line, Paper: “Monitoring tail dependence in pension funds investments” (co-authors C. Herteliu, G. Rotundo).
18-25/09/2020	Mathematical and Statistical Methods for Actuarial Sciences and Finance (eMAF) congress 2020, on-line, Invited session on Data driven management in actuarial science. Paper: “Forecasting neural network Lee-Carter model with parameter uncertainty: The case of Italy” (co-author M. Marino)
14-15/11/2019	NET 2019 Workshop, Università Cattolica del Sacro Cuore, Milano. Paper: “A complex network approach to pension funds”. (co-authors: A.M. D’Arcangelis, G. Rotundo)
17-21/09/2018	UNISActuarial School, Paestum (SA). Contributed session. Paper: “Application of Application of machine learning to mortality modeling” (co-authors V. Pizzorusso)
8-11/07/2018	European Conference on Operational Research, Valencia 2018. Contributed session. Paper: “Adjustment mechanisms for notional defined contribution pension systems” (co-authors P. Devolder, M. Menzietti)
5-12-2017	Reinsurance Group of America (RGA). Invited speaker, panel discussion on Long Term Care and private insurance. State of art and opportunities. Rome.
3-5/07/2017	IME 2017 – 21st International Congress on Insurance Mathematics and Economics, Vienna. Contributed session. Paper: “Optimal product mix in Long Term Care insurance” (co-author: M. Menzietti)
13/12/2016	INPS. The annuitants’ mortality in Italy. Roma. Invited speaker. Talk: “Forecasting scenarios of pensioners’ survival”
17/11/2016	Workshop Assoprevidenza, The new ANIA technical bases for Long Term Care: a starting point for hedging evolution. Roma. Invited speaker. Talk: “The new ANIA technical bases for Long Term Care Insurance”
23/06/2016	12th National conference of statistics. Rome. Laboratory Numeracy. Invited Speaker. Talk: “Big Data in insurance and health”
16-18/09/2014	Dynamics of Social and Economic Systems (DYSES). Seville. Contributed session. Paper: “Immunization strategy for hedging disability and longevity risk in Long Term Care insurance” (co-author M. Menzietti)
22-24/04/2014	MAF 2014 - Mathematical and Statistical Methods for Actuarial Sciences and Finance, Vietri sul mare (SA). Contributed session. Paper: “A maximum price of longevity risk in the Solvency II framework” (co-author M. Menzietti)
19-12-2012	Congress Innovative actuarial tools for the evaluation and management of pension funds, Department of Statistical Sciences, Sapienza University of Rome. Contributed session. Paper: “Hedging longevity risk in pension funds with q-forwards” (co-author M. Menzietti)
10-12/04/2012	MAF 2012 - Mathematical and Statistical Methods for Actuarial Sciences and Finance, Ravello. Contributed session. Paper: “Measuring and Hedging the basis risk by Functional Data Models” (co-authors: M. Coppola, V. D’Amato, M. Menzietti, M. Russolillo)
2/12/2011	INPS. Pension actuaries’ day. Rome. Invited speaker. Talk: “Mortality projection models”

