

CATERINA LIBERATI

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CONTACTS

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RESEARCH TOPICS

Supervised Learning, Unsupervised Classification, SMEs, Unconventional Data Sources, Digital Economy.

CURRENT POSITIONS

- 2025 - Council Member of the group Statistical Measurement for Economic Analysis - Italian Statistical Society
- 2024 - Director of the WebSight Observatory (<https://websight.unimib.it>)
- 2019 - Associate Professor in Statistics for Economics

FORMER POSITIONS

- 2019-2023 Council Member of the International Society for Business and Industrial Statistics (ISBIS)
- 2010-2019 Assistant Professor in Statistics for Economics at the University of Milano-Bicocca
- 2006-2010 Post Doc Fellow in Statistics at University of Bologna.
- 2001-2003 Consultant at Simbologica srl

EDUCATION

- 2002-2006 Ph.D. in Statistics at University of Bologna.
- 2001 Laurea (MSc eq.) in Statistics for Economics at University of Bologna

VISITING

- 2018 Visiting Fellow at the Business School of the University of Edinburgh (2 weeks funded by the International Exchange Program Bilateral: Accademia dei Lincei-The Royal Society of Edinburgh)
- 2015 Visiting Fellow at the Business School of the University of Edinburgh (3 months funded by DEMS Department University of Milano-Bicocca)
- 2007-2008 Visiting Fellow at the Statistical Department, College of Business Administration, University of Tennessee (6 months funded by Marco Polo grant)
- 2004-2005 Visiting Ph.D. at the Statistical Department, College of Business Administration, University of Tennessee (6 months funded by Marco Polo grant).

AFFILIATIONS

Member of the following Scientific Societies:

- 2021- International Statistical Institute (ISI)
- 2016- Italian Statistical Society (SIS)
- 2016- European Network for Business and Industrial Statistics (ENBIS)
- 2013- International Society for Business and Industrial Statistics (ISBIS)

Member of the following Research Centers:

- 2020- Center for European Studies (CefES-DEMS)

- 2012- Bicocca-Applied Statistic Center (B-ASC)

PUBLICATIONS

Scientific Journals:

Bernucci, C., Cracchiolo, G., Raspagliesi, L., Rambelli, F., Borrotti, M., Liberati, C., Rampini, A.D., Cane, G., Brembilla, C., Fanti, A. (2025). Support or constraint? A comprehensive analysis of postoperative cervical bracing practices: insights from the Italian society of neurosurgery (SINch) survey and a systematic review of the literature. *European Spine Journal*, 34(8), 3113-3126.

Crosato, L., Domenech, J., Liberati, C. (2024). Websites' data: a new asset for enhancing credit risk modeling. *Annals of Operations Research*, 342(3), 1671-1686.

Bottai, C., Crosato, L., Domenech, J., Guerzoni, M., Liberati, C. (2024). Scraping innovativeness from corporate websites: Empirical evidence on Italian manufacturing SMEs. *Technological Forecasting and Social Change*, 207, 123597.

Crosato, L., Liberati, C., Repetto, M. (2023). Lost in a black-box? Interpretable machine learning for assessing Italian SMEs default. *Applied Stochastic Models in Business and Industry*, 39, 829-846.

Crosato, L., Domènech, J., Liberati, C. (2021) Predicting SME's default: are their websites informative? *Economics Letters*, 204, 109888.

Depperu, D., Magnani, G., Crosato, L., Liberati, C. (2021) Growth of Firms in a Fragmented Cultural Industry: Italian Commercial Art Galleries' Competitive Strategies. *Sustainability*, 13(9) 5057.

Arrigo, E., Liberati, C., Mariani, P. (2021) Social Media Data and Users' Preferences: a Statistical Analysis to support Marketing Communication. *Big Data Research* 24(15), 100189.

Liberati, C., Longaretti, R., Michelangeli, A. (2021) Measuring Tolerant Behavior. *Jahrbücher für Nationalökonomie und Statistik*, 241(2), 149-171.

Decataldo, A., Liberati, C., Michelangeli, A., Tognetti, M. (2019). Millennials e religione : divergenza o continuità rispetto alla generazione dei genitori? *Religioni e Società*, XXXIV(93), 21-28.

Liberati, C., Camillo, F. (2018) Personal Values and Credit Scoring: new insights in the financial prediction. *Journal of the Operational Research Society* 69(12): 1994-2005.

Liberati, C., Mariani, P. (2018) Dynamic profiling through repeated surveys: a customer satisfaction study. *Electronic Journal of Applied Statistical Analysis*, 11(1): 1-20.

Liberati, C., Camillo, F., Saporta, G. (2017) Advances in Credit Scoring: combining performance and interpretation in Kernel Discriminant. *Advances in Data Analysis and Classification*, 11(1): 121-138.

