

CURRICULUM VITAE

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Highlights

- ***Professor and Head, Department of Statistics, CUSAT***
- ***Director, Centre for Population Studies, CUSAT***
- ***Received the Young Researcher Award constituted by the International Indian Statistical Association, USA to honour outstanding Researchers in Statistical Theory.***
- ***Published research papers in 141 refereed journals of which over 110 were in international journals.***
- ***Published 72 Conference papers, 3 books and 3 technical papers.***
- ***Visiting scientist at many leading Indian and International institutes including Indian Statistical Institute, (Kolkata and New Delhi), University of Dalhousie, Canada and University of Waterloo, Canada.***
- ***Member of International Statistical Institute, The Netherlands; American Mathematical Society, U.S.A.; Institute of Mathematical Statistics, U.S.A.; International Indian Statistical Association, U.S.A.; International Society for Business and Industrial Statistics, U.S.A.***
- ***Reviewer of many international journals such as American Mathematical Review, U.S.A., Multivariate Analysis, Computational Statistics and Data Analysis, Statistics and Probability Letters, Statistics, Communications in Statistics- Theory and Methods, Statistical Papers, Journal of Japan Statistical Association, Journal of Applied Statistics, Journal of Indian Statistical Association, Bulletin of Calcutta Statistical Association***
- ***Supervised the 11 Research Scholars for doctoral degree.***

Education

M.Sc. Statistics, Cochin University of Science and Technology, Kerala, India, 1987

Ph.D. Statistics, Cochin University of Science and Technology, Kerala, India, 1992

Areas of Specialization

Survival Analysis, Reliability Analysis, Distribution Theory

Positions held in the past

Head, Department of Statistics, Cochin University of Science and Technology (15th December 2014- 29, August, 2017)

Professor, Department of Statistics, Cochin University of Science and Technology (Since 10th November 2010)

Director, Centre for Population Studies, Cochin University of Science and Technology (Since 2002)

Associate Professor, Department of Statistics, Cochin University of Science and Technology (From 10 -11- 2007 to 09-11-2010)

Reader, Department of Statistics, Cochin University of Science and Technology (Since 10th November 2004)

Lecturer (Senior Scale), Department of Statistics, Cochin University of Science and Technology (From 10-11-1999 to 9-11-2004)

Lecturer, Department of Statistics, Cochin University of Science and Technology (From 26-9-1997 to 9-11-1999)

Lecturer in Statistics, Marthoma College for Women, Perumbavoor (From 10-11-1995 to 25-9-1997)

Statistician, Indian Cardamom Research Institute, Spices Board, Cochin (From 27-1-1993 to 9-11-1995)

Visits

- Visiting Scientist, Indian Statistical Institute, Kolkata, March 2014
- SAP DRS Visitor, Calcutta University, Kolkata, February 2010
- Visiting Scientist, Indian Statistical Institute, New Delhi, June 2008
- Visiting Scientist, Indian Statistical Institute, Kolkata, May, 2004, March 2014
- Visiting Scientist, University of Waterloo, Canada, May-June 2003
- Post Doctoral Fellow, University of Dalhousie, Canada, April-August, 1997
- BOYSCAST Fellowship of DST, Govt. of India, University of Dalhousie, Canada, March-September, 2000
- Lecturer, Dalhousie University, Canada, May 2000

Title of the Ph.D. Thesis

Characterization of probability distributions using reliability concepts

Ph.D. Thesis Supervised

1. Preethi John:- Some families of bivariate distributions and their applications, 2017.
2. Nidhi P Ramesh : Modeling and analysis of lifetime data in discrete time, 2017.
3. Anjana S. : Modeling and analysis of lifetime data using reversed hazard rates, 2016
4. Midhu N. N. : Modeling and analysis of lifetime data using quantile functions, 2014
5. Anisha P. : Modeling and analysis of recurrent event data, 2012
6. Sreedevi E. P. : Modeling and analysis of competing risks data, 2010
7. Gleeja V. L. : Modeling and analysis of bivariate lifetime data using reversed hazard rates, 2008
8. Maya T. Nair: On finite mixtures of Pareto and beta distributions, 2007.
9. Sreeja V. N. : Regression models for bivariate survival data, 2008
10. Ansa Alphonsa Antony: Non parametric estimation of survivor function in bivariate competing risk models, 2006.
11. Sindhu, T. K: A generalized Pearson system useful in reliability analysis, 2005.