19-22/06/2011	21th International AFIR Colloquium. Contributed session. Paper: "Pricing S-forwards via the Risk Margin under Solvency II" (co-authors: M. Menzietti and T. Torri)
7-10/06/2011	14th Applied Stochastic Models and Data Analysis Conference (ASMDA). Rome. Contributed session. Paper: "Pricing Basic Survivor Swaps" (co-authors M. Menzietti, T. Torri)
14/04/2011	AdEPP (Associazione degli Enti Previdenziali Privati) Research Center. Rome. Seminar: "La valutazione del rischio di non autosufficienza nelle assicurazioni Long Term Care"
10/11/2010	MEFOP, Technical seminar "Longevity risk and the implications for pension funds investors", Rome. Invited speaker. Talk: "Longevity risk: representation, evaluation and management"
19/10/2010	Italian Institute of Actuaries, Rome. Invited speaker. Seminar: "Long Term Care insurance: analysis and risk evaluation"
20-25/09/2010	Dynamics of Social and Economic Systems (DYSES). Benevento. Contributed session. Paper: "Managing Longevity and Disability Risks in Life Annuities with Long Term Care" (co-author M. Menzietti)
18-20/09/2010	Workshop PRIN 2007: Models for insurance risk assessment, Tropea (CS). Papers: "On longevity risk securitization and solvency capital requirements in life annuities" (co-authors: M. Menzietti, T. Torri); "Managing longevity and disability risks in long term care insurance" (co-author M. Menzietti)
7-9/04/2010	MAF 2010 - Mathematical and Statistical Methods for Actuarial Science and Finance, Ravello. Contributed session. Paper: "On longevity risk securitization and solvency requirements in life annuities" (co-author M. Menzietti)
16-17/12/2009	SFB-Workshop: Demographic Risk - Humboldt-Universität zu Berlin and Allianz SE, Berlin. Contributed session. Paper: "Solvency Capital Requirements Under Different Stochastic Mortality Models" (co-author T. Torri)
16/06/2009	International Abrapp (Brazilian Pension Funds Association) Seminar, Rome. Invited speaker. Talk: "Longevity Risk during the Decumulation Phase and Strategies to Manage it"
30/09-03/10/2008	XVIII International AFIR Colloquium. Rome. Contributed session. Paper: "Longevity Bond Pricing Models: an Application to the Italian Annuity Market and Pension Schemes" (co-authors: M. Menzietti, T. Torri)
18-20/09/2008	MTISD Congress, Lecce. Contributed session. Papers: "Longevity Bonds: an Application to the Italian Annuity Market" (co-authors: M. Menzietti, T. Torri); "Longevity Risk and Reinsurance Strategies for Enhanced Pensions" (co-author M. Menzietti)
01-04/09/2008	XXXII AMASES Congress, Trento. Contributed session. Paper: "Securitization of longevity risk in the Italian annuity market" (co-author T. Torri),
23-25/06/2008	X Italian-Spanish Congress of Financial and Actuarial Mathematics, Cagliari. Contributed session. Paper: "Setting the hedge of longevity risk for annuity providers through securitization" (co-author T. Torri)
26-28/03/2008	MAF 2008 - Mathematical and Statistical Methods for Actuarial Science and Finance, Venezia. Contributed session. Paper: "Managing Demographic Risk in Enhanced Pension" (co-author M. Menzietti)

VII.C – Research fellowships and visiting

Year	Title
2-6/3/2020	Visiting research. University of Copenhagen, Denmark
15-20/12/2007	Visiting fellow. Max Planck Institute for Demographic Research, Rostock, Germany
15/4-7/7/2002	Postgraduate occasional actuarial science: full time student. City University, London, UK

VII.D - Main organizer or co-organizer and member of the scientific committee of the following workshops/conferences

Year	Title
2024	33rd European Conference on Operational Research, Copenhagen, 30/6-3/07/2024. Organizer of the stream “Insurance risk management”.
2023	67th EWGCFM (Euro Working Group of Commodities and Financial Modelling), Sapienza University of Rome. Rome, 4-6 May 2023, Member of the Scientific and Organizing committee.
2022	16th International Conference on Computational and Financial Econometrics, King's College, London, 17-19 December 2022, Organizer of the stream “Advanced statistical tools in sustainable insurance and finance”.
2022	32nd European Conference on Operational Research, Helsinki, 3-6 July 2022. Organizer of the stream “Insurance risk management”.
2021	31st European Conference on Operational Research, Athens, 11-14 July 2021, Organizer of the stream “Actuarial modeling and risk management”.
2021	COST Action: CA18232 Mathematical models for interacting dynamics on networks. Meeting: Mat-Dyn-Net WG3 & WG4 Meetings. Rome, 14-16 September 2021.
2019	Fostering the interaction between academics and actuaries. A joint meeting with the UNISActuarial School. Bologna, 20 May 2019, Member of the Organizing committee.
2018	UNISActuarial School Paestum (Salerno), 17-21 September 2018. Member of the Organizing committee.
2018	29th European Conference on Operational Research, Valencia, 8-11 July 2018. Organizer of the stream “Risk Management in Insurance”.