Masserini, L., Liberati, C., Mariani, P. (2017) Quality service in banking: a longitudinal approach. *Quality & Quantity* 51(2): 509-523.

Falotico, R., Liberati, C., Zappa, P. (2015). Identifying oncological patient information needs to improve e-health communication, *Quality and Reliability Engineering International*, 31(7): 1115-1126.

Liberati, C., Marzo, M., Zagaglia, P., Zappa, P. (2015) Drivers on demand and supply in the Euro market: the role of "key players" during the recent turmoil. *Financial Markets and Portfolio Management*, 29(3): 207-250.

Liberati, C., Camillo, F. (2015) Discovering hidden concepts in predictive models for texts' polarization. *International Journal of Data Warehousing and Mining*, 11(4): 29-48

Biselli, M., Dall'Agata, M., Gramenzi, A., Gitto, S., Liberati, C., Ravaioli, M., Gambato, M., Montalti, R., Pinna, A.D., Burra, P., Gerunda, G.E., Erroi, V., Cillo, U., Andreone, P., Bernardi, M.(2015) A new prognostic model to predict drop-out from the waiting list in cirrhotic candidates for liver transplantation with MELD score < 18. *Liver International*, 35(1): 184-191.

Liberati, C., Mariani, P. (2012). Banking Customer Satisfaction Evaluation: a Three-way Factor Perspective. *Advances in Data Analysis and Classification*, 6(4): 323-336.

Lacangellera, M., Liberati, C., Mariani, P. (2011). Banking Services Evaluation: a Dynamic Analysis. *Journal of Applied Quantitative Methods*, 6(4): 3-13.

D'Attoma, I., Liberati, C. (2011). An Optimal Cluster-Based Approach for Subgroup Analysis Using Information Complexity Criterion. *International Journal of Business Intelligence and Data Mining*, 6(4): 402-425.

Liberati, C., Howe, A.J., Bozdogan, H. (2009). Data Adaptive Simultaneous Parameter and Kernel Selection in Kernel Discriminant Analysis (KDA) Using Information Complexity. *Journal of Pattern Recognition Research*, 4(1): 119-132.

Book Chapters:

Bianchi, F., L. Crosato, and C. Liberati (2025) La previsione della sofferenza finanziaria degli enti locali nel contesto internazionale: una Literature Review Strutturata. *VIII Rapporto Ca'Foscari sui comuni 2025. I comuni nel tunnel dell'austerità*. Castelveccchi. pp:436-457.

Bianchi, F., L. Crosato, and C. Liberati (2024) La previsione della sofferenza finanziaria dei comuni italiani: un approccio data-driven. *VII Rapporto Ca'Foscari sui comuni. 2024-I comuni nella nuova governance europea della finanza pubblica*. Castelveccchi. pp:303-321.

Bongini, P., Iwanicz-Drozowska, M., Liberati, C. (2023). Business continuity planning and management. *COVID-19 and European Banking Performance: Resilience, Recovery and Sustainability*, Wachtel P., Miklaszewska E. (Eds) Routledge, pp.64-86.

Bottai, C., Crosato, L., Domenech, J., Guerzoni, M., Liberati, C. (2022). Unconventional data for policy: Using Big Data for detecting Italian innovative SMEs. In *Proceedings of the 2022 ACM Conference on Information Technology for Social Good*. Association for Computing Machinery, NY. pp. 338-344.

Liberati, C., Mariani P. (2018). Big Data Meet Pharmaceutical Industry: An Application on Social Media Data, in *Classification, (Big) Data Analysis and Statistical Learning*, Mola F., Conversano C., Vichi M. (Eds), Springer, 23-30.

Liberati, C., Mariani, P., Masserini, L. (2015) A latent growth curve analysis in banking customer satisfaction, in *Advances in Latent Variables, Studies in Theoretical and Applied Statistics*, Carpita M., Brentari E., Qannari E.M. (Eds.), Springer, 151-158.

Liberati, C., Mariani, P. (2014) Dynamic customer satisfaction and measure of trajectories: a banking case, in *Analysis and Modeling of Complex Data in Behavioral and Social Sciences*, Studies in Classification, Data Analysis, and Knowledge Organization, Vicari D.,Okada A., Ragozini G., Weihs C. (Eds.), Springer-Verlag, 183-190

Liberati, C., Camillo, F. (2014) Subjective Business Polarization: Sentiment Analysis meets Predictive Modeling, in *New Trends in Database and Information Systems*, Studies in Advances in Intelligent Systems and Computing, Catania B. et al. (Eds.), Springer-Verlag, 329-338.

