Curriculum Vitae

Helton Saulo

Personal Information

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Professional Address:
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Positions Held

- Associate Professor of Statistics, University of Brasilia, Brazil, January 2025 – Onwards.
- Assistant Professor of Statistics, University of Brasilia, Brazil, March 2017 – January 2025.
- Affiliated Assistant Professor of Economics, Federal University of Pelotas, Brazil, February 2024 – Onwards.
- Post-doctoral Fellow, University of Texas at Arlington, March 2023 – August 2023.
- Post-doctoral Fellow, McMaster University, August 2019 – February 2020
- Post-doctoral Fellow, McMaster University, August 2014 – July 2015.
- Assistant Professor of Statistics, Federal University of Goias, Brazil, November 2013 – March 2017.

Editorial Boards

- Associate Editor, Journal of Applied Statistics.
- Associate Editor, Journal of Statistical Theory and Practice.
- Associate Editor, Communications in Statistics – Theory and Methods.

- Associate Editor, Communications in Statistics - Simulation and Computation.
- Associate Editor, Communications in Statistics: Case Studies, Data Analysis and Applications.
- Associate Editor, Chilean Journal of Statistics.

Education

- Ph.D. in Economics, Federal University of Rio Grande do Sul, Brazil, 2010-2013, under the supervision of Prof. Flavio A. Ziegelmann and Prof. Victor Leiva. The thesis is titled *Essays on Birnbaum-Saunders Models*.
- Visiting doctoral student at McMaster University, Canada, 2013, under the supervision of Prof. Narayanaswamy Balakrishnan.
- M.Sc. in Statistics, Federal University of Pernambuco, Brazil, 2008-2010.
- B.A. in Economics, Catholic University of Brasilia, Brazil, 2004-2007.
- Technician Diploma in Electrotechnics. Technical School of Brasilia, Brazil, 2002-2004.

Postdoc

- Post-doctoral Fellow. McMaster University, Hamilton, Canada, 2014-2015. Scholarship from: CAPES. Areas: Computational Statistics, Mathematical Statistics and Econometrics. Supervisor: Professor Narayanaswamy Balakrishnan.
- Post-doctoral Fellow. McMaster University, Hamilton, Canada, 2019-2020. Scholarship from: FAP/DF. Areas: Financial Econometrics, Computational Statistics and Statistical Modeling. Supervisor: Professor Narayanaswamy Balakrishnan.
- Post-doctoral Fellow. University of Texas at Arlington, Arlington, USA, 2023. Scholarship from: CNPq. Areas: Computational Statistics, Mathematical Statistics and Econometrics. Supervisor: Professor Suvra Pal.

Fellowships, Awards and Grants

- Editor of Distinction - Editorial Contribution Award (Awarded for meticulous assessment of submissions and rigorous management of the peer review process), Springer Nature, 2025.
- Top Cited Article 2022-2023: "Log-symmetric quantile regression models", Statistica Neerlandica, Wiley.
- 3rd place, International Association for Statistical Computing (IASC) Data Analysis Competition 2023.
- Top Cited Article 2021-2022: "Log-symmetric quantile regression models", Statistica Neerlandica, Wiley.

- Top Cited Article 2021-2022: "Birnbaum-Saunders quantile regression and its diagnostics with application to economic data", Applied Stochastic Models in Business and Industry, Wiley.
- Top Cited Article 2021-2022: "A new BISARMA time series model for forecasting mortality using weather and particulate matter data", Journal of Forecasting, Wiley.
- Top Cited Article 2020-2021: "Log-symmetric quantile regression models", Statistica Neerlandica, Wiley.
- Top Cited Article 2020-2021: "Birnbaum-Saunders quantile regression and its diagnostics with application to economic data", Applied Stochastic Models in Business and Industry, Wiley.
- Top Cited Article 2020-2021: "A new BISARMA time series model for forecasting mortality using weather and particulate matter data", Journal of Forecasting, Wiley.
- Research productivity grant, level 2 - CNPq
- Top Cited Article 2019-2020: "Log-symmetric regression models: information criteria and application to movie business and industry data with economic implications", Applied Stochastic Models in Business and Industry, Wiley.
- Top Downloaded Paper 2018-2019: "Discussion of Birnbaum-Saunders distribution: A review of models, analysis, and applications by N. Balakrishnan and Debasis Kundu", Applied Stochastic Models in Business and Industry, Wiley.
- Top Downloaded Paper 2018-2019: "Log-symmetric regression models: information criteria and application to movie business and industry data with economic implications", Applied Stochastic Models in Business and Industry, Wiley.
- Recipient of postdoctoral scholarship, FAP/DF, Brazil, 2019–2020.
- Certificate of Outstanding Contribution in Reviewing, Computational Statistics & Data Analysis, 2015.
- Recipient of postdoctoral scholarship, Ministry of Education, Brazil, 2014–2015.
- Recipient of undergraduate scholarship for Optimal Monetary Policy studies, Ministry of Science and Technology, Brazil, 2005–2007.
- Recipient of graduate scholarship for Master's Program, Ministry of Science and Technology, Brazil, 2008–2010.
- Recipient of graduate scholarship for Doctoral Program, Ministry of Education, Brazil, 2010–2014.
- Travel Grant. Grant from UFRGS to present a paper at the XXXIV Brazilian Meeting of Econometrics in Porto de Galinhas (Brazil) in December 2012.
- Pre-doctoral Research Fellow for Studies Abroad, Ministry of Science and Technology, Brazil, 2013.

Teaching Experience

Federal University of Pelotas, Brazil, 2024-present:

- Statistics (graduate)

University of Brasilia, Brazil, 2017-present:

- Computational Econometrics (graduate);
- Computational Modeling (graduate);
- Computational Statistics (undergraduate);
- Computational Techniques in Statistics (graduate);
- Research Methods in Statistics (graduate);
- Computational Modeling (undergraduate).
- Probability and Statistics (undergraduate);
- Statistical Computing 2 (undergraduate);
- Statistical Quality Control (undergraduate);
- Applied Statistics (undergraduate).