VII.E - Editorial Activity

Editorial Board/Advisory Board

- Associate editor, *Frontiers in Artificial Intelligence*, Section “Artificial Intelligence in Finance” (<https://www.frontiersin.org>), ISSN: 2624-8212
- Associate editor, *Journal of Applied Management and Investments*, ISSN: 2225-3467
- Topical advisory panel member, *Sustainability*, ISSN: 2071-1050

Guest editor

- *Annals of Operations Research*. Special Issue “Advances in Statistical Modelling for Social Science” (with L. Alaimo and A. Nigri). Deadline for submission December 2024
- *Quality & Quantity*. Special Issue “Methods for modelling and understanding population changes” (with A. Nigri and M. Bonetti). Closed 31 January 2023.

- Annals of Operations Research, vol. 299, issue 1-2, April 2021. Special Issue “Recent Developments in Financial Modeling and Risk Management” (with R.L. D’Ecclesia and R. Cerqueti)

VII.F - Reviewing Activity

Annals of Operations Research; Applied mathematics; Astin Bulletin; Communications in Statistics-Theory and Methods; Corporate Social Responsibility and Environmental Management; Decision in Economics and Finance; European Actuarial Journal; Frontiers; Genus; Insurance: Mathematics and Economics; Journal of Applied Statistics; Journal of Business Research; Journal of Economic Interaction and Coordination; Journal of Risk finance; Machine Learning with Applications; Mathematical and Statistical Methods for Actuarial Sciences and Finance; North American Actuarial Journal; Quantitative Finance and Economics; Risks; Scandinavian Actuarial Journal, Science of the Total Environment, Soft Computing, The European Journal of Finance.

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Total product [last 10 years]	60	IRIS-Cineca	2014	2024
Papers “Class A” [last 15 years]	26	IRIS-Cineca	2009	2024
Monographs [last 15 years]	1	IRIS-Cineca	2009	2024

Part IX - Selected Publications

1. Levantesi, S., Menziatti, M., Fratoni, L. (2024). Financial sustainability and automatic balance mechanisms for NDC pension systems with disability benefits. *Annals of Operations Research*. DOI: 10.1007/s10479-024-05942-5. IF: 4.4. Google Scholar Citations: 0. “Class A” 13/D4
2. Clemente, G.P., Levantesi, S., Piscopo, G. (2024). Risk Sharing Rule and Safety Loading in a Peer to Peer Cooperative Insurance Model. *Decisions in Economics and Finance*. DOI: 10.1007/s10203-024-00438-0. IF: 1.4. Google Scholar Citations: 0. “Class A” 13/D4
3. Clemente, G.P., Levantesi, S., Piscopo, G. (2023). Optimal cashback in a cooperative framework for peer-to-peer insurance coverages. *Annals of Operations Research*. DOI: <https://doi.org/10.1007/s10479-023-05687-7>. IF: 4.4. Google Scholar Citations: 1. “Class A” 13/D4
4. Cardillo, G., Giordani, P., Levantesi, S., Nigri, A., Spelta, A. (2023). Mortality forecasting using the four-way CANDECOMP/PARAFAC decomposition. *Scandinavian Actuarial Journal*, 9, 916-932. DOI: 10.1080/03461238.2023.2175326. IF: 1.8. Google Scholar Citations: 2. “Class A” 13/D4
5. Levantesi, S., Nigri, A., Piscopo, G., Spelta, A. (2023). Multi-country clustering-based forecasting of healthy life expectancy. *Quality & Quantity*, 57(2), 189-215. DOI: 10.1007/s11135-022-01611-6. Google Scholar Citations: 10. “Class A” 13/D4
6. D’Amato, V., Levantesi, S., Piscopo, G. (2022). Deep learning in predicting cryptocurrency volatility. *Physica A: Statistical Mechanics and its Applications*, 596: 127-158. DOI: 10.1016/j.physa.2022.127158. I.F.: 2.8. Google Scholar Citations: 65. “Class A” 13/D4
7. Levantesi, S., Nigri, A., Piscopo, G. (2022). Clustering-based simultaneous forecasting of life expectancy time series through Long-Short Term Memory Neural Networks. *International Journal of Approximate Reasoning*, 140: 282-297. DOI: 10.1016/j.ijar.2021.10.008. I.F.: 3.2. Google Scholar Citations: 35. “Class A” 13/D4