Awards and Fellowships

1. Young Researcher Award, International Indian Statistical Association, 2010
2. BOYSCAST Fellow of DST, Govt. of India, 2000
3. CSIR Senior Research Fellowship, 1991-1992

Conferences/Workshops Organized

1. International Workshop on Reliability Theory and Survival Analysis, December 31, 2013- January 2, 2014
2. XXXI Annual Convention of Indian Society for Probability and Statistics (ISPS) and International Conference on Statistics, Probability and Related Areas, December 19-22, 2011, Cochin
3. Workshop on Health and Wellness, 2007, Cochin.
4. IISA Joint Statistical Meeting and International Conference on Statistics, Probability and related areas, 2007, Cochin.
5. Workshop on Women and Health Literacy in Kerala, 2006, Cochin.
6. International Conference on Statistics in Industry and Business, 2003, Cochin.
7. Workshop on Six Sigma Limits, 2002, Cochin.
8. Workshop on ISO 2000, 2001, Cochin.

Membership in Academic Bodies

1. Member, Board of Studies CUSAT, University of Calicut, KUFOS
2. Member, Examination Board , CUSAT, University of Calicut, University of Kerala, Bangalore University, M.G. University, Mangalore University
3. Member, Academic Council, CUSAT
4. Member, Senate, CUSAT
5. Member, Staff Council, CUSAT
6. Member, Faculty of Science, CUSAT
7. Member, Governing Council of RUSA, CUSAT
8. Member, Academic Committee, CUSAT

9. Member, University Placement Committee, CUSAT

Membership in Professional Organizations

1. Elected Member, International Statistical Institute, The Netherlands
2. Member, American Mathematical Society, U.S.A.
3. Member, Institute of Mathematical Statistics, U.S.A.
4. Life Member, International Indian Statistical Association, U.S.A.
5. Life Member, International Society for Business and Industrial Statistics, U.S.A.
6. Life Member, Indian Society for Probability and Statistics, India
7. Life Member, Kerala Statistical Association

Projects Undertaken

1. Major Research Project (Principle Investigator): Modeling and analysis of lifetime data using quantile functions, KSCSTE, Govt. of Kerala, 2017-2020
2. USERS Scheme-Book Writing (Co-investigator) “ Quantile based Reliability Analysis”, Department of Science and Technology, 2011-2013.
3. Major Research Project (Co-investigator): “Modelling and analysis of financial time series”, Department of Science and Technology, 2008-2011.
4. Minor research Project “ Pearson family of distributions, Cochin University of Science and Technology, 1998-2000

List of Research Papers Published

A. Research Papers

2018

1. N.Unnikrishnan Nair, P.G.Sankaran and Preethi John : Modelling bivariate lifetime data using copula, *Metron*, 2018 (to appear).
2. Sunoj, S. M., Aswathy S. Krishnan, and P. G. Sankaran. A quantile-based study of cumulative residual Tsallis entropy measures. *Physica A: Statistical Mechanics and its Applications* 494 (2018): 410-421.
3. Sunoj, S. M., P. G. Sankaran, and N. Unnikrishnan Nair. Quantile-based cumulative Kullback–Leibler divergence. *Statistics* 52.1 (2018): 1-17.
4. Sankaran, P. G. and Prasad S Additive Risks regression model for middle censored exponentiated-exponential lifetime data. *Communications in Statistics-Simulation and Computation* (2018, to appear).

2017

5. N.Unnikrishnan Nair, Sankaran P.G and Nidhi P Ramesh, Multivariate variance residual life in discrete time, *Statistica*, LXXVI (3), 182-205.
6. Sankaran, P. G., and S. Prasad. An additive risks regression model for middle-censored lifetime data. *Statistics in Transition*, 18 (3), 2017.

