

# RESUME

VÍCTOR LEIVA

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- URL:** <http://www.deuv.cl/leiva>
- Passport number:** 9640514-6 (Chile)
- IEEE member number:** 91331520
- Foreign languages:** • English • Portuguese (bilingual) • Spanish (native language).
- Education:** • Doctor in mathematical sciences (major in statistics and operational research), University of Granada, Spain, under the supervision of Dr. Jose A. Díaz-García (1999).  
• Postdoctoral fellow, McMaster University, Hamilton, Ontario, Canada, under the supervision of Dr. N. Balakrishnan (2006).  
• Statistician, Catholic University of Valparaíso, Chile (1999).
- Current position:** Professor  
Head of the Department of Statistics, University of Valparaíso, Chile.  
Chief of the Postgraduate, Department of Statistics, University of Valparaíso, Chile. <http://www.deuv.cl>
- Editorial positions:**
- Executive Editor of the Chilean Journal of Statistics (<http://www.soche.cl/chjs>).
  - Advisory Editor of “Stochastic Environmental Research and Risk Assessment –SERRA–” ([www.springerlink.com/content/103283](http://www.springerlink.com/content/103283)).
  - Associate Editor of the Brazilian Journal of Probability and Statistics” (<http://www.imstat.org/bjps/>).
  - Associate Editor of Communications in Statistics: Simulation and Computation (<http://www.taylorfrancis.com/journals>).
  - Associate Editor of Communications in Statistics: Theory and Methods (<http://www.taylorfrancis.com/journals>).
  - Associate Editor Computational Statistics and Data Analysis ([www.elsevier.com/locate/cstda](http://www.elsevier.com/locate/cstda)).
  - Associate Editor of the Pakistan Journal of Statistics (<http://www.pakjs.com>).
- Other positions, memberships:**
- Permanent visiting scholar in the University of North Carolina at Chapel Hill, USA, with Dr. P.K. Sen.
  - Member of the scholarship committee of the advanced human capital program of the National Commission of Scientific and Technology Investigation (Conicyt) of the Chilean government.  
<http://www.conicyt.cl>

- Evaluator member of the National Commission of Accreditation of the Chilean government. <http://www.cnachile.cl>
  - Member of the directory of the Chilean Statistical Society (SOCHE). <http://www.soche.cl>
  - Member of several scientific societies (SOCHE, ASA, ABE, SAE, IEEE, IBC).
  - Member of the Committee of Academic Evaluation of the Faculty of Science of the Universidad de Valparaíso, Chile.
- Research interests: • Distribution theory • Birnbaum-Saunders, elliptic, inverse Gaussian and Johnson distributions • Goodness-of-fit techniques • Influence diagnostics • Lifetime statistical modeling (reliability, survival and censored data analyzes) • Statistical quality control and acceptance sampling.
- Publications: Over 50 articles in indexed international statistical journals; see details in Appendix I.
- Talks: Over 60 talks and courses in local and international meetings.
- Books: A total of 6 (3 of them in progress).
- Projects: Over 20 research project grants developed in Brazil, Colombia, Chile, Mexico and Portugal; see details in Appendix II.
- Thesis supervision: A total of 5 doctoral theses • 7 master theses • Over 26 graduate theses.
- Thesis committee: A total of 3 doctoral theses, 2 from Pakistan, 1 from Brazil • 3 master thesis, 1 from Argentina, 2 from Brazil • Over 40 theses in Chile.
- Refereeing work: Over 100 reviews in indexed statistical journals; see details in Appendix III. Over 20 evaluations of research projects from different countries.
- Academic experience: Experience as lecturer in quality control, operational research and in practically all the topics of statistics since 1992 at the present.
- Consulting experience: Experience as statistical consultant and lecturer in several local and international companies and universities since 1990 at the present.
- Honors and awards: See details in Appendix IV. The most important ones are an article awarded by Elsevier Publisher to the most cited paper during 2005-2010 and to have seen elected as member of the International Statistical Institute.