Federal University of Goias, Brazil, 2014-2017:

- Computational Statistics II (graduate);
- Computational Statistics II (undergraduate);
- Time Series (undergraduate);
- Introduction to Biostatistics with R (undergraduate).
- Econometrics (graduate);
- Topics in Statistics (undergraduate).
- Computational Statistics I (undergraduate).

Major Research Interests

- Financial Econometrics
- Statistical Learning
- Computational Statistics

Publications

Journal articles

1. Equilibrium, adverse selection, and statistical distributions. Jointly with J. Leao. **Economics Bulletin**, 31, 2066-2074, 2011.
2. The Kumaraswamy Birnbaum Saunders distribution. Jointly with J. Leao and M. Bourguignon. **Journal of Statistical Theory and Practice**, 1, 1-13, 2012.
3. Generalized Birnbaum-Saunders kernel density estimators and an analysis of financial data. Jointly with C. Marchant, K. Bertin, and V. Leiva. **Computational Statistics and Data Analysis**, 63, 1-15, 2013.

4. A nonparametric method for estimating asymmetric densities based on skewed Birnbaum-Saunders distributions applied to environmental data. Jointly with V. Leiva, C. Marchant, and F. Ziegelmann. **Stochastic Environmental Research and Risk Assessment**, 27, 1479-1491, 2013.
5. Fiscal and monetary policy interactions: a game theory approach. Jointly with L. Rego and J. Divino. **Annals of Operations Research**, 206, 341-366, 2013.
6. On some properties of the beta Inverse Rayleigh distribution. Jointly with J. Leao, M. Bourguignon, L. Rego, R. Cintra and G. Cordeiro. **Chilean Journal of Statistics**, 4, 113-133, 2013.
7. Estimação por máxima verossimilhança dos parâmetros da distribuição Birnbaum-Saunders usando C, Ox e R. Jointly with M. Santos-Neto, J. Leao and J. Vasconselos. **Revista Brasileira de Estatística**, 74, 7-19, 2013.
8. Capability indices for Birnbaum-Saunders processes applied to electronic and food industries. Jointly with V. Leiva, C. Marchant, M. Aslam and F. Rojas. **Journal of Applied Statistics**, 41, 1881-1902, 2014.
9. A family of autoregressive conditional duration models applied to financial data. Jointly with V. Leiva, J. Leao and C. Marchant. **Computational Statistics and Data Analysis**, 79, 175-191, 2014.
10. A criterion for environmental assessment using Birnbaum-Saunders attribute control charts. Jointly with V. Leiva, C. Marchant and F. Ruggeri. **Environmetrics**, 26, 463-476, 2015.
11. A new Pareto-type distribution with applications in reliability and income data. Jointly with M. Bourguignon and R. Fernandez. **Physica. A**, 457, 166-175, 2016.
12. Constrained test in linear models with multivariate power exponential distribution. Jointly with J. Leao, F. Cysneiros and N. Balakrishnan. **Computational Statistics**, 1, 1-24, 2016.
13. A method for location recommendation via skyline query tolerant to noised georeferenced data. Jointly with W. B. Oliveira, S. S.T. Oliveira, V. J. S. Rodrigues and K. V. Cardoso. **Brazilian Journal of Cartography**, 68, 1-10, 2016.
14. A methodology based on the Birnbaum-Saunders distribution for reliability analysis applied to nano-materials. Jointly with V. Leiva, F. Ruggeri and J. Vivanco. **Reliability Engineering and Systems Safety**, 157, 192-201, 2017.
15. Birnbaum-Saunders frailty regression models: Diagnostics and application to medical data. Jointly with J. Leao, V. Leiva and V. Tomazella. **Biometrical Journal**, 59, 251-314, 2017.
16. On a new class of skewed Birnbaum-Saunders models. Jointly with N. Balakrishnan and J. Leao. **Journal of Statistical Theory and Practice**, 11, 573-593, 2017.
17. On moment-type estimators for a class of log-symmetric distributions. Jointly with N. Balakrishnan, M. Bourguignon and X. Zhu. **Computational Statistics**, 32, 1339-1355, 2017.
18. Estimation in generalized bivariate Birnbaum-Saunders models. Jointly with N. Balakrishnan, X. Zhu, J. F.B. Gonzales and J. Leao. **Metrika**, 80, 427-453, 2017.