Liberati, C., Mariani, P. (2013). Evolutionary customer evaluation: a dynamic approach to a banking case, in *Statistical Models for Data Analysis*, Studies in Classification, Data Analysis, and Knowledge Organization. Giudici P., Ingrassia S., Vichi M. (Eds.), Springer-Verlag, 191-199.

Liberati, C., Mariani, P. (2013). Dynamic Principal Component Analysis: a banking Customer Satisfaction evaluation, in *Algorithms from \mathcal{E} for Nature and Life*, Studies in Classification, Data Analysis, and Knowledge Organization. Lausen B., van den Poel D., Ultsch A. (Eds.), Springer-Verlag, 397-405.

Bozdogan, H., Howe, J. A., Katragadda, S., Liberati, C. (2013). Misspecification resistant model selection using Information Complexity with applications, in *Classification and Data Mining*, Studies in Classification, Data Analysis, and Knowledge Organization. Giusti, A.; Ritter, G.; Vichi, M. (Eds.), Springer-Verlag, 165-172.

Liberati, C., Camillo, F. (2006). Kernel Discriminant Analysis and Information Complexity: advanced models for micro-data mining and micro-marketing solutions, in *Data Mining VII: Data, Text and Web Mining and their Business Applications*, Zanasi A., Brebbia C.A., Ebecken N.F.F. (Eds.), WIT press, 115-122.

Bozdogan, H., Camillo, F., Liberati, C. (2006). On the Choice of the Kernel Function in Kernel Discriminant Analysis Using Information Complexity, in *Data Analysis, Classification and the Forward Search*, Studies in Classification, Data Analysis, and Knowledge Organization. Bock H., Gaul W., Vichi M. (Eds.), Springer-Verlag, 11-21

Refereed Conference Proceedings:

Bottai, C., Crosato, L., Domenech, J., Guerzoni, M., Liberati, C. (2025). Unconventional Data and Innovation: Are Innovative SMEs' Web Pages Different?. In: Pollice, A., Mariani, P. (eds) *Methodological and Applied Statistics and Demography I. SIS 2024*. Italian Statistical Society Series on Advances in Statistics. Springer, Cham.

Bottai, C., Crosato, L., Liberati, C. (2024). Prediction of SMEs Bankruptcy at the Industry Level with Balance Sheets and Website Indicators. In *Proceedings CARMA 2024 - 6th International Conference on Advanced Research Methods and Analytics*. Editorial Universitat Politècnica de València, pp.235-241

Crosato, L., Bottai, C., Domenech, J., Guerzoni, M., Liberati, C. (2023). Can websites reveal a firm's innovativeness? Empirical evidence on Italian manufacturing SMEs. in *Proceedings of 5th International Conference on Advanced Research Methods and Analytics (CARMA2023)*, Editorial Universitat Politècnica de València, p. 19-26.

Crosato, L., Domenech, J., Liberati, C. (2023). Enhancing SMEs default prediction with web-scraped data. In *IES 2023 - Statistical Methods for Evaluation and Quality: Techniques, Technologies and Trends (T3) Book Of Short Papers*. Il Viandante pp.133-136.

Crosato, L., Domenech, J., Liberati, C. (2022) Non-conventional data and default prediction: the challenge of companies' websites, in *4th International Conference on Advanced Research Methods and Analytics (CARMA2022)*, Universitat Politècnica de València, 253-258.

Crosato, L., Domenech, J., Liberati, C. (2022) Toward an early detection of SME's default with websites' indicators, in *Book of short papers 10th International Conference IES 2022 Innovation and Society 5.0: Statistical and Economic Methodologies for Quality Assessment*, Pke, 57-61.

Borgoni, R., Casamassima, D., Liberati, C., Michelangeli, A. (2021). Inclusive attitudes towards immigrants in Europe: The role of preferences, space and economic outcomes, in *Proceedings 13th World Congress of the RSAI : Smart Regions – Opportunities for sustainable development in the digital era*. RSAI. pp.525-525.