7. David Hanagal, Aravind Pandey and P.G.Sankaran: Shared Frailty Model Based on Reversed Hazard Rate for Left Censored Data, *Communications in Statistics-Simulation and Computation*, 46, 230-241, 2017
8. Sankaran, P. G., and Preetha Kumari. P V. Proportional Reversed Hazards Rates Model with Quantile Regression. *Journal of the Indian Society for Probability and Statistics* 18 (2) : 225-236, 2017.
9. Sunoj, S. M., Aswathy S. Krishnan, and P. G. Sankaran. Quantile-Based Entropy of Order Statistics. *Journal of the Indian Society for Probability and Statistics* 18.1 (2017): 1-17.
10. Sreedevi E.P., P.G.Sankaran and Isha Dewan: A semiparametric regression model for current status competing risks data, *Journal of Indian Statistical Association*, 2017 (to appear)
11. Preethi, John and P. G. Sankaran. A bivariate Weibull family with applications. *American Journal of Mathematical and Management Sciences* 36.2 (2017): 162-175.
12. Sankaran, P. G., and S. M. Sunoj. Quantile-based cumulative entropies. *Communications in Statistics-Theory and Methods* 46.2 (2017): 805-814.
13. Nair, N. Unnikrishnan, P. G. Sankaran, and Nidhi P. Ramesh. Some properties of discrete bathtub-shaped distributions. *Communications in Statistics-Theory and Methods* 46.11 (2017): 5384-5393.
14. Nair, N. Unnikrishnan, P. G. Sankaran, and Nidhi P. Ramesh. Discrete distributions with bathtub-shaped hazard rates. *South African Statistical Journal* 51.1 (2017): 81-102.
15. Sankaran, P. G., and N. N. Midhu. Nonparametric estimation of mean residual quantile function under right censoring. *Journal of Applied Statistics* 44.10 (2017): 1856-1874.
16. Sankaran, P. G., Isha Dewan, and E. P. Sreedevi. A martingale-based test for independence of time to failure and cause of failure for competing risks models. *Communications in Statistics-Theory and Methods* 46.16 (2017): 8178-8186.
17. Preethi John and Sankaran P G : A positive dependent Archimedean copula, *Journal of Applied Mathematics and Statistics*, 2017 (to appear).
18. Sankaran, P. G., Nidhi P. Ramesh, and N. Unnikrishnan Nair. Multivariate discrete reversed hazard rates. *Communications in Statistics-Theory and Methods* , 46 (19), 9817-9833, 2017.

2016

19. Sankaran, P. G., and N. N. Midhu. Testing exponentiality using mean residual quantile function. *Statistical Papers* 57.1 (2016): 235-247.
20. Dewanji, Anup, et al. Regression analysis of competing risks data with general missing pattern in failure types. *Statistical Methodology* 29 (2016): 18-31.
21. Sankaran, P. G., and S. Anjana. Proportional cause-specific reversed hazards model. *Journal of Nonparametric Statistics* 28.1 (2016): 68-83.

22. Sankaran, P. G., S. M. Sunoj, and N. Unnikrishnan Nair. Kullback–Leibler divergence: A quantile approach. *Statistics & Probability Letters*, 111 (2016): 72-79.
23. P.G.Sankaran and Anjana S : Nonparametric Estimation of Cumulative cause Specific Reversed Hazard Rates under Masked Causes of Failure, *Journal of Biostatistics and Biometric Applications*, 1-11, 2016.
24. Sankaran, P. G., Nidhi P. Ramesh, and N. Unnikrishnan Nair. Ageing Classes in Discrete Time Based on Hazard Rate: A Review and New Results. *Research & Reviews: Journal of Statistics* 5.1 (2016): 10-26.
25. Unnikrishnan Nair, N., P. G. Sankaran, and Nidhi P. Ramesh. Determination of Hazard Rate Shape for Discrete Lives. *International Journal of Reliability, Quality and Safety Engineering* 23.04 (2016): 1650015.
26. Jammalamadaka, S. Rao, Sundaresan Nair Prasad, and Paduthol Godan Sankaran., A semi-parametric regression model for analysis of middle censored lifetime data, *Statistica* 76.1 (2016): 27.
27. Sankaran, P. G., N. Unnikrishnan Nair, and Nidhi P. Ramesh. Quantification of relative ageing in discrete time, *Metron* 74.3 (2016): 339-355.
28. Sankaran, P. G., N. Unnikrishnan Nair, and N. N. Midhu. A new quantile function with applications to reliability analysis. *Communications in Statistics-Simulation and Computation* 45.2 (2016): 566-582.
29. Anup Dewanji, P.G.Sankaran, Debasis Sengupta and Bappa Karmakar: Regression Analysis of Competing Risks Data with General Missing Pattern in Failure Types, *Statistical Methodology*, 29, 18-31, 2016.