19. On log-symmetric duration models applied to high frequency financial data. Jointly with J. Leao. **Economics Bulletin**, 37, 1089-1097, 2017.
20. Estimation for a family of skew scale-mixture distributions. Jointly with J. Leao, N. Balakrishnan and V. Tomazella. **Chilean Journal of Statistics**, 8, 45-64, 2017.
21. Estimating the optimal time for a road concession contract in Brazil. Jointly with D. Pivatto, R. Fernandez and A. Carraro. **International Journal of Economics and Finance**, 9, 44-53, 2017.
22. A new model selection criterion for partial least squares regression. Jointly with J. L. Martinez, H. B. Escobar and J. Leao. **Chemometrics and Intelligent Laboratory Systems**, 169, 64-78, 2017.
23. Public-private partnership contractual design: a computational model of the moral hazard with lotteries. Jointly with R. Fernandez, A. Carraro, F. Tourrucoo and R. Hillbrecht. **Public Organization Review**, 18, 39-51, 2018.
24. On a new approach to estimate the shape parameter of the inverse Gaussian distribution. Jointly with M. Bourguignon. **South Africa Statistical Journal**, 52, 15-27, 2018.
25. On a tobit-Birnbaum-Saunders model with an application to medical data. Jointly with M. DeSousa, V. Leiva and Paulo Scalco. **Journal of Applied Statistics**, 45, 932-955, 2018.
26. A survival model with Birnbaum–Saunders frailty for uncensored and censored cancer data. Jointly with J. Leao, V. Leiva and V. Tomazella. **Brazilian Journal of Probability and Statistics**, 32, 707-729, 2018.
27. Incorporation of frailties into a cure rate regression model and its diagnostics and application to melanoma data. Jointly with J. Leao, V. Leiva and V. Tomazella. **Statistics in Medicine**, 37, 4421-4440, 2018.
28. A new estimator for the covariance of the PLS coefficients estimator with applications to chemical data. Jointly with J. L. Martínez, V. Leiva, F. Ruggeri and G. C. Arteaga. **Journal of Chemometrics**, 32, e3069, 2018.
29. Monitoramento da qualidade do ar usando cartas de controle por atributos baseadas na distribuição Birnbaum-Saunders. Jointly with G. Pires. **Revista Brasileira de Estatística**, 77, 7-32, 2019.
30. Discussion of Birnbaum-Saunders distribution: A review of models, analysis and applications. Jointly with J. Leao and M. Santos-Neto. **Applied Stochastic Models in Business and Industry**, 35, 118-121, 2019.
31. Theoretical results on the discrete Weibull distribution of Nakagawa & Osaki. Jointly with R. Vila and E. Y. Nakano. **Statistics**, 53, 339-363, 2019.
32. Some simple estimators for the two-parameter gamma distribution. Jointly with M. Bourguignon, X. Zhu and N. Balakrishnan. **Communications in Statistics - Simulation and Computation**, 48, 2425-2437, 2019.
33. Log-symmetric regression models: information criteria, application to movie business and industry data with economic implications. Jointly with M. Ventura, V. Leiva and S. Monsueto. **Applied Stochastic Models in Business and Industry**, 35, 963-977, 2019.

34. On the existence and uniqueness of the maximum likelihood estimates of parameters of Laplace Birnbaum-Saunders distribution based on Type-I, Type-II and hybrid censored samples. Jointly with X. Zhu and N. Balakrishnan. **Metrika**, 82, 759-778, 2019.
35. Birnbaum-Saunders autoregressive conditional duration models applied to high-frequency financial data. Jointly with J. Leao, V. Leiva and R. G. Aykroyd. **Statistical Papers**, 60, 1605-1629, 2019.
36. Rendimento e desigualdade nas regiões metropolitanas brasileiras. Jointly with D. R. Cunha , L. A. Lavoratto and D. T. G. N. Maciel. **Brazilian Journal of Business Economics**, 19, 39-57, 2019.
37. Spatial operations on uncertain positional data. Jointly with W. B. Oliveira, S. S. T. Oliveira, V. J. S. Rodrigues and K. V. Cardoso . **Journal of Information and Data Management**, 10, 185-205, 2019.
38. A general family of autoregressive conditional duration models applied to high-frequency financial data. Jointly with D. R. Cunha, R. Vila and R. N. Fernandez. **Journal of Risk and Financial Management**, 13, 45, 2020.
39. A bimodal gamma distribution: Properties, regression model and applications. Jointly with R. Vila, L. Ferreira, F. Prataviera and E. M. M. Ortega. **Statistics**, 54, 469-493, 2020.
40. On asymmetric regression models with allowance for temporal dependence. Jointly with R. Vila, F. Vilca and J. L. Martínez. **Journal of Statistical Theory and Practice**, 14, 40, 2020.
41. Birnbaum-Saunders quantile regression models with application to spatial data. Jointly with L. Sanchez, V. Leiva and M. Galea. **Mathematics**, 8, 1000, 2020.
42. Estimando o tempo ótimo de um contrato de concessão: Um estudo de caso para as rodovias gaúchas. Jointly with R. N. Fernandez, D. Pivatto, E. Freitas and A. Carraro. **Revista do Serviço Público**, 71, 245-273, 2020.
43. On a bimodal Birnbaum-Saunders distribution with applications to lifetime data. Jointly with R. Vila, J. Leao, M. Naveed and M. Santos-Neto. **Brazilian Journal of Probability and Statistics**, 34, 495-518, 2020.
44. Global and local diagnostic analytics for a geostatistical model based on a new approach to quantile regression. Jointly with V. Leiva, L. Sanchez and M. Galea. **Stochastic Environmental Research and Risk Assessment**, 34, 1457-1471, 2020.
45. Birnbaum-Saunders regression models: A comparative evaluation of three approaches. Jointly with A. Dasilva, R. Dias, V. Leiva and C. Marchant. **Journal of Statistical Computation and Simulation**, 90, 2552-2570, 2020.
46. On mean-based bivariate Birnbaum-Saunders distributions: Properties, inference and application. Jointly with J. Leão, R. Vila, V. Leiva and V. Tomazella. **Communications in Statistics - Theory and Methods**, 49, 6032-6056, 2020.
47. On a new mixture-based regression model: simulation and application to data with high censoring. Jointly with M. Desousa, M. Santos-Neto and V. Leiva. **Journal of Statistical Computation and Simulation**, 90, 2861-2877, 2020.
48. Catastrophic health expenditure and multimorbidity among older adults in Brazil. Jointly with G. M. Bernardes, R. N. Fernandez, M. F. Lima-Costa and F. B. Andrade.

Revista de Saúde Pública, 54, 125, 2020.