## Appendix I: scientific publications

1. Caro-Lopera, F.J., **Leiva**, V., Balakrishnan, N. 2012. Connection between the Hadamard and matrix products with an application to a matrix-variate Birnbaum-Saunders distribution. *Journal of Multivariate Analysis* 104(1):126-139.
2. Santos-Neto, M., Cysneiros F.J.A., **Leiva**, V., Ahmed, S.E. 2012. On new parameterizations of the Birnbaum-Saunders distribution. *Pakistan Journal of Statistics* 28(1):1-26.
3. Paula, G.A., **Leiva**, V., Barros, M., Liu, S. 2011. Robust statistical modeling using the Birnbaum-Saunders- $t$  distribution applied to insurance. *Applied Stochastic Models in Business and Industry* (in press). <http://dx.doi.org/10.1002/asmb.887>
4. Athayde, E., Azevedo, C., **Leiva**, V., Sanhueza, A. 2011. About Birnbaum-Saunders distributions based on the Johnson system. *Communications in Statistics: Theory and Methods* (in press).
5. Ferreira, M., Gomes, M.I., Leiva, V., On an extreme value version of the Birnbaum-Saunders distribution. *Revstat* (in press).
6. Villegas, C., Paula, G.A., **Leiva**, V. 2011. Birnbaum-Saunders mixed models for censored reliability data analysis. *IEEE Transactions on Reliability* 60(4):748-758.
7. Catalán, M., Galindo, M.P, Martín, J., **Leiva**, V., 2012. Integration methods of odds ratio based on meta-analysis using fixed and random effect models useful in public health. *Colombian Journal of Statistics*.
8. **Leiva**, V., Athayde, E., Azevedo, C., Marchant, C. 2011. Modeling wind energy flux by a Birnbaum-Saunders distribution with unknown shift parameter. *Journal of Applied Statistics* 38(12):2819-2838.
9. Castillo, N.O., Gomez, H.W., **Leiva**, V., Sanhueza, A. 2011 On the Fernandez-Steel distribution: Inference and application. *Computational Statistics and Data Analysis*, 55(11), 2951-2961.
10. **Leiva**, V., Soto, G., Cabrera, E., Cabrera, G. 2011. New control charts based on the Birnbaum-Saunders distribution and their implementation in R code. *Colombian Journal of Statistics*, 34(1), 147-176.
11. Santana, L., Vilca, F., **Leiva**, V., 2011. Influence analysis in skew-Birnbaum-Saunders regression models and applications. *Journal of Applied Statistics*, 38(8), 1633-1649.
12. Sanhueza, A., **Leiva**, V., López-Kleine, L. 2011. On the Student- $t$  mixture inverse Gaussian model and an application to bacterium-based protein production. *Colombian Journal of Statistics*, 34(1), 177-195.
13. Balakrishnan, N., Gupta, R. Kundu, D., **Leiva**, V., Sanhueza, A. 2011. On some mixture models based on the Birnbaum-Saunders distribution and associated inference. *Journal of Statistical Planning and Inference*, 141(7), 2175-2190.
14. Vilca, F., Santana, L., **Leiva**, V., Balakrishnan, N. 2011. Estimation of extreme percentiles in Birnbaum-Saunders distributions. *Computational Statistics and Data Analysis*, 55(4), 1665-1678.
15. Riquelme, M., **Leiva**, V., Galea, M., Sanhueza, A. 2011. Influence diagnostics on the coefficient of variation of elliptically contoured distributions. *Journal of Applied Statistics* 38(3), 513-532.
16. Barros, M., Galea, M., Gonzalez, M., **Leiva**, V. 2010. Influence diagnostics in the tobit censored response model. *Statistical Methods and Applications*, 19(3), 379-397.
17. **Leiva**, V., Sanhueza, A. Kotz, S., Araneda, N. 2010. A unified mixture model based on the inverse gaussian distribution. *Pakistan Journal of Statistics*, 26(3), 445-460.
18. Vilca, F., Sanhueza, A., **Leiva**, V., Christakos, G. 2010. An extended Birnbaum-Saunders model and its application in the study of environmental quality in Santiago, Chile. *Stochastic Environmental Research and Risk Assessment*, 24(5), 771-782.
19. Castro-Kuriss, C., Kelmansky, D., **Leiva**, V., Martinez, E. 2010. On a goodness-of-fit test for normality with unknown parameters and censored data. *Journal of Applied Statistics*, 37(7), 1193-1211.