- Crosato, L., Liberati, C., Repetto, M. (2021) Linear models vs Neural Network: predicting Italian SMEs default, in *Book of short papers - SIS 2021*, Pearson, 590-595.
- Bacino, V., Zoccarato, A., Liberati, C., Borrotti, M. (2021) Statistical learning for credit risk modelling, in *Book of short papers - SIS 2021*, Pearson, 1624-1629.
- Liberati, C., Longaretti, R., Michelangeli, A. (2018). Measuring the multiple facets of tolerance using survey data, in *Book of short Papers SIS 2018*, Pearson, 1348-1351.
- Liberati, C., Crosato, L., Mariani, P., Zavanella, B. (2017) Dynamic profiling of banking customers: a pseudo-panel study, in *SIS 2017 Statistics and Data Science: new challenges, new generations*, Firenze University Press. pp. 601-606.
- Crosato, L, Liberati, C, Mariani, P, Zavanella, B. (2017). Industrial Production Index and the Web: an explorative cointegration analysis. in *SIS 2017 Statistics and Data Science: new challenges, new generations*, Firenze University Press
- Arrigo, E., Liberati, C., Mariani, P. (2016) A Multivariate Approach to Facebook Data for Marketing Communication, in *Proceedings of 1st International Conference on Advanced Research Methods and Analytics CARMA2016*, Editorial Universitat Politècnica de València, Valencia, Spain. pp. 66-74.
- Liberati, C., Mariani, P. (2015). Big data meet Pharmaceutical Industry: an application of social media data, in *Book of abstracts*, Mola, F, Conversano, C. (Eds.) pp 411-415. Cuec Editrice Cagliari. (ISBN 978 88 8467 949 9)
- Liberati, C., Zappa, P. (2013) Dynamic patterns analysis meets Social Network Analysis in the modeling of financial market behavior, in *Proceedings 59th ISI World Statistics Congress of the International Statistical Institute 2013*, International Statistical Institute, The Hague, Netherlands. pp. 2447-2452
- Liberati, C., Mariani, P., Masserini, L. (2013). A latent growth curve analysis in banking customer satisfaction, in *Advances in Latent Variables*, electronic proceedings of SIS2013, Eds. Brentari E., Carpita M., Vita e Pensiero, Milan, Italy.
- Liberati, C., Mariani, P. (2012). Dynamic Customer Satisfaction and Measure of Trajectories: a Banking Case, in *Analysis and Modeling of Complex Data in Behavioural and Social Sciences*. Cleup Padova.
- Liberati, C., Camillo, F., Saporta, G. (2012). Kernel Discrimination and Explicative Features: an Operative Approach, in *electronic proceedings of COMPSTAT 2012*, Colubi, A, Fokianos, K., González-Rodríguez J, Kontoghiorghes, EJ (Eds.) pp: 507-518. International Statistical Institute (ISI).
- Bozdogan, H., Howe, J.A., Katragadda, S., Liberati, C. (2009). Misspecification resistant model selection using Information Complexity with applications. In: *Classification and Data Analysis*. Ingrassia S., Rocci R., (Eds.)Catania, 9-11 Settembre 2009 p. 143-146, PADOVA:CLEUP, ISBN: 978-88-6129-406-6.
- Camillo, F., Liberati, C. (2006) The kernel approach in the future of data mining, in *electronic Proceedings of Knowledge Extraction and Modeling*, Esposito-Vinzi V., Lauro C., Braverman A., Kiers H. A., Schimek M. G. (Eds). Capri 4-6 Settembre 2006. (ISBN: 88-89744-01-4)
- Camillo, F., Liberati, C., (2006) F. Neri, e-CRM, web semantic propensity models and micro-data mining an application of Kernel Discriminant Analysis to the Glam on web case, in *Proceeding of 8th International Conference on Textual data Statistical Analysis JADT '06*, Presses Universitaires de Franche-Comté, Vol I, pp. 235-243.

Camillo, F., Liberati, C. (2006) Recent issues about textual information analysis in micro-marketing: methodological suggestions and some case studies, in *Proceedings XLIII Meeting of the Italian Statistical Society*, Università di Torino 14-16 giugno, Cleup, vol. Plenary sessions Invited sessions, pp. 93-103.

CONFERENCES

Organizer:

Member of the Steering Committee of the International Conference on Advanced Research Methods and Analytics (CARMA) since 2022

Scientific Board Member of the *8th International Conference on Advanced Research Methods and Analytics (CARMA 2026)* Universitat Politècnica de València, Valencia July 1-3, 2026

Scientific Board Member of the *4th International Conference on Economic Statistics (ICES 2026)* Università di Bari, Bari, February 5-6, 2026

Scientific Board Member of the *7th International Conference on Advanced Research Methods and Analytics (CARMA 2025)* Università Roma 3, Rome, July 2-4, 2025

Scientific Board Member of the *Innovation & Society: Statistics and Data Science for Evaluation and Quality (IES2025)* University of Padua, Bressanone June 25-27, 2025

Scientific Board Member of the *6th International Conference on Advanced Research Methods and Analytics (CARMA 2024)* Universitat Politècnica de València, Valencia June 26-28, 2023

Scientific Board Member of the *5th International Conference on Advanced Research Methods and Analytics (CARMA 2023)* University of Seville, Seville June 28-30, 2023

Scientific Board Member of the *4th International Conference on Advanced Research Methods and Analytics (CARMA 2022)* Universitat Politècnica de València, Valencia June 29-1 July, 2022

Scientific Board Member of the *51th Scientific Meeting of the Italian Statistical Society (SIS 2022)*, University of Campania "Luigi Vanvitelli", Caserta, June 23-26, 2022

Scientific Board Member of the *3rd International Conference on Advanced Research Methods and Analytics (CARMA 2020)* Universitat Politècnica de València, Valencia July 8-9, 2020

Scientific Board Member of the *Young Business and Industrial Statisticians (y-BIS 2019) Workshop on Recent Advances in Data Science and Business Analytics*, Mimar Sinan Fine Arts University, Istanbul September 25-28 2019.