8. D'Amato, V., D'Ecclesia, R.L., Levantesi, S. (2022). ESG score prediction through random forest algorithm. *Computational Management Science*, 19, 347-373. DOI: 10.1007/s10287-021-00419-3. I.F.: 1.3. Google Scholar Citations: 51. "Class A" 13/D4
9. Herteliu, C., Levantesi, S., Rotundo, G. (2021). Network analysis of pension funds investments. *Physica A: Statistical Mechanics and its Applications*, 579: 126-139. DOI: 10.1016/j.physa.2021.126139. I.F.: 2.8. Google Scholar Citations: 3. "Class A" 13/D4
10. Devolder, P., Levantesi, S., Menzietti, M. (2021). Automatic Balance Mechanisms for Notional Defined Contribution pension systems guaranteeing social adequacy and financial sustainability: an application to the Italian pension system. *Annals of Operations Research*, 299: 765-795. DOI: 10.1007/s10479-020-03819-x. IF: 4.4. Google Scholar Citations: 19. "Class A" 13/D4
11. Nigri, A., Levantesi, S., Marino, M. (2021). Life expectancy and lifespan disparity forecasting: a long short-term memory approach. *Scandinavian Actuarial Journal*, 2: 110-133. DOI: 10.1080/03461238.2020.1814855. IF: 1.8. Google Scholar Citations: 34. "Class A" 13/D4
12. Baione F., Levantesi S. (2018). Pricing Critical Illness insurance from prevalence rates: Gompertz versus Weibull. *North American Actuarial Journal*, 22(2): 270-288. ISSN: 1092-0277. DOI: 10.1080/10920277.2017.1397524. I.F.: 1.4. Google Scholar Citations: 13. "Class A" 13/D4
13. Levantesi S., Menzietti, M. (2018). Natural hedging in Long Term Care insurance. *ASTIN Bulletin*, 48(1): 233-274. ISSN: 0515-0361. DOI: 10.1017/asb.2017.29. I.F.: 1.9. Google Scholar Citations: 15. "Class A" 13/D4
14. Baione F., Levantesi S. (2014). A health insurance pricing model based on prevalence rates: application to critical illness insurance. *Insurance: Mathematics and Economics*, 58: 174-184. ISSN: 0167-6687. DOI: 10.1016/j.insmatheco.2014.07.005. I.F.: 1.9. Google Scholar Citations: 39. "Class A" 13/D4
15. Levantesi S., Menzietti M. (2012). Managing longevity and disability risks in life annuities with Long Term Care. *Insurance: Mathematics and Economics*, 50: 391-401. ISSN: 0167-6687. DOI: 10.1016/j.insmatheco.2012.01.004. I.F.: 1.9. Google Scholar Citations: 64. "Class A" 13/D4

Part X - Other publications (last 10 years)

Papers in international journals

16. Nigri, A., Levantesi, S., Scognamiglio, S. (2024). Disaggregating Death Rates of Age-Groups Using Deep Learning Algorithms. *Journal of Official Statistics*, 40(2), 262-282. DOI: <https://doi.org/10.1177/0282423X241240739>. "Class A" 13/D4
17. Levantesi, S., Menzietti, M, Nyegaard, A.K. (2024). De-risking in multi-state life and health insurance. *Annals of Actuarial Science*. Published online 2024: 1-19. DOI: 10.1017/S1748499524000083
18. Alaimo, S., Levantesi, S., Nigri, A. (2024). Fuzzy clustering of the healthy life expectancy decomposition: A multi-population analysis. *Socio-Economic Planning Sciences*, 92,101805. "Class A" 13/D4
19. D'Amato, V., D'Ecclesia, R.L., Levantesi, S. (2024). Firms' profitability and ESG score: A machine learning approach. *Applied Stochastic Models in Business and Industry*, 40, 2, 243-261. DOI: 10.1002/asmb.2758. "Class A" 13/D4