20. Kotz, S., **Leiva**, V., Sanhueza, A. 2010. Two new mixture models related to the inverse Gaussian distribution. *Methodology and Computing in Applied Probability*, 12, 199-212.
21. Ahmed, S.E., Castro-Kuriss, C., Flores, E., **Leiva**, V., Sanhueza, A. 2010. A truncated version of the Birnbaum-Saunders distribution with an application in financial risk. *Pakistan Journal of Statistics*, 26(1), 293-311.
22. **Leiva**, V., Vilca, F., Balakrishnan, N., Sanhueza, A. 2010. A skewed sinh-normal distribution and its properties and application to air pollution. *Communications in Statistics: Theory and Methods*, 39(3), 426-443.
23. **Leiva**, V., Sanhueza, A., Sen, P.K., Araneda, N. 2010. M-procedures in the general multivariate nonlinear regression model. *Pakistan Journal of Statistics*, 26(1), 1-13.
24. Balakrishnan, N., **Leiva**, V., Sanhueza, A., Vilca, F. 2009. Estimation in the Birnbaum-Saunders distribution based on scale-mixture of normals and the EM-algorithm. *Statistics and Operations Research Transactions*, 33(2), 171-192.
25. Sanhueza, A., **Leiva**, V., Flores, E. 2009. On a length-biased life distribution based on the sinh-normal model. *Journal of the Korean Statistical Society*, 38, 323-330.
26. Castro-Kuriss, C., Kelmansky, D., **Leiva**, V., Martinez, E. 2009. A new goodness-of-fit test for censored data with an application in monitoring processes. *Communications in Statistics: Simulation and Computation* 38(6), 1161-1177.
27. Guiraud, P., **Leiva**, V., Fierro, R. 2009. A non-central version of the Birnbaum-Saunders distribution for reliability analysis. *IEEE Transactions on Reliability*, 58(1), 152-160.
28. **Leiva**, V., Sanhueza, A., Kelmansky, S., Martinez, E. 2009. On the glog-normal distribution and its association with the gene expression problem. *Computational Statistics and Data Analysis*, 53(5), 1613-1621.
29. **Leiva**, V., Sanhueza, A., Angulo, J.M. 2009. A length-biased version of the Birnbaum-Saunders distribution with application in water quality. *Stochastic Environmental Research and Risk Assessment*, 23, 299-307.
30. Balakrishnan, N., **Leiva**, V., Sanhueza, A., Cabrera, E. 2009. Mixture inverse Gaussian distribution and its transformations, moments and applications. *Statistics*, 43, 91-104.
31. Barros, M., Paula, G.A., **Leiva**, V. 2009. An R implementation for generalized Birnbaum-Saunders distributions. *Computational Statistics and Data Analysis*, 53(5), 1511-1528.
32. Sanhueza, A., Sen, P.K., **Leiva**, V. 2009. A robust procedure in nonlinear models for repeated measurements. *Communications in Statistics: Theory and Methods*, 38, 138-155.
33. **Leiva**, V., Sanhueza, A., Sen, P.K., Paula, G.A. 2008. Random number generators for the generalized Birnbaum-Saunders distribution. *Journal of Statistical Computation and Simulation*, 78, 1105-1118.
34. Barros, M., Paula, G.A., **Leiva**, V. 2008. A new class of survival regression models with heavy-tailed errors: robustness and diagnostics. *Lifetime Data Analysis*, 14(3), 316-332.
35. **Leiva**, V., Sanhueza, A., Silva, A., Galea, M. 2008. A new three-parameter extension to the inverse Gaussian distribution. *Statistics and Probability Letters*, 78(11), 1266-1273.
36. **Leiva**, V., Hernandez, H., Sanhueza, A. 2008. An R package for a general class of inverse Gaussian distributions. *Journal of Statistical Software*, 26(4), 1-21.
37. Sanhueza, A., **Leiva**, V., Balakrishnan, N. 2008. A new class of inverse Gaussian type distributions. *Metrika*, 68, 31-49.
38. **Leiva**, V., Barros, M., Paula, G.A., Sanhueza, A. 2008. Generalized Birnbaum-Saunders distributions applied to air pollutant concentration. *Environmetrics*, 19, 235-249.
39. Sanhueza, A., **Leiva**, V., Balakrishnan, N., 2008. The generalized Birnbaum-Saunders distribution and its theory, methodology and application. *Communications in Statistics: Theory and Methods*, 37, 645-670.
40. **Leiva**, V., Riquelme, M., Balakrishnan, N., Sanhueza, A. 2008. Lifetime analysis based on the generalized Birnbaum-Saunders distribution. *Computational Statistics and Data Analysis*, 52, 2079-2097.