49. A class of asymmetric regression models for left-censored data. Jointly with J. Leao, J. Nobre and N. Balakrishnan. **Brazilian Journal of Probability and Statistics**, 35, 62-84, 2021.
50. A bivariate fatigue-life regression model and its application to fracture of metallic tools. Jointly with J. Leao, V. Leiva, R. Vila and V. Tomazella. **Brazilian Journal of Probability and Statistics**, 35, 119-137, 2021.
51. A new BISARMA time series model for forecasting mortality using weather and particulate matter data. Jointly with V. Leiva, R. Souza, R. G. Aykroyd and R. Vila. **Journal of Forecasting**, 40, 346-364, 2021.
52. Birnbaum-Saunders quantile regression and its diagnostics with application to economic data. Jointly with L. Sanchez, V. Leiva and M. Galea. **Applied Stochastic Models in Business and Industry**, 37, 53-73, 2021.
53. Survival model induced by discrete frailty for modeling of lifetime data with long-term survivors and change-point. Jointly with V. Cancho, G. Barriga and J. Leao. **Communications in Statistics - Theory and Methods**, 50, 1161-1172, 2021.
54. VES-13 role to identify limited life expectancy in older adults in primary care settings. Jointly with D. L. Assis, V. O. Chagas, C. K. Suemoto, A. N. C. Santana. **Revista da Escola de Enfermagem da USP**, 55, e03743, 2021.
55. The negative binomial beta prime regression model with cure rate: application with a melanoma dataset. Jointly with J. Leão, M. Bourguignon and M. Santos-Neto. **Journal of Statistical Theory and Practice**, 15, 63, 2021.
56. On a family of discrete log-symmetric distributions. Jointly with R. Vila, L. Paiva, N. Balakrishnan and M. Bourguignon. **Journal of Statistical Theory and Practice**, 15, 67, 2021.
57. Estimating the covariance matrix of the coefficient estimator in multivariate partial least squares regression with chemical applications. Jointly with J. L. Martínez, V. Leiva and S. Liu. **Chemometrics and Intelligent Laboratory Systems**, 214, 104328, 2021.
58. Bayesian inference for the Birnbaum-Saunders autoregressive conditional duration model with application to high-frequency financial data. Jointly with F. Nascimento and J. Leao. **Communications in Statistics - Case Studies and Data Analysis**, 7, 215-228, 2021.
59. Modeling mortality based on pollution and temperature using a new Birnbaum–Saunders autoregressive moving average structure with regressors and related-sensors data. Jointly with R. Vila, R. Souza, V. Leiva and R. G. Aykroyd. **Sensors**, 21, 6518, 2021.
60. Bayesian inference for the log-symmetric autoregressive conditional duration model. Jointly with J. Leao, R. Paixão and T. Leao. **Annals of the Brazilian Academy of Sciences**, 93, e20190301, 2021.
61. Effect of education and multimorbidity on mortality among older adults: findings from the health, well-being and ageing cohort study (SABE). Jointly with G. M. Bernardes, J. L. F. Santos, D. D. Da Cruz Teixeira, Y. A. De Oliveira Duarte, and F. B. Andrade. **Public Health**, 201, 69-74, 2021.

62. A new quantile regression model and its diagnostic analytics for a Weibull distributed response with applications. Jointly with L. Sanchez, V. Leiva, C. Marchant and J. M. Sarabia. **Mathematics**, 9, 2768, 2021.
63. On some properties of the bimodal normal distribution and its bivariate version. Jointly with R. Vila and J. Roldan. **Chilean Journal of Statistics**, 12, 125-144, 2021.
64. Desenho contratual de parcerias público-privadas para hospitais: algumas notas teóricas. Jointly with R. N. Fernandez and A. Carraro. **Economic Analysis of Law Review**, 12, 200-2018, 2021.
65. Catastrophic health expenditures: analysis of the association with socioeconomic conditions in Minas Gerais, Brazil. Jointly with J. B. Macedo, A. C. Boing, J. M. Andrade, R. N. Fernandez and F. B. Andrade. **Ciencia & Saude Coletiva**, 27, 325-334, 2022.
66. Log-symmetric quantile regression models. Jointly with A. Dasilva, V. Leiva, L. Sánchez and H. L. Fuente-Mella. **Statistica Neerlandica**, 76, 124-163, 2022.
67. On a log-symmetric quantile tobit model applied to female labor supply data. Jointly with D. R. Cunha and J. A. Divino. **Journal of Applied Statistics**, 49, 4225-4253, 2022.
68. Regressão quantílica na análise da letalidade da COVID-19 nos municípios do estado de São Paulo. Jointly with G. T. Alves, R. Fernandez, L. Correia and J. Fiorucci. **Revista Brasileira de Estatística**, 80, 75-91, 2022.
69. On a quantile autoregressive conditional duration model. Jointly with N. Balakrishnan and R. Vila. **Mathematics and Computers in Simulation**, 203, 425-448, 2023.
70. Bivariate symmetric Heckman models and their characterization. Jointly with R. Vila, S. S. Cordeiro and V. Leiva. **Journal of Multivariate Analysis**, 105097, 2023.
71. Modeling income data via new parametric quantile regressions: formulation, computational statistics, and application. Jointly with R. Vila, G. V. Borges, M. Bourguignon, V. Leiva and C. Marchant. **Mathematics**, 11, 448, 2023.
72. Bootstrap control charts for quantiles based on log-symmetric distributions with applications to monitoring of reliability data. Jointly with V. Leiva, R. A. Santos, C. Marchant and Y. Lio. **Quality and Reliability Engineering International**, 39, 1-24, 2013.
73. On a new extreme value distribution: characterization, parametric quantile regression, and application to extreme air pollution events. Jointly with R. Vila, V. L. Bittencourt, V. Leiva and G. Christakos. **Stochastic Environmental Research and Risk Assessment**, 37, 1119–1136, 2023.
74. The social functioning related to substance use disorder before and after treatment in a CAPS-AD in Brazil: a longitudinal study with Occupational Therapy contributions. Jointly with S. Moreira; E. Nakano, K. Oliveira, K. Miranda, R. Fonseca and A. Gallassi. **Brazilian Journal Of Occupational Therapy**, 31, e3476, 2023.
75. On a length-biased Birnbaum-Saunders regression model applied to meteorological data. Jointly with K. L. P. Oliveira, B. S. Castro and R. Vila. **Communications in Statistics - Theory and Methods**, 52, 6916-6935, 2023.
76. A bivariate approach to the Mincerian earnings equation. Jointly with D. R. Cunha, S. Monsueto and J. A. Divino. **Revista Brasileira de Economia**, 77, e082023, 2023.