2015

30. Dewan,I. Sankaran,P.G. and Sreedevi. E.P : On testing independence of time to failure and cause of failure in a competing risks model for a grouped data, *Journal of Applied Statistical Science*, 21(3), 291-305, 2015.
31. P.G.Sankaran and Anjana S: Parametric analysis of failure time data with multiple causes using cause specific reversed hazard rates, *Bulletin of Calcutta Statistical Association*, 67, 1-14, 2015.
32. Bijamma Thomas, N.N. Midhu and P.G.Sankaran: A software reliability model using mean residual quantile function, *Journal of Applied Statistics*, 42:7, 1442-1457, 2015.
33. N.Unnikrishnan Nair and P.G.Sankaran: Multivariate discrete scalar hazard rate, *Statistical Methodology*, 27, 39-50, 2015.
34. P.G.Sankaran, N.Unnikrishnan Nair and Preethi John: Characterizations of bivariate Pareto distributions, *Statistica* 75 (3),2015: 275-290
35. P.G.Sankaran and Prasad S : Weibull regression model for analysis of middle censored lifetime data, *Journal of Statistics & Management Systems*, 18, 433-444, 2015 .

36. P. G. Sankaran & E. P. Sreedevi (2016) A proportional hazards model for the analysis of doubly censored competing risks data, *Communications in Statistics - Theory and Methods*, 45:10, 2975-2987.
37. P.G.Sankaran, Bijamma Thomas and Midhu N. : On bilinear hazard quantile functions, *Metron*, 73,135–148, 2015 DOI 10.1007/s40300-014-0048-x
38. P.G.Sankaran. Asokan Mulayathvariya and Anjana S: Additive reversed hazards models, *American Journal of Mathematical and Management Sciences*, 34, 162-183, 2015.
39. Vinesh Kumar B, N.Unnikrishnan Nair and P.G.Sankaran: Stochastic orders using quantile-based reliability functions, *Journal of Korean Statistical Society*, 44, 22-231, 2015.
40. N.Unnikrishnan Nair and P.G.Sankaran: Odds functions and odds rates for discrete life distributions: *Communications in Statistics- Theory and Methods*, 44, 4185-4202, 2015.
41. P.G.Sankaran, Isha Dewan and Sreedevi E.P. A non-parametric test for stochastic dominance using total time on test transform, *American Journal of Mathematical and Management Sciences*, 34 (2), 162-183, 2015.