41. **Leiva, V.**, Barros, M., Paula, G.A., Galea, M. 2007. Influence diagnostics in log-Birnbaum-Saunders regression models with censored data. *Computational Statistics and Data Analysis*, 51, 5694-5707.
42. Balakrishnan, N., **Leiva, V.**, López, J. 2007. Acceptance sampling plans from truncated life tests from generalized Birnbaum-Saunders distribution. *Communications in Statistics: Simulation and Computation*, 36, 643-656.
43. Vilca, F., **Leiva, V.** 2006. A new fatigue life model based on the family of skew-elliptical distributions. *Communications in Statistics: Theory and Methods*, 35, 229-244.
44. **Leiva, V.**, Hernández, H., and Riquelme, M. 2006. A new package for the Birnbaum-Saunders distribution. *R Journal* 6, 35-40. [www.r-project.org/doc/Rnews/Rnews\\_2006-4.pdf](http://www.r-project.org/doc/Rnews/Rnews_2006-4.pdf).
45. Díaz-García, J.A., **Leiva, V.**, 2005. A new family of life distributions based on elliptically contoured distributions. *Journal of Statistical Planning and Inference*, 128(2), 445-457.
46. Galea, M., **Leiva, V.**, Paula, G. 2004. Influence diagnostics in log-Birnbaum-Saunders regression models. *Journal of Applied Statistics*, 31, 1049-1064.
47. Díaz-García, J.A., **Leiva, V.** 2003. Doubly non-central  $t$  and  $F$  distributions obtained under singular and non-singular elliptic distributions. *Communications in Statistics: Theory and Methods*, 32, 11-32.
48. Díaz-García, J.A., Galea, M., **Leiva, V.** 2003. Influence diagnostics for multivariate elliptic regression linear models. *Communications in Statistics: Theory and Methods*, 32, 625-641.
49. Díaz-García, J.A., **Leiva, V.**, Galea, M. 2002. Singular elliptic distribution: density and applications. *Communications in Statistics: Theory and Methods*, 31, 665-681.
50. Espinosa, E., Cantu, M., **Leiva, V.** 2001. Characterization and application of the Birnbaum-Saunders model as a life distribution. *Agraria* 1(1):19-27.