77. Bivariate log-symmetric models: distributional properties, parameter estimation and an application to public spending data. Jointly with R. Vila, N. Balakrishnan and A. Protazio. **Brazilian Journal of Probability and Statistics**, 37, 619-642, 2023.
78. Theoretical results and modeling under the discrete Birnbaum-Saunders distribution. Jointly with F. Vilca, R. Vila, J Leão and L. Sánchez. **Communications in Statistics - Theory and Methods**, 53, 1745-1759, 2024.
79. Assessing the impact of copula selection on reliability measures of type P(X<Y) with generalized extreme value marginals. Jointly with R. K. Lima, F. S. Quintino, T. A. Fonseca, L. C. S. M. Ozelim, P. N. Rathie. **Modelling**, 5, 180-200, 2024.
80. An upper bound and a characterization for Gini's mean difference based on correlated random variables. Jointly with R. Vila and N. Balakrishnan. **Statistics & Probability Letters**, 207, 110032, 2024.
81. Parametric and partially linear regressions for agricultural economy data. Jointly with J. C. S. Vasconcelos, G. M. Cordeiro and E. M. M. Ortega. **Communications in Statistics - Theory and Methods**, 53, 2067-2091, 2024.
82. On the stress-strength reliability of transmuted GEV random variables with applications to financial assets selection. Jointly with M. Oliveira, F. S. Quintino, D. Aguiar, P. N. Rathie, T. A. Fonseca , and L. C. S. M. Ozelim. **Entropy**, 26, 441, 2024.
83. The zero-adjusted log-symmetric quantile regression model applied to extramarital affairs data. Jointly with D. R. Cunha and J. A. Divino. **Computational Economics**, 63, 2087–2111, 2024.
84. Parametric quantile beta regression model. Jointly with M. Bourguignon and D. I. Gallardo. **International Statistical Review**, 92, 106–129, 2024.
85. Family of bivariate distributions on the unit square: theoretical properties and applications. Jointly with R. Vila, N. Balakrishnan and P. Zörnig. **Journal of Applied Statistics**, 51, 1729-1755, 2024.
86. Parametric quantile autoregressive moving average models with exogenous terms. Jointly with A. Dasilva, R. Vila, J. A. Fiorucci and S. Pal. **Statistical Papers**, 65, 1613–1643, 2024.
87. Unveiling patterns and trends in research on cumulative damage models for statistical and reliability analyses: Bibliometric and thematic explorations with data analytics. Jointly with V. Leiva, C. Castro and R. Vila. **Chilean Journal of Statistics**, 15, 81–109, 2024.
88. Fatores associados à evasão da Universidade Federal de Goiás: Uma análise por meio de técnicas de sobrevivência. Jointly with N. Damasceno, M. Piscoya, R. Fernandez and A. Vasconcelos. **SINERGIA**, 28, 37-57, 2024.
89. Novel closed-form point estimators for a weighted exponential family derived from likelihood equations. Jointly with R. Vila and E. Nakano. **Stat**, 13, e723, 2024.
90. Bivariate log-symmetric regression models applied to newborn data. Jointly with R. Vila and R. Souza. **Symmetry**, 16, 1315, 2024.
91. Unit-log-symmetric models: Characterization, statistical properties and their applications to analyzing an internet access data. Jointly with R. Vila, N. Balakrishnan and P. Zörnig. **Quality & Quantity**, 58, 4779–4806, 2024.

92. Scale-mixture Birnbaum-Saunders quantile regression models applied to personal accident insurance data. Jointly with A. Dasilva, R. Vila and S. Pal. **Computational and Applied Mathematics**, 44, 80, 2025.
93. A new unit-bimodal distribution based on correlated Birnbaum-Saunders random variables. Jointly with R. Vila, F. Quintino and P. Zörnig. **Computational and Applied Mathematics**, 44, 83, 2025.
94. Parametric quantile autoregressive conditional duration models with application to intraday value-at-risk forecasting. Jointly with S. Pal, R,. Souza, R. Vila and A. Dasilva. **Journal of Forecasting**, 44, 589-605, 2025.
95. A semiparametric accelerated failure time based mixture cure tree. Jointly with W. Aselisewine and S. Pal. **Journal of Applied Statistics**, 52, 1177-1194, 2025.
96. Bivariate extended skew-elliptical Heckman models: Mathematical characterization and an application in economic sciences. Jointly with R. Vila, C. Marchant, C. Castro and V. Leiva. **Computational and Applied Mathematics**, 44, 236, 2025.
97. Closed-form solutions for parameter estimation in exponential families based on maximum a posteriori equations. Jointly with R. Vila and E. Nakano. **Chilean Journal of Statistics**, 16, 22–35, 2025.
98. Multiscale Stochastic Models for Bitcoin: Fractional Brownian Motion and Duration-Based Approaches. Jointly with A. Carvalho, F.Quintino, H. Saulo, L. C. S. M. Ozelim, T. A. Fonseca, and N. Rathie. **FinTech**, 4, 51, 2025.
99. A family of multivariate extended skew-G-elliptical distributions. Jointly with R. Vila, L. Santos, J. Monterios and F. Quintino. **Brazilian Journal of Probability and Statistics**, 39, 248-271, 2025.
100. Bias in Gini coefficient estimation for gamma mixture populations. Jointly with R. Vila. **Statistical Papers**, 66, 146, 2025.
101. An unbiased estimator of a novel extended mth Gini index for gamma distributed populations. Jointly with R. Vila. **Journal of Computational and Applied Mathematics**, 482, 117320, 2026.
102. Moment-type estimators for a weighted exponential family. Jointly with R. Vila. To appear in **Communications in Statistics – Theory and Methods**.
103. Forecasting aggregated hourly electricity demand in Southeast and Midwest Brazil. Jointly with M. I. Machado, J. A. Fiorucci, and J. M. Sampaio. To appear in **Energy Systems**.
104. The mth Gini index estimator: Unbiasedness for gamma populations. Jointly with R. Vila. To appear in **The Journal of Economic Inequality**.
105. A new partially varying-coefficient model and its diagnostic analysis for a reparameterized Birnbaum-Saunders distribution with applications. Jointly with G. Ibacache-Pulgar, M. Osorio and C. Marchant. To appear in **Journal of Applied Statistics**.
106. On the bias of the Gini coefficient estimator for zero-truncated Poisson distributions. Jointly with R. Vila. To appear in **Mathematical Methods of Statistics**.