2014

42. N.Unnikrishnan Nair and P.G.Sankaran: Characterizations and time-dependent association measures for bivariate schur-constant distributions, *Brazilian Journal of Probability and Statistics*, 8 (3), 409-423, 2014.
43. Sankaran, Paduthol Godan, N. Unnikrishnan Nair, and John Preethi. A family of bivariate Pareto distributions. *Statistica* LXXIV, 199-215, 2014.
44. N. Unnikrishnan Nair and P.G.Sankaran: A family of bivariate exponential distributions and their copulas, *Sankhya B*, 2013 DOI 10.1007/s13571-013-0067-2
45. N.Midhu, P.G.Sankaran and N.Unnikrishnan Nair: A class of distributions with linear hazard quantile function, *Communications in Statistics- Theory & Methods*,43,3674–3689,2014(DOI: 10.1080/03610926.2012. 705211)
46. Sreedevi. E.P.,P.G.Sankaran and P.Dhanavanthan: A nonparametric test for comparing cumulative incidence functions of current status competing risks data, *Journal of Statistical Theory and Practice*, 8, 743-759, 2014
47. Asokan Mulayathvariya and P.G.Sankaran : Parametric regression models using reversed hazard rates, *Journal of Probability and Statistics* , 2014, <http://dx.doi.org/10.1155/2014/645719>
48. Asok K Nanda, P.G.Sankaran and S.M.Sunoj: Renyi's residual entropy: A quantile approach, *Statistics and Probability Letters*, 114-121, 2014.
49. Sankaran P.G. and Anjana S.Modeling lifetime data with multiple causes using cause specific reversed hazard rates, *Statistica*, LXXIV(3), 215-334, 2014.
50. Sankaran P.G. and Anjana S. A class of tests for the equality of cause specific hazard rates in competing risks models, *Journal of Indian Statistical Association*, 52(1), 161-176, 2014
51. N.Unnikrishnan Nair and P.G.Sankaran: Modelling lifetimes with bivariate Schur-constant equilibrium distributions from renewal theory, *METRON* , 72,331–349, 2014 DOI 10.1007/s40300-014-0045-0

52. Bijamma Thomas, Midhu N. and P.G.Sankaran: A software reliability model using quantile function, *Journal of Probability and Statistics*, 2014 <http://dx.doi.org/10.1155/2014/951608>
53. P.G.Sankaran and Midhu N: A class of distributions defined by quantile density function, *Bulletin of Calcutta Statistical Association*, 66, 1-24, 2014.

2013

54. Midhu N. P.G.Sankaran and N.Unnikrishnan Nair: A class of distributions with linear mean residual quantile function, *Statistical Methodology*, 5, 1-24, 2013.
55. N.Unnikrishnan Nair and P.G.Sankaran : Some new applications of the total time on test transforms. *Statistical Methodology*, 10, 93-102,2013.
56. P.G.Sankaran and Debasis Kundu: On a bivariate Pareto distribution, *Statistics*, 2013 (to appear)
57. N.Unnikrishnan Nair, P.G.Sankaran and S.M.Sunoj : Quantile based stop-loss transform and its applications, *Statistical Methods and Applications*, 22, 167-182, 2013.
58. P.G.Sankaran,Isha Dewan and Anisha P: On testing independence of failure time and cause of failure using sub-quantiles, *Journal of Statistical Theory and Practice*, 7, 24-32, 2013
59. S.M.Sunoj, P.G.Sankaran and Asok Nanda: Quantile based entropy function in past lifetime, *Statistics and Probability Letters*, 83, 366-372,
60. N.Unnikrishnan Nair, P.G.Sankaran and S.M.Sunoj: Quantile based reliability aspects of partial moments, *Journal of Korean Statistical Society*, 42, 329-342. 2013.
61. E.P.Sreedevi and P.G.Sankaran: Analysis of competing risks data using neural network models, *International Journal of Statistics and Applications*, 3(4), 123-131.
62. N.Unnikrishnan Nair and P.G.Sankaran: Characterizations of discrete distributions by reliability concepts in reversed time, *Statistics and Probability Letters*, 1939-1945, 2013.

2012

63. N.Unnikrishnan Nair, P.G.Sankaran and B. Vineesh Kumar Govindarajalu distribution and its properties, *Communications in Statistics- Theory & Methods*, 41, 4391-4406, 2012
64. N.Unnikrishnan Nair and P.G.Sankaran. Some results on an additive hazards model, *Metrika*, 75, 389–402, 2012.
65. P.G.Sankaran and Sreeja V.N. Proportional Hazards Model for Successive Duration Times Under Informative Censoring, *Communications in Statistics-Theory and Methods*, 41, 262-280,2012
66. N.Unnikrishnan Nair, P.G.Sankaran and M.Preeth, Reliability Aspects of Discrete Equilibrium Distributions, *Communications in Statistics- Theory and Methods*, 41, 500-515, 2012