## Appendix II: research projects

1. Title: "Multivariate and matrix-variate Birnbaum-Saunders distributions: characterization, modeling and diagnostics". Supported by Fondecyt 1120879, Chilean government. During: 20012-2015. Investigator (type): Víctor Leiva (main investigator).
2. Title: "Modelagem Mista Elíptica e Semiparamétrica". Supported by Universal/CNPq 14/2011 - Projeto: 473306/2011-5, CNPq, Brazil. During: 20012-2013. Investigator (type): Víctor Leiva (assistant investigator).
3. Title: "Distribuciones asimétricas de matrices aleatorias y aspectos relacionados". Supported by Universidad de Medellín, Colombia, y Universidad de Valparaíso, Chile. During: 2011-2013. Investigator (type): Víctor Leiva (assistant investigator).
4. Title: "Optimización de costos de venta y márgenes de contribución en un servicio de alimentación colectiva mediante diseño de un sistema de abastecimiento y política de inventarios". Supported by DIPUV 43/2010, Universidad de Valparaíso, Chile. During: 2011-2012. Investigator (type): Víctor Leiva (assistant investigator).
5. Title: "Robust statistical modeling of the failure rate using the Birnbaum-Saunders- $t$  distribution". Supported Research Centre of Mathematics of the University of Minho through the FCT Pluriannual Funding Program. During: 2010. Investigator (type): Víctor Leiva (investigator).
6. Title: "New families of distributions on the inverse Gaussian model: theory, methodology and application". Supported by Fondecyt 1090265, Chilean government. During: 2009-2013. Investigator (type): Víctor Leiva (assistant investigator).
7. Title: "Modelos de regressão Birnbaum-Saunders generalizados". Supported by Edital MCT/CNPq 14/2008, CNPq, Brazil. During: 2009-2011. Investigator (type): Víctor Leiva (assistant investigator).
8. Title: "Desenvolvimento de Métodos de Diagnóstico e Teoria Assintótica em Modelos de Regressão". Supported by Edital MCT/CNPq/No 011/2008, Prosul, Brazil. During: 2009-2011. Investigator (type): Víctor Leiva (assistant investigator).

9. Title: “Modelos de regresión con respuesta censurada no-normal”. Supported by DIPUV 27/2006, Universidad de Valparaíso, Chile. During: 2008-2009. Investigator (type): Víctor Leiva (main investigator).
10. Title: “Sistemas dinámicos en redes: análisis teórico y aplicaciones en neurociencias”. Supported by DIPUV 50/2007, Universidad de Valparaíso, Chile. During: 2008-2009. Investigator (type): Víctor Leiva (assistant investigator).
11. Title: “Caracterización de una nueva familia de distribuciones de vida del tipo Gaussiana inversa”. Supported by DIUFRO 080061, Universidad de La Frontera, Chile. During: 2008-2009. Investigator (type): Víctor Leiva (assistant investigator).
12. Title: “Diagnóstico de influência em modelos de regressão de contornos elípticos”. Supported by CNPq 471296/2006-6, Brazil. During: 2006-2008. Investigator (type): Víctor Leiva (assistant investigator).
13. Title: “Multivariate extensions of the generalized Birnbaum-Saunders distribution and their characterization and applicability”. Supported by Fondecyt 1080326, Chilean government. During: 2008-2011. Investigator (type): Víctor Leiva (main investigator).
14. Title: “Characterization and applications of a new family of life distributions based on the elliptically contoured distributions”. Supported by Fondecyt 1050862, Chilean government. During: 2005-2007. Investigator (type): Víctor Leiva (main investigator).
15. Title: “Inferencia sobre el coeficiente de variación de poblaciones elípticas”. Supported by DIPUCM 200601, Universidad Católica del Maule, Chile. During: 2004-2006. Investigator (type): Víctor Leiva (assistant investigator).
16. Title: “Modelos de regresión con respuesta censurada y su diagnóstico”. Supported by DIPUV 42/2004, Universidad de Valparaíso, Chile. During: 2004-2006. Investigator (type): Víctor Leiva (main investigator).
17. Title: “Validação de modelos estatísticos”. Supported by Prosul, Brazil. During: 2004-2004. Investigator (type): Víctor Leiva (assistant investigator).
18. Title: “Toxicología reproductiva y del desarrollo embrionario de una formulación comercial del herbicida ácido 2,4-dicloro fenoxiacético (2,4-d)”. Supported by DIPUV 22/2002, Universidad de Valparaíso, Chile. During: 2002-2003. Investigator (type): Víctor Leiva (assistant investigator).
19. Title: “Distribuciones elípticas utilizadas como modelos de vida”. Supported by DIPUV 21/2002, Universidad de Valparaíso, Chile. During: 2002-2003. Investigator (type): Víctor Leiva (main investigator).
20. Title: “Distribuciones elípticas sesgadas: su uso como distribuciones de vida”. Supported by UAAAN 02.03.0308.2627, México. During: 2002-2002. Investigator (type): Víctor Leiva (assistant investigator).
21. Title: “Inferencia sobre el coeficiente de variación en poblaciones elípticas”. Supported by DIPUV 33/2000, Universidad de Valparaíso, Chile. During: 2000-2001. Investigator (type): Víctor Leiva (main investigator).