Working Papers

107. Closed-form estimators for an exponential family derived from likelihood equations. Jointly with R. Vila and E. Nakano.
108. Bivariate autoregressive conditional models: A new method for jointly modeling duration and number of transactions of irregularly spaced financial data. Jointly with S. Pal and R. Vila.
109. General Heckman type models for two-dimensional asymmetric distributions. Jointly with R. Vila, C. Castro, V. Leiva and C. Marchant.
110. Closed-form formulas for the biases of the Theil and Atkinson index estimators in Gamma distributed populations. Jointly with R. Vila.
111. Unbiased estimation in new Gini index extensions under gamma distributions. Jointly with R. Vila.
112. Novel measures and estimators of income inequality. Jointly with R. Vila.
113. Biases in Theil and Atkinson index estimation for gamma mixture populations. Jointly with R. Vila and J. Assis.
114. A unified method for generating closed-form point estimators for exponential families: An example with the beta distribution applied to proportions of land used for farming. Jointly with R. Vila.
115. Closed-form parameter estimation for the bivariate gamma distribution: New approaches. Jointly with R. Vila.
116. Constructing new probability distributions on the unit interval. Jointly with R. Vila, P. Matos and S. Dutta.
117. On the bias of the Hoover index estimator: Results for the gamma distribution. Jointly with R. Vila.

Book Chapters

118. Monitoring environmental risk by a methodology based on control charts. Jointly with V. Leiva and F. Ruggeri. In **Risk Assessment Challenges: Theory and Practice** (Eds. C. Kitsos, T.A. Oliveira, S. Gulati and S. Rigas), Springer, 2015.
119. Environmental applications based on Birnbaum-Saunders models. Jointly with V. Leiva. In **Mathematical and Statistical Applications in Life Sciences and Engineering** (Eds. M. R. Adhikari, Y. P. Chaubey, and A. Adhikari), Springer, 2017.
120. Statistical quality control and reliability analysis using the Birnbaum-Saunders distribution with industrial applications. Jointly with V. Leiva, C. Marchant, F. Ruggeri, H. Saulo. In **Statistical Quality Technologies: Theory and Practice** (Eds. Y. Lio, H. Keung, T. Ng, T-R. Tsai and D-G. Chen), Springer, 2019.
121. Multivariate methods to monitor the risk of critical episodes of environmental contamination using an asymmetric distribution with data of Santiago, Chile. Jointly with C. Marchant, V. Leiva and R. Vila. In **Risk, Reliability and Sustainable Remediation in the Field of Civil and Environmental Engineering** (Eds. T. Roshni, P. Samui, D. T. Bui, D. Kim, R. Khatibi), Elsevier, 2022.

Professional Presentations

1. XXXIV Brazilian Meeting of Econometrics, Brazil, December 2012 ("Fiscal and monetary policy interactions: a game theoretical approach").
2. Department of Statistics, Federal University of Piaui, Brazil, January 2013 ("Nonparametric kernel density estimation").
3. Department of Mathematics and Statistics, McMaster University, Canada, March 2013 ("A nonparametric method for estimating asymmetric densities based on skewed Birnbaum-Saunders distributions").
4. Department of Mathematics and Statistics, McMaster University, Canada, November 2014 ("A family of autoregressive conditional duration models applied to financial data").
5. Inter-institutional program of Graduate Studies in Statistics, UFSCar-USP, Brazil, November 2015 ("On Birnbaum-Saunders autoregressive conditional duration models applied to high frequency financial data'').
6. II International Workshop on Statistical Models for Business, Engineering and Sciences, Universidad Adolfo Ibanes, Chile, October 2015 ("Influence diagnostics in Birnbaum-Saunders autoregressive conditional duration models with a financial application'').
7. Department of Statistics, University of Brasilia, Brazil, May 2016 ("On mean/median-based Birnbaum-Saunders autoregressive conditional duration models and their diagnostics and application'').
8. 15th Brazilian School of Regression Models, Brazil, March 2017 ("A Birnbaum-Saunders regression model for censored data'').
9. Institute of Mathematics and Statistics, Federal University of Goias, Brazil, June 2017 ("Asymmetric autoregressive conditional duration models applied to high-frequency financial data'').
10. 5th Workshop on Survival Analysis and Applications, Brazil, February 2018 ("Log-symmetric regression models for left-censored data'').
11. 3rd Goias Meeting on Probability and Statistics, Brazil, March 2018 ("Monte Carlo methods in inference and resampling'').
12. 16th Brazilian School of Regression Models, Brazil, March 2019 ("Log-symmetric regression models with allowance for correlated errors applied to mortality data'').
13. Primer Webinar Ciencias Básicas Aplicadas, Colombia, August 2020 ("On a quantile autoregressive conditional duration model applied to high-frequency financial data'').
14. Joint Statistical Meetings, USA, August 2021 ("On a quantile autoregressive conditional duration model applied to high-frequency financial data'').
15. Department of Economics, Federal University of Pelotas, Brazil, November 2021 ("On a quantile autoregressive conditional duration model applied to high-frequency financial data'').
16. Department of Statistics, Federal University of Rio de Janeiro, Brazil, November 2021 ("Quantile autoregressive conditional duration models'').
17. Department of Statistics, Federal University of Minas Gerais, Brazil, December 2021 ("Quantile autoregressive conditional duration models'').