Scientific Board Member of the *2nd International Conference on Advanced Research Methods and Analytics (CARMA 2018)* Universitat Politècnica de València, Valencia, July 12-13 2018.

Scientific Board Member of the *International Conference on Information Complexity and Statistical Modeling in High Dimensions with Applications (IC-SMHD-2016)*, Kayseri, Cappadocia, Turkey. May 18-21 2016.

Chair of the session: Leveraging Web and AI Technologies for Business Research. *7th International Conference on Advanced Research Methods and Analytics (CARMA2025)* University of Roma3, Roma.

Chair of the session: Statistical approaches to interpret real-world contexts, *Innovation & Society: Statistics and Data Science for Evaluation and Quality (IES2025)* University of Padua, Bressanone (joint with M. Bini)

Chair of the session: Advances in Credit Risk Modeling, *Meeting of the Classification and Data Analysis Group of the the Italian Statistical Society (CLADAG 2017)*, University of Milano-Bicocca (joint with G. Andreeva)

Organizing Committee Member of *7th International Conference on Advanced Research Methods and Analytics (CARMA 2025)*, Università Roma 3, Rome, July 2-4, 2025

Local Committee Member of the *1st Italian Conference on Economic Statistics*, University of Milano-Bicocca, Milan February 17th 2023

Local Committee Member of the *International Conference on Data Science and Social Research (DSSR 2019)*, University of Milano-Bicocca, Milan February 4, 2019

Local Committee Member of the *Innovation and Society, Statistical Methods for the Evaluation (IES 2013)*, University of Milano-Bicocca, Milan December 9-10, 2013.

Speaker (not complete):

Bottai, C, Crosato, C, Liberati, C: Decoding Websites: Inferring Financial Distress in SMEs from Coding Style. *4th International Conference on Economic Statistics (ICES 2026)*, University of Bari, Bari, 5-6 February 2026.

Bottai, C, Crosato, C, Liberati, C: Enhancing Bankruptcy Prediction for Micro-Enterprises through Financial and Website Data *25th Annual Conference of the European Network for Business and Industrial Statistics (ENBIS)*, University of Piraeus, Piraeus, Greece, 15-18 September 2025 (solicited).

Bottai, C, Crosato, C, Liberati, C: Predicting bankruptcy of micro-enterprises by industry: Integrating financial and web-based indicators *HiTEc meeting & Workshop on Complex data in Econometrics and Statistics (HiTEc & CoDES 2025)*, Cyprus University of Technology, Limassol, Cyprus, 8-9 July 2025 (solicited).

Bottai, C, Crosato, C, Liberati, C: Prediction of Micro Enterprises Bankruptcy at the Industry Level with Balance Sheets and Website Indicators *MADFoot seminars*, Universitat Politècnica de València, June 09 2025 (online seminar).

Bottai, C, Crosato, C, Liberati, C: Industry specific Italian SME bankruptcy forecasting: balance sheet and website data *workshop Corporate Credit Analysis: Advances in Methodologies and the Use of AI*, Banca d'Italia, Palermo, June 06 2025 (solicited).

Bianchi, F, Crosato, L, Liberati, C: La previsione della sofferenza finanziaria dei comuni italiani: un approccio data-driven. *Modelli predittivi per le criticità finanziarie dei comuni*, IFEL Fondazione ANCI, Roma, February 28th 2025 (solicited).

Liberati, C, Bottai, C, Crosato, L, Domenech, J, Guerzoni, M: Firms innovation capabilities and corporate websites: Evidence on Italian SMEs. *Web Intelligence Network Conference. From Web to Data*, Statistics Poland, Gdansk, February 04-05 2025.

Bottai, C, Crosato, L, Liberati, C: Prediction of SMEs Bankruptcy at the Industry Level with Balance Sheets and Website Indicators *6th International Conference on Advanced Research Methods and Analytics (CARMA2024)*, Universitat Politècnica de València, Valencia, June 26-28 2024.