20. Laporta, A.G., Levantesi, S., Petrella, L. (2024). Neural networks for quantile claim amount estimation: a quantile regression approach. *Annals of Actuarial Sciences*, 18(1), 30-50. DOI: 10.1017/S1748499523000106
21. Levantesi, S., Lizzi, M., Nigri, A. (2024). Enhancing diagnostic of stochastic mortality models leveraging contrast trees. An application on Italian data. *Quality & Quantity*, 58, 1565-1581. DOI: 10.1007/s11135-023-01711-x. "Class A" 13/D4
22. Cardillo, G., Giordani, P., Levantesi, S., Nigri, A., Spelta, A. (2023). A multi-way analysis of similarity patterns in longevity improvements. *Statistical Methods & Applications*. DOI: 10.1007/s10260-023-00714-0
23. Cefalo, L., Levantesi, S., Nigri, A. (2023). Modeling Gender Life Expectancy Ratio in a Multi-population Framework. *Social Indicators Research*. DOI: 10.1007/s11205-023-03098-6
24. Marino, M., Levantesi, S., Nigri, A. (2023). A Neural Approach to Improve the Lee-Carter Mortality Density Forecasts. *North American Actuarial Journal*, 27(1), 148-165. DOI: 10.1080/10920277.2022.2050260. "Class A" 13/D4
25. Fratoni, L., Levantesi S., Menzietti M. (2022). Measuring financial sustainability and social adequacy of the Italian NDC pension system under the COVID-19 pandemic. *Sustainability*, 14, 16274. DOI: DOI: 10.3390/su142316274
26. Cardillo, G., Giordani, P., Levantesi, S., Nigri, A. (2022). A tensor-based approach to cause-of-death mortality modeling. *Annals of Operations Research*. DOI: 10.1007/s10479-022-05042-2. "Class A" 13/D4
27. Nigri, A., Levantesi, S., Aburto, J.M. (2022). Leveraging deep neural networks to estimate age specific mortality from life expectancy at birth. *Demographic research*, 47, 8: 199-232.
28. Nigri, A., Barbi, E., Levantesi, S. (2022). The relay for human longevity: country-specific contributions to the increase of the best-practice life expectancy. *Quality & Quantity*, 56, 4061-4073. DOI: 10.1007/s11135-021-01298-1. "Class A" 13/D4
29. Nigri, A., Levantesi, S., Piscopo, G. (2022). Causes-of-Death Specific Estimates from Synthetic Health Measure: A Methodological Framework. *Social Indicators Research*. DOI: 10.1007/s11205-021-02870-w
30. Levantesi, S., Piscopo, G. (2022). Mutual peer-to-peer insurance: The allocation of risk. *Journal of Co-operative Organization and Management*, 10(1), 100154. DOI: 10.1016/j.jcom.2021.100154.
31. Nigri, A., Barbi, E., Levantesi, S. (2022). The relationship between longevity and lifespan variation. *Statistical Methods & Applications*, 31, 481-493. DOI: 10.1007/s10260-021-00584-4
32. D'Amato, V., D'Ecclesia, R.L., Levantesi, S. (2021). Fundamental ratios as predictors of ESG scores: a machine learning approach. *Decisions in Economics and Finance*, 44(2): 1087-1110. DOI: 10.1007/s10203-021-00364-5. "Class A" 13/D4
33. Levantesi, S., Zacchia, G. (2021). Machine Learning and Financial Literacy: An Exploration of Factors Influencing Financial Knowledge in Italy. *Journal of Risk and Financial Management*, 14(3), 120. DOI: 10.3390/jrfm14030120
34. Levantesi, S., Piscopo, G. (2021). COVID-19 crisis and resilience: challenges for the insurance sector. *Advances in Management and Applied Economics*, 11(3): 1-12. DOI: 10.47260/amae/1131
35. D'Arcangelis, A., Levantesi, S., Rotundo, G. (2021). A complex networks approach to pension funds. *Journal of Business Research*, 129: 687-702. DOI: 10.1016/j.jbusres.2019.10.071