67. E.P.Sreedevi and P.G.Sankaran: A semiparametric Bayesian approach for the analysis of competing risks data, *Communications in Statistics-Theory and Methods*, 41, 2803-2818, 2012
68. P.G.Sankaran, M.Manoharan and Anisha P Nonparametric estimators of survivor function of paired recurrent events, *Statistical Methodology*, 9, 501-512, 2012
69. S.M.Sunoj and P.G.Sankaran Quantile residual entropy function, *Statistics and Probability Letters*, 82, 149-1053, 2012
70. P.G.Sankaran and P.Anisha Additive hazards models for recurrent event data with multiple causes, *Statistics and Probability Letters*, 82(7). 1454-1462, 2012.
71. Sreedevi E.P., P.G.Sankaran and P.Dhanavandhan: A nonparametric test for independence of time to failure and cause of failure of current status competing risks data, *Bulletin of Calcutta Statistical Association*, 167-180, 2012 .
72. N.Unnikrishnan Nair and P.G.Sankaran: Characterization of Distributions by Properties of Truncated Gini Index and Mean Difference, *Metron*, LXX - N. 2-3 , 173-191, 2012

2011

73. K.R.Muraleedharan Nair , P.G.Sankaran and Smitha.S: Chernoff distance for truncated distributions, *Statistical Papers*, 893-910, 2011(DOI 10.1007/s00362-009-0297-6)
74. P.G.Sankaran and Sreeja V.N. Proportional Hazards Model for Gap Time Distributions of Recurrent Events, Special issue on Survival Analysis, *Journal of Applied Statistical Science*, 59-71, 2011
75. N.Unnikrishnan Nair, P.G.sankaran and Vineesh Kumar B. Modelling lifetimes by quantile functions using Parzen's score function, *Statistics*, 2011
76. P.G.Sankaran and Anisha P. Shared frailty model for recurrent event data with multiple causes, *Journal of Applied Statistics*, 38, 2559- 2568, 2011.
77. P.G.Sankaran and Gleeja V.L. On proportional reversed hazards frailty models, *Metron*, LXIX, 151-173, 2011.
78. N.Unnikrishnan Nair and P.G.Sankaran: Quantile based lower partial moments and their applications, *American Journal of Mathematical and Management Sciences*, 255-276, 2011.

2010

79. P.G.Sankaran, N.Unnikrishnan Nair and E.P.Sreedevi: A quantile based test for comparing cumulative incidence functions of competing risks models, *Statistics and Probability Letters*, 80, 886-891, 2010
80. N.Unnikriahnan Nair and P.G.Sankaran: Properties of a mean residual life function arising from renewal theory, *Naval Research Logistics Quarterly*, 57, 373-379, 2010
81. N.Unnirkishnan Nair and P.G.Sankaran: A new measure of association for bivariate survival data, *Journal of Statistical Planning and Inference*, 140, 2569-2581, 2010
82. P.G.Sankaran and Midhu N.N: On waiting time distributions for patterns in a sequence of multistate trials, *Statistics and Probability Letters*, 80, 1798-1805, 2010.

83. P.G.Sankaran, Ashis SenGupta and Sreeja V.N. Nonparametric estimation of distribution function using concomitants of order statistics. *Journal of Statistical Theory and Practice*, 4(4), 617-630, 2010
84. P.G.Sankaran and Preetha Kumari P.V. A parametric regression model useful in reliability analysis, *Bulletin of Calcutta Statistical Association*, 183-206, 2010

2009

85. N.Unnikrishnan Nair and P.G.Sankaran: Quantile based reliability analysis, *Communication in Statistics-Theory and Methods*, 38, 222- 232, 2009
86. P.G.Sankaran and Ansa Alphonsa Antony: Non parametric estimation of life time distribution of competing risks models when censoring times are missing, *Statistical Papers*, 50, 339-361, 2009
87. P.G.Sankaran and T.K.Sindu: A generalized Ord family of distributions useful in reliability analysis, *Journal of Statistical Theory and Applications*, Special issue on Characterization and Classification of Distributions, 8, 61-74, 2009
88. P.G.Sankaran and N.Unnikrishnan Nair: Non parametric estimation of hazard quantile function, *Journal of Nonparametric Statistics*, 21(6), 757- 767, 2009
89. S.M.Sunoj, P.G.Sankaran and S.S.Maya: Characterizations of life distributions using conditional expectations of double (interval) truncated random variables, *Communication in Statistics-Theory and Methods*, 38, 1441-1452, 2009.