Liberati, C, Bottai, C, Crosato, L, Domenech, J, Guerzoni, M: Unconventional data and Innovation:

are innovative SMEs' web pages different? *52nd Scientific Meeting of the Italian Statistical Society (SIS 2024)*, University of Bari, June 17-20 2024 (specialized session ENBIS-ISBIS).

Crosato, L, Domenech, J, Liberati, C: Enhancing SMEs default prediction with web-scraped data. *11th Scientific Meeting of the SIS Group Statistics for the Evaluation and Quality in Services (IES2023)*, University 'G. d'Annunzio' of Chieti-Pescara, Pescara, Aug 30- Sep 1, 2023. (solicited)

Crosato, L, Domenech, J, Liberati, C: Improving SMEs default prediction: combining conventional and unconventional data. *7th workshop on Games and Decisions in Reliability and Risk (GDRR7)*, Real Academia de Ciencias Exactas, Física y Naturales de España, Madrid, May 24- 26, 2023

Bottai, C., Crosato L, Domenech, J., Guerzoni, M, Liberati, C. Unconventional data and Innovation Policy: are innovative SMEs' web-pages different?. *Economic Statistics Centre of Excellence Conference on Economic Measurement 2023* King's College, London May 17-19, 2023

Crosato, L, Domenech, J, Liberati, C: Websites' data: a new asset for enhancing credit risk modeling. *4th International Conference on Advanced Research Methods and Analytics (CARMA2022)*, Universitat Politècnica de València, Valencia, July 29- July 1, 2022

Crosato, L, Domenech, J, Liberati, C: Websites' data: a new asset for enhancing credit risk modeling. *Statistics and Data Science in Business and Industry (ISBIS 2022)*, University of Federico II, Naples, June 20-22, 2022.

Crosato, L, Domenech, J, Liberati, C: Toward an early detection of SME's default with websites' indicators *Innovation and Society 5.0 (IES2022)*, University of Campania "Luigi Vanvitelli", Capua (CE), January, 27-28, 2022 (online)

Crosato, L, Domenech, J, Liberati, C: Predicting SME's default: some old facts and a new idea. *3rd International Conference on Advanced Research Methods and Analytics (CARMA2020)*, Universitat Politècnica de València, Valencia, July 8-9, 2020 (online).

Blazquez, D, Crosato, L, Domenech, J, Liberati, C: Predicting Business Survival From Their Websites. *Young Business and Industrial Statisticians (y-BIS 2019)*, Mimar Sinan Fine Arts University, Istanbul, September 25-28 2019.

Liberati C., Andreeva G.: Behavioural attitudes and financial performance: New ideas for segmenting bank customers. *12th International Conference on Computational and Financial Econometrics (CFE 2018)*, University of Pisa, December 14-16, 2018. (solicited)

Liberati C., Andreeva G.: Psychographic Segmentation of Italian Bank Customers. *29th European Conference on Operational Research (EURO2018)*, Universitat Politècnica de València, Valencia, July 8-11, 2018. (solicited)

Liberati, C., Longaretti, R., Michelangeli, A.: Measuring the multiple facets of tolerance using survey data. *49th Scientific Meeting of the Italian Statistical Society (SIS 2018)*, University of Palermo, June 22-24 2018.

Liberati C., Crosato L., Mariani P., Zavanella B.: Dynamic profiling of banking customers: a pseudo-panel study. *Statistics and Data Science: new challenges, new generations (SIS 2017)*, University of Florence, June 28-30, 2017.

Liberati C., Camillo F.: Insolvency as opportunity: a marketing perspective on time-dependent credit risk. *The 17th Conference of the Applied Stochastic Models and Data Analysis International Society (ASMDA2017)*, De Morgan House of the London Mathematical Society, London, June 6-9, 2017.

Liberati C., Arrigo E., Mariani P.: A Multivariate Approach to Facebook Data for Marketing

Communication, 1st *International Conference on Advanced Research Methods and Analytics (CAR-MA2016)*, Universitat Politècnica de València, Valencia, Spain, July 6-7 2016.

Liberati C., Mariani M.: Visualization and Measuring of Dynamic Customer Satisfaction: a Banking Case. *International Symposium on Business and Industrial Statistics (ISBIS 2014)*, Durham, NC, U.S., June, 9-11 2014 (solicited)

Liberati C., Camillo F.: Satisfaction, Human Values and other Intangible Dimensions as Drivers of New Credit Scoring Models, *6th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2013)*, Senate House, University of London, December, 14-16 2013 (solicited)

Liberati C., Zappa P.: Dynamic Patterns Analysis meets Social Network Analysis in the Modeling of Financial Market Behavior. *59th World Statistics Conference (ISI 2013)*, Hong Kong, August, 25 - 30 2013 (solicited)

Liberati C., Camillo F., Saporta G.: Kernel Discrimination and Explicative Features: an Operative Approach, *20th International Conference on Computational Statistics (COMPSTAT 2012)*, Lymassol, Cyprus, August, 27-31 2012 (solicited)

Liberati C., Mariani, P.: Evolutionary Customer Evaluation: a Dynamic Approach to a Banking Case, *Meeting of the Classification and Data Analysis Group of the Italian Statistical Society (CLADAG 2011)*, University of Pavia, September 7-9 2011.