36. Cerqueti, R., D'Ecclesia, R.L., Levantesi, S. (2021). Preface: recent developments in financial modelling and risk management. *Annals of Operations Research*, 299: 1-5. DOI: 10.1007/s10479-021-03958-9. "Class A" 13/D4
37. Bozzo, G., Levantesi, S., Menzietti, M. (2021). Longevity risk and economic growth in sub-populations: evidence from Italy. *Decisions in Economics and Finance*, 44: 101-115. DOI: 10.1007/s10203-020-00275-x. "Class A" 13/D4
38. Levantesi, S., Piscopo, G. (2020). Insurance Role for Handling the COVID-19 impact on Business and Society. *Journal of Applied Management and Investments*, 9 (4): 183-191.
39. Levantesi, S., Nigri, A., Piscopo, G. (2020). Longevity risk management through Machine Learning: state of the art. *Insurance Markets and Companies*, 11(1): 11-20. DOI: 10.21511/ins.11(1).2020.02
40. Levantesi, S., Piscopo, G. (2020). The Importance of Economic Variables on London Real Estate Market: A Random Forest Approach. *Risks*, 8(4), 112. DOI:10.3390/risks8040112
41. D'Amato, V., Levantesi S., Menzietti M. (2020). De-risking Long Term Care insurance. *Soft Computing*, 24: 8627-8641. DOI: 10.1007/s00500-019-04658-0
42. Levantesi, S., Nigri, A. (2020). A random forest algorithm to improve the Lee-Carter mortality forecasting: impact on q-forward. *Soft Computing*, 24: 8553-8567. DOI: 10.1007/s00500-019-04427-z
43. Nigri, A., Levantesi, S., Marino, M., Scognamiglio, S., Perla, F. (2019). A deep learning integrated Lee-Carter model. *Risks*, 7(1), 33. ISSN: 2227-9091. DOI:10.3390/risk7010033
44. Levantesi S., Pizzorusso, V. (2019). Application of Machine Learning to Mortality Modeling and Forecasting. *Risks*, 7(1), 26. ISSN: 2227-9091. DOI:10.3390/risk7010026
45. D'Amato V., Coppola M., Levantesi S. (2018). An option pricing approach for measuring Solvency Capital Requirements in Insurance Industry. *Physica A: Statistical Mechanics and its Applications*, 509: 717-728. ISSN: 0378-4371. DOI: 10.1016/j.physa.2018.05.113. "Class A" 13/D4
46. Levantesi S., Menzietti M. (2017). Maximum Market Price of Longevity Risk under Solvency Regimes: The Case of Solvency II. *Risks*, 5 (2), 29. ISSN: 2227-9091. DOI: 10.3390/risks5020029.
47. D'Amato V., Coppola M., Levantesi S., Menzietti M., Russolillo M. (2017). A longevity basis risk analysis in a joint FDM framework. *The Journal of Risk Finance*, 18 (1): 55-75. ISSN: 1526-5943.

Books

48. Levantesi, Susanna, Menzietti, M. (2016). Allungamento della vita media e rischio assicurativo. Collana: Scienze Assicurative. Book Series: Insurance Sciences, 2: 1-92. Napoli: Edizioni Scientifiche Italiane. ISBN: 978-88-495-3147-3 (Monograph)

Book Chapters

49. Levantesi, S., Nigri, A, Piscopo, G. (2022). Predicting the second wave of COVID-19 pandemic through the Dynamic Evolving Neuro Fuzzy Inference System. In: Skiadas C.H. and Skiadas C., *Quantitative Methods in Demography: Methods and Related Applications in the Covid-19 Era*. The Springer Series on Demographic Methods and Population Analysis, 52. Chapter 3. Springer. ISBN: 9783030930042.
50. Levantesi, S., Nigri, A, Piscopo, G. (2021). Improving longevity risk management through machine learning. In: Abedin, M.Z., Hassan, M.K., Hajek, P., Uddin, M.M., *The Essentials of*