18. XLVI Jornadas Nacionales de Estadística, Chile, October 2022 ("On a quantile duration model applied to high-frequency financial data'').

Journal Refereeing

1. Computational Statistics & Data Analysis
2. Stochastic Environmental Research and Risk Assessment
3. Chilean Journal of Statistics
4. Economics Bulletin
5. Ciência e Natura
6. Revstat Statistical Journal
7. Journal of Applied Statistics
8. Revista Brasileira de Biometria
9. Emerging Markets Finance and Trade
10. Communications in Statistics. Simulation and Computation
11. Communications in Statistics. Theory and Methods
12. Brazilian Journal of Business Economics
13. Pakistan Journal of Statistics and Operation Research
14. Applied Stochastic Models in Business and Industry
15. Statistics,Optimization & Information Computing
16. Mathematics and Computers in Simulation
17. International Journal of Management Science and Engineering Management
18. Applied Mathematical Modelling
19. Annals of the Brazilian Academy of Sciences
20. IEEE Transactions on Reliability
21. São Paulo Journal of Mathematical Sciences
22. Medical Hypotheses
23. American Journal of Mathematical and Management Sciences
24. Communications for Statistical Applications and Methods
25. Statistics in Transition New Series
26. Sankhya B
27. Stats
28. Entropy
29. International Journal of Environmental Research and Public Health
30. STATISTICA
31. BMC Medical Research Methodology
32. Colombian Journal of Statistics
33. The American Statistician
34. Applied Economics
35. Journal of Contemporary Administration
36. Journal of Statistical Theory and Applications
37. Statistica Neerlandica

38. Stat
39. Environmetrics
40. PLOS ONE
41. Mathematical Methods In the Applied Sciences
42. Statistical Methods in Medical Research
43. Australian & New Zealand Journal of Statistics
44. Journal of Computational and Applied Mathematics
45. Computational Economics
46. Ecological Informatics
47. Empirical Economics
48. Statistics & Probability Letters
49. Alexandria Engineering Journal
50. Journal of the Royal Statistical Society: Series A

Postdoctoral Supervision

1. **Mario Ernesto Piscoya Diaz** (2025).
   Postdoctoral Supervision.
   Institution: University of Brasília.

Graduate Supervision

1. **Mário Fernando de Sousa**. M.Sc. in Economics (2016).
   Title: *Two Essays on Birnbaum-Saunders Regression Models for Censored Data.*
   Institution: Federal University of Goiás.
2. **Leandro Valerio Silva**. M.Sc. in Economics (2017).
   Title: *Control Charts for Monitoring Tax Revenue.*
   Institution: Federal University of Goiás.
3. **Douglas Pivato** (co-supervisor). M.Sc. in Economics (2017).
   Title: *Estimating the Optimal Time of a Concession Contract: Analysis of the Projects of the Third Stage of the Federal Highway Concession Program.*
   Institution: Federal University of Pelotas.
4. **Danúbia Rodrigues da Cunha** (co-supervisor). M.Sc. in Economics (2018).
   Title: *Bivariate Regression Models: An Application to Mincerian Earnings Equations.*
   Institution: Federal University of Goiás.
5. **Marcelo dos Santos Ventura**. M.Sc. in Economics (2018).
   Title: *Monte Carlo Simulation Studies in Log-Symmetric Regression Models.*
   Institution: Federal University of Goiás.
6. **Rubens Batista de Souza**. M.Sc. in Statistics (2018).
   Title: *Birnbaum-Saunders Time Series Models.*
   Institution: University of Brasília.

7. **Regina dos Santos Resende Fortes**. M.Sc. in Statistics (2020).
   Title: *Birnbaum-Saunders Survival Model with Spatial Frailty*.
   Institution: University of Brasília.
8. **Leonardo de Sousa Paiva**. M.Sc. in Statistics (2020).
   Title: *On a New Family of Discrete Distributions*.
   Institution: University of Brasília.
9. **Alan da Silva**. M.Sc. in Statistics (2020).
   Title: *Quantile Regression with Asymmetric Distributions*.
   Institution: University of Brasília.
10. **Ana Lívia Protázio Sá** (co-supervisor). M.Sc. in Statistics (2022).
    Title: *Bivariate Log-Symmetric Models: Theoretical Properties and Parameter Estimation*.
    Institution: University of Brasília.
11. **Shayane dos Santos Cordeiro**. M.Sc. in Statistics (2022).
    Title: *Symmetric Generalized Heckman Models*.
    Institution: University of Brasília.
12. **Giovanna Valadares Borges**. M.Sc. in Statistics (2022).
    Title: *Parametric Quantile Regression for Income Data*.
    Institution: University of Brasília.
13. **Verônica Lelis Bittencourt**. M.Sc. in Statistics (2022).
    Title: *Parametric Quantile Regression for Extreme Events*.
    Institution: University of Brasília.
14. **João Victor Monteiros de Andrade** (co-supervisor). M.Sc. in Statistics (2025).
    Title: *Family of Multivariate Distributions for Modeling Data with Positive Support: Properties, Regression and Applications*.
    Institution: University of Brasília.
15. **Leonardo Santos** (co-supervisor). M.Sc. in Statistics (2025).
    Title: *Multivariate Asymmetric Distributions on the Unit Hypercube: Properties, Regression and Applications*.
    Institution: University of Brasília.
16. **João Pedro Moreira Pupe**. M.Sc. in Statistics (2025).
    Title: *State GDP Forecasting: New Competitors versus Traditional Time Series Models*.
    Institution: University of Brasília.
17. **Junio Cesar dos Santos Melo** (co-supervisor). M.Sc. in Statistics (Current).
    Title: *Extended Unit-Log-Symmetric Regression Models*.
    Institution: University of Brasília.
18. **Guilherme Bezerra Pujades Magalhaes** (co-supervisor). M.Sc. in Statistics (Current).
    Title: *Price Duration Models*.
    Institution: University of Brasília.
19. **Thalis Caesar Alonso Venturini** (co-supervisor). M.Sc. in Statistics (Current).
    Title: *Simple Analytical Expressions for the Bias of Some Extended Gini Estimators under Gamma Mixture Populations*.