Liberati C., Mariani P.: Dynamic Principal Component Analysis: a banking Customer Satisfaction evaluation, *Joint Conference of the German Classification Society and the German Association for Pattern Recognition (GFKL 2011)*, Goethe University Frankfurt, Frankfurt, August 31-September 2 2011

Liberati C., Masotti M., Bozdogan H.: Probabilistic Discriminant Analysis in the Feature Space using Information Complexity. *International Conference on Multivariate Statistical Modelling & High Dimensional Data Mining (HDM 2008)*, Kayseri, Turkey, June 19-23 2008 (solicited)

Camillo F., Liberati C.: A micro-data mining approach for qualitative-emotional marketing using neuro-information, *Meeting of the Classification and Data Analysis Group of the the Italian Statistical Society (CLADAG 2007)*, University of Macerata, Italy, September, 12-14 2007 (solicited).

Camillo F., Liberati C.: Profiling a customer base through a sample survey: a data mining approach for business solution, *Annual Midwest Business Administration Association International Conference (MBAA 2007)*, Chicago, March 28-30 2007.

Camillo F., Liberati C.: The kernel approach in the future of data mining: many subjective choices in a complex landscape, *IACS-INTERFACE-IFCS workshop Knowledge Extraction and Modeling (KNEMO)*, Capri, Italy, September 4-6 2006 (solicited).

Liberati C., Camillo F.: Kernel Discriminant Analysis and Information Complexity: advanced models for micro data-mining and marketing solutions, *7th International Conference on Data, Text and Web Mining and their Business Applications and Management Information Engineering Data mining and Information Engineering*, Prague, July 11-13 2006.

Camillo F., Liberati C.: Recent issues about textual information analysis in micro-marketing: methodological suggestions and some case studies, *43th Scientific Meeting of the Italian Statistical Society (SIS 2006)*, University of Turin, June 14-16 2006 (solicited).

Camillo F., Liberati C.: e-CRM, web semantic propensity models and micro-data-mining: an application of Kernel Discriminant Analysis to the Glam on Web case, *8th International Conference on the Statistical Analysis of Textual Data (JADT 2006)*, Besançon, France, April 19- 21 2006.

Liberati C.: e-CRM, web propensity models and micro-data-mining: the Glam on Web case and new statistical methodologies, *Meeting of the Classification and Data Analysis Group of the the Italian Statistical Society (CLADAG 2005)*, University of Parma, Italy, June 6-8 2005. (solicited)

FUNDS

- 2024-2027 Member of the research team of the project entitled *Leveraging the Digital Footprint for Sustainable Futures (MADFoot)*, funded by: Agencia Estatal de Investigación (PID2023-152106OB-I00). PI: Josep Domenech. Amount: 56.250 €
- 2024-2027 Member of the research team of the project entitled *Digital footprint of SMEs in the sustainability transition*, funded by: Generalitat Valenciana (CIAICO/2023/272). PI: Josep Domenech and Ana Debón. Amount: 90.000 €
- 2023-2025 Member of the research team of the grant PRIN2022 entitled *Data Driven Innovation: Measuring its effects on Industries, Firms and Business Models*, funded by: Italian Ministry of University and Research. (2022JH3L37). PI: Roberto Fontana. Amount: 217.271 €
- 2019-2022 External Expert of the project entitled *Digital footprint, competitiveness and business demography*. Funded by: Spanish National Research Agency (AEI). (PID2019-107765RB-I00). PI: Josep Domenech. Amount: 18.000 €
- 2017 Principal Investigator of the National project entitled *Fondo per il finanziamento per le attività base di ricerca' (FABBR)*. funded by Italian Ministry of Education and Reserach. (id: 9482) Amount: 3.000 €
- 2013-2016 Member of the research team of the grant FP7 project entitled *RASTANEWS-Macro-Risk Assessment and Stabilization Policies with New Early Warning Signals*, funded European Commission. PI Patrizio Tirelli. Amount: 2.39M €
- 2011-2014 Member of the research team of the grant Ricerca Finalizzata 2009 for the project entitled *Interaction framework between patient advocacy groups and cancer centers on sarcomas, as a model for rare cancers*, funded by Italian Health Ministry (RF-2009-1551083). PI: Paolo Casali. PI Unimib Unit: Caterina Liberati (year 2014). Amount: 280.500 €