2008

90. P.G.Sankaran and K.Jayakumar: On proportional odds models, *Statistical Papers*, 49, 779-789, 2008.
91. P.G.Sankaran and Ansa Alphonsa Antony: Non-parametric estimation of bivariate survivor function under masked causes of failure, *Journal of Nonparametric Statistics*, 20, 77-89, 2008.
92. P.G.Sankaran and Gleeja V.L: Proportional reversed hazard and frailty models, *Metrika*, 68, 333-342, 2008
93. N.Unnikrishnan Nair and P.G.Sankaran: Characterizations of multivariate distributions, *Journal of Multivariate Analysis*, 99, 2096-2107, 2008
94. P.G.Sankaran and Gleeja V.L: Association of measures for bivariate lifetime data, *Communication in Statistics-Theory and Methods*, 37, 3228-3249, 2008.
95. N.Unnikrishnan Nair, P.G.Sankaran and Vinesh Kumar B: Total time on test transforms of order n and its implications in reliability analysis, *Journal of Applied Probability*, 45, 1126-1139, 2008.

2007

96. P.G.Sankaran and Sreeja, V.N.: Proportional hazards model for multivariate failure time data, *Communications in Statistics- Theory and Methods*, 36(8), 1627-1641, 2007

97. S.M.Sunoj, P.G.Sankaran and Maya, S.S: Characterizations of distributions using log odds rate, *Statistics*, 41(5), 443-451, 2007.
98. Bovas Abraham, N.Unnikrishnan Nair and P.G.Sankaran: Characterization of some continuous distributions by properties of partial moments, *Journal of Korean Statistical Society*, 36, 357-365, 2007.
99. P.G.Sankaran, Gleeja.V.L. and T.M.Jacob: Non parametric estimation of reversed hazard rate, *Calcutta Statistical Association Bulletin*, 59, 55-68, 2007.
100. P.G.Sankaran and Ansa Alphonsa Antony: Bivariate competing risks models under masked causes of failure, *Advances in Mathematical modeling for Reliability* (Eds. Bedford, T., Quiglex, J., Walls, L., Alkali, B., Daneshkhah, A. and Aardman, G.), 72-79, 2007.
101. S.Smitha, K.R.Muraleedharan Nair and P.G.Sankaran: On measures of affinity for truncated distributions, *Calcutta Statistical Association Bulletin*, 69, 23-246, 2007.
102. Sreeja, V.N. and P.G.Sankaran: Proportional mean residual life model for gap time distributions of recurrent events, *Metron*, LXV(3),319-336, 2007
103. P.G.Sankaran and Ansa Alphonsa Antony : Bivariate competing risks models under random left truncation and right censoring, *Sankhya B*, Special issue on Biology and Health Sciences, 69, 425-447, 2007.

2006

104. P.G.Sankaran, J.F.Lawless, B.Abraham and Ansa A Antony: Non- parametric estimation of distribution functions in bivariate competing risk models, *Biometrical Journal*, 48(3), 399-410, 2006.
105. P.G.Sankaran, Bovas Abraham and Ansa Alphonsa Antony: A dependence measure for bivariate failure time data, *Metron*, 64, 1-15, 2006.
106. P.G.Sankaran and Gleeja.V.L: On bivariate reversed hazard rates, *Journal of Japan Statistical Association*, 36(2), 213-224, 2006

2005

107. N.U.Nair, P.G.Sankaran and G.Asha: Characterizations based on reliability concepts, *Journal of Applied Statistical Science*, 14, 237-242, 2005
108. B.Abraham and P.G.Sankaran: Renyi's entropy for residual lifetime distributions, *Statistical Papers*, 17-30, 2005.
109. P.G.Sankaran and R.D.Gupta: A general class of distributions- properties