Institution: University of Brasília.

20. **Pedro Vianna Alves da Silva**. M.Sc. in Statistics (Current).
    Title: *On a New Extreme Value ARMA Model: Characterization, Estimation, and Application to Extreme Air Pollution Events.*
    Institution: University of Brasília.
21. **Tailine Juliana dos Santos Nonato**. M.Sc. in Statistics (Current).
    Title: *Length-Biased Birnbaum-Saunders Regression Models.*
    Institution: University of Brasília.

Undergraduate Supervision (Final Projects / Monographs)

1. **Rodrigo Alves de Oliveira**. B.Sc. in Statistics (2014).
   Title: *Estimation and Forecasting of Automobile Flow Series on the Caldas Novas–Morrinhos Highway.*
   Institution: Federal University of Goiás.
2. **Welder Batista de Oliveira**. B.Sc. in Statistics (2014).
   Title: *The Impact of Data Imprecision on Decision-Making for Optimal Location Selection.*
   Institution: Federal University of Goiás.
3. **Navarro Mendes Santos Rosa**. B.Sc. in Statistics (2015).
   Title: *Birnbaum-Saunders Distribution Based on the Logistic Kernel and Some Inference Problems.*
   Institution: Federal University of Goiás.
4. **Karollyna Barbosa Bie**. B.Sc. in Statistics (2015).
   Title: *Income Distributions and Their Applications in the Study of Income Inequality in Brazil.*
   Institution: Federal University of Goiás.
5. **Nathalia Rodrigues Damasceno**. B.Sc. in Statistics (2015).
   Title: *Cox Regression Models Applied to School Dropout Data.*
   Institution: Federal University of Goiás.
6. **Cristiely Gomes Pires**. B.Sc. in Statistics (2015).
   Title: *Air Quality Monitoring Using Attribute Control Charts Based on the Birnbaum-Saunders Distribution.*
   Institution: Federal University of Goiás.
7. **Isabela Paranhos Pinto**. B.Sc. in Statistics (2018).
   Title: *Analysis and Modeling of Work Absence Data Due to Health Problems Among Federal Public Servants.*
   Institution: University of Brasília.
8. **Rafael Amorim dos Santos**. B.Sc. in Statistics (2018).
   Title: *Bootstrap Control Charts for Log-Symmetric Percentiles.*
   Institution: University of Brasília.

9. **Renata Villas Boas Dias**. B.Sc. in Statistics (2018).
   Title: *Modeling Based on the Birnbaum-Saunders Distribution.*
   Institution: University of Brasília.
10. **Eduardo Barreto Sulz**. B.Sc. in Statistics (2018).
    Title: *A Truncated Version of the Generalized Birnbaum-Saunders Distribution Applied to Risk Analysis.*
    Institution: University of Brasília.
11. **Vitor Macêdo Rocha**. B.Sc. in Statistics (2021).
    Title: *Bootstrap Control Charts for Skew Birnbaum-Saunders Percentiles.*
    Institution: University of Brasília.
12. **Gabriel Tormin Alves**. B.Sc. in Statistics (2022).
    Title: *Quantile Regression in the Analysis of COVID-19 Fatality.*
    Institution: University of Brasília.
13. **Mateus Barros Kilson**. B.Sc. in Statistics (2024).
    Title: *Bagging in Autoregressive Conditional Duration Models.*
    Institution: University of Brasília.
14. **Ana Clara Barbosa de França**. B.Sc. in Statistics (2025).
    Title: *Comparative Analysis of Statistical Models for IPCA Forecasting.*
    Institution: University of Brasília.
15. **João Victor de Oliveira Nogueira**. B.Sc. in Statistics (2025).
    Title: *Forecasting the National Consumer Price Index: Traditional Time Series and Machine Learning Approaches.*
    Institution: University of Brasília.

Scientific Initiation Supervision (Undergraduate Research)

1. **Khézia Ribeiro de Moura**. Scientific Initiation in Statistics (2021).
   Title: *Quantile Mixture Models with Application to Vaccine Antibody Concentration Data.*
   Institution: University of Brasília.

Conference Organizing Committees

- VII Workshop on Survival Analysis and Applications, 2024.
- 16th Brazilian School of Regression Models, 2019.
- Workshop on Statistics and Probability, Satellite meeting - ICM, 2018
- 15th Brazilian School of Regression Models, 2017.
- 1st Workshop on Business Statistics with Applications, 2016.
- 1st Seminar on Applied Statistics, 2016.
- 2nd Goias Meeting of Probability and Statistics, 2015.

Conference Scientific Committees

- 68th RBras, Data Science, Statistics and Postgraduate Studies: opportunities and challenges, 2024.
- 17th Brazilian School of Regression Models, 2021.

Computational Skills

- Statistical/Mathematical/Programing Languages: C, Ox, R, Python
- Typesetting: LaTeX, R Markdown, Quarto
- Operating System: Debian-based Linux distributions.