### **Appendix III: refereeing work**

- Reviewer (referee) of manuscripts submitted to the following statistical journals (in alphabetic order):
  1. Brazilian Journal of Probability and Statistics (7 times).
  2. Chilean Journal of Statistics (3 times).
  3. Communications in Statistics (over 15 times).
  4. Computational Statistics and Data Analysis (over 30 times).
  5. IEEE Transactions on Reliability (2 times).
  6. International Journal of Mathematics and Mathematical Sciences (1 time).

7. International Journal of Quality, Statistics, and Reliability (1 time).
  8. Journal of Applied Statistics (4 times).
  9. Journal of Multivariate Analysis (2 times).
  10. Journal of Commerce and Social Sciences (1 time).
  11. Journal of Statistical Computation and Simulation (3 times).
  12. Journal of Statistical Planning and Inference (3 times).
  13. Lifetime Data Analysis (1 time).
  14. Pakistan Journal of Statistics (5 times).
  15. Mathematical Problems in Engineering (1 time).
  16. Metron (1 time).
  17. Risk Analysis (2 times).
  18. Statistics (4 times).
  19. Statistics and Operations Research Transactions (1 time).
  20. Statistics and Probability Letters (1 time).
  21. Statistica Neerlandica (2 times).
  22. Statistical Papers (2 times).
  23. Statistical Modeling (1 time).
  24. Statistics Methodology (3 times).
  25. Stochastic Environmental Research and Risk Assessment (over 10 times).
  26. Among others.
- Reviewer of book proposals submitted to Springer (2 times).
  - Reviewer of projects for FONDECYT, Chilean government (7 times).
  - Reviewer of projects for MECESUP (improvement of the quality of the Chilean education) of the Chilean Education Ministry.
  - Reviewer of projects for several Chilean, Colombian, and Mexican universities (over 10 times).

#### **Appendix IV: honors and awards**

- 1985-1989: Recipient of scholarship (degree in statistics, Catholic University of Valparaíso, Chile).
- 1996-1999: Recipient of scholarship from the International Cooperation Agency of the Spanish government (doctorate in statistics, University of Granada, Spain).
- 1999: Ph.D. dissertation with highest honors and with the special distinction “cum laude” for unanimity of the thesis committee.
- 1999: Ph.D. dissertation postulated to the best doctoral thesis award from the University of Granada, Spain.
- 2010: Article awarded by Elsevier Publisher entitled “Influence diagnostics in log-Birnbaum-Saunders regression models with censored data” by **Leiva**, Barros, Paula and Galea in Computational Statistics and Data Analysis, Vol. 51, pp. 5694-5707, 2007, to the most cited paper during 2005-2010.
- 2011: Elected member of the International Statistical Institute.

Updated to January 13, 2012.