RESEARCH COLLABORATIONS

- 2022- Member of the Milano-Bicocca team responsible for producing the statistical analyses and economic-financial assessments included in the report *Sustainability of Italian listed companies* of the ESG Observatory of Sole24ore (<https://esg.ilsole24ore.com/s/1>).
- 2022-2023 Member of the Milano-Bicocca Unit that developed and implemented an analytical system for monitoring predictive algorithms. The project, titled *AISP PSD2 Open Banking*, was funded by the Consorzio per la Tutela del Credito.
- 2020-2021 Member of the Milano-Bicocca Unit that developed and implemented predictive algorithms based on transactional data. The project, titled *Progetto Analytics CTC*, was funded by the Consorzio per la Tutela del Credito.

ACADEMIC SERVICES

Refereeing activity (not complete):

Quality & Quantity (ISSN:0033-5177), Statistica Applicata (ISSN:1125-1964), Mathematics (ISSN: 2227-7390), Applied Science (E-ISSN:2076-3417), Information (ISSN:2078-2489), Review of Behavioral Finance (ISSN:1940-5979), Risks (E-ISSN:2227-9091), International Review of Financial Analysis (ISSN:1057-5219), Big Data Research (ISSN:2214-5796), Sustainability (ISSN:2071-1050), Socio-Economic Planning Sciences (ISSN:0038-0121), Economies (E-ISSN:2227-7099), Algorithms (ISSN 1999-489), Bancaria (ISSN:1594-7556), Data (ISSN: 2306-5729), Journal of Cleaner Production (ISSN: 0959-6526), Applied Stochastic Models in Business and Industry (ISSN:1524-1904), Advances in Data Analysis and Classification (ISSN: 1862-5347).

Supervision:

- 2026-2027 *Mapping Italian SMEs through Corporate Websites: a Textual and Spatial Analysis* (Post Doc project:)
- 2024-2026 *Monitoring the economic activity of the Small and Medium Enterprises through the analysis of their digital footprints* (Post Doc project: Carlo Bottai)
- 2021-2024 *Look through the website's glasses: using big data for classifying and describing Italian innovative SMEs* (Post Doc project: Carlo Bottai)
- 2020-2022 *Black-box supervised learning and empirical assessment: new perspectives in credit risk modeling.* (Ph.D. thesis Marco Repetto).
- 2014-2015 *Fabbisogni informativi dei pazienti e dei modelli di comunicazione integrata medici-associazioni-pazienti: valutazione di un prototipo nell'ambito dei tumori rari.* (Post-doc Rosa Falotico)

Other Duties

- Member of the Faculty Board of the PhD program Business for Society, University of Milano-Bicocca cycles 37th, 38th, 39th, 40th, 41th, 42th .
- 2019-2023 University Orientation Delegate for DEMS, University of Milano-Bicocca

TEACHING

Ph.D. Courses

- 2024- Quantitative Research Methods 1, Ph.D. program Business for Society (B4S), University of Milano-Bicocca (4 Hours)
- 2024- Quantitative Research Methods Lab, Ph.D. program Business for Society (B4S), University of Milano-Bicocca (6 Hours)
- 2023- Quantitative & Qualitative Methodologies (in the course Advance Research Methodologies for a New Public Administration), Ph.D. program The New Public Administration: Data and Human Resources, University of Milano-Bicocca (4 hours).
- 2021-2023 Quantitative Data Analysis, Ph.D. program Business for Society (B4S), University of Milano-Bicocca (16 Hours)

Postgraduate Courses (PC)

- 2021- Quantitative Market Analysis, PC in Economic Statistics, School of Economics and Statistics, University of Milano-Bicocca
- 2012-2020 Quantitative Market Analysis, PC in Marketing and Global Markets, School of Economics and Statistics, University of Milano-Bicocca
- 2019-2021 Statistics for Tourism, PC in Economics for Tourism, School of Economics and Statistics, University of Milano-Bicocca
- 2016-2018 Quantitative Market Analysis, PC in Economic Statistics, School of Economics and Statistics, University of Milano-Bicocca

Undergraduate Courses (UC)

- 2020- Quantitative Market Analysis, UC in Marketing and Global Markets, School of Economics and Statistics, University of Milano-Bicocca
- 2017-2020 Statistics for Economics, UC in Science of Legal Services, School of Law, University of Milano-Bicocca
- 2016-2017 Market Analysis, UC in Economic Statistics, School of Economics and Statistics, University of Milano-Bicocca
- 2013-2015 Statistics for Economics, UC in Economics and Business, School of Economics and Statistics, University of Milano-Bicocca

June, 2026