Machine Learning in Finance and Accounting (1st ed.), p. 37-56. Routledge. DOI: 10.4324/9781003037903

51. Baione F., De Angelis P., Levantesi S., Menziatti M., Tripodi A. (2016). Modelli attuariali per la stima di basi tecniche relative ad assicurazioni di persone. In: De Angelis P. Di Falco L.. Assicurazioni sulla salute: caratteristiche, modelli attuariali e basi tecniche, p. 85-121, Il Mulino, ISBN: 978-88-15-26084-0
52. Baione F., Conforti C., Levantesi S., Menziatti M., Tripodi A. (2016). Stima di basi tecniche per assicurazioni LTC, malattie gravi e invalidità. In: De Angelis P. Di Falco L.. Assicurazioni sulla salute: caratteristiche, modelli attuariali e basi tecniche, p. 123-196, Il Mulino, ISBN: 978-88-15-26084-0

Conference Proceedings

53. Giordani, P., Levantesi, S., Nigri, A., Zarulli, V. (2023). A cohort study on the gender gap in mortality through the Tucker3 model . 14th Scientific Meeting of the Classification and Data Analysis Group. CLADAG 2023 Book of Abstracts and Short papers, p. 176-179. Pearson. ISBN: 9788891935632
54. Cardillo, G., Giordani, P., Levantesi, S., Nigri, A. (2022). An Application of the Tensor-Based Approach to Mortality Modeling. In: Corazza, M. et al. (eds): MAF 2022, Mathematical and Statistical Methods for Actuarial Sciences and Finance, 134-139. Springer, Cham. DOI: 10.1007/978-3-030-99638-3_22
55. Cefalo, L., Levantesi, S., Nigri, A. (2022). Modelling Life Expectancy Gender Gap in a Multi-population Framework. In: Corazza, M. et al. (eds): MAF 2022, Mathematical and Statistical Methods for Actuarial Sciences and Finance, 151-155. Springer, Cham. DOI: 10.1007/978-3-030-99638-3_25
56. Fratoni, L., Levantesi, S., Menziatti, M. (2022). Automatic Balance Mechanisms in an NDC Pension System with Disability Benefits. In: Corazza, M. et al. (eds): MAF 2022, Mathematical and Statistical Methods for Actuarial Sciences and Finance, 266-271. Springer, Cham. DOI: 10.1007/978-3-030-99638-3_43
57. Levantesi, S., Lizzi, M., Nigri, A. (2022). An application of contrast trees for mortality models diagnostic and boosting. Book of short papers. 10th International Conference IES 2022 Innovation & Society 5.0: Statistical and Economic Methodologies for Quality Assessment. PKE. ISBN 978-88-94593-35-8
58. Levantesi S., Menziatti M. (2021). Modelling health transitions in Italy: a generalized linear model with disability duration. In: Corazza, M. et al., Mathematical and Statistical Methods for Actuarial Sciences and Finance: eMAF2020, p. 307-313. Springer International Publishing. ISBN: 978-3-030-78964-0. DOI: 10.1007/978-3-030-78965-7_45
59. Laporta, A.G., Levantesi, S., Petrella, L. (2021). Quantile regression neural network for quantile claim amount estimation. In: Corazza, M. et al., Mathematical and Statistical Methods for Actuarial Sciences and Finance: eMAF2020, p. 299-305. Springer International Publishing. ISBN: 978-3-030-78964-0. DOI: 10.1007/978-3-030-78965-7_44
60. Marino, M., Levantesi, S. (2021). The Neural Network Lee–Carter Model with Parameter Uncertainty: The Case of Italy. In: Corazza, M. et al., Mathematical and Statistical Methods for Actuarial Sciences and Finance: eMAF2020, p. 337-342. Springer International Publishing. ISBN: 978-3-030-78964-0. DOI: 10.1007/978-3-030-78965-7_49
61. Nigri, A., Levantesi, S. (2020). LI-CoD Model. From Lifespan Inequality to Causes of Death. Book of Short Papers SIS 2020, p. 1507-1512. Pearson. ISBN: 9788891910776

Rome, 10 July 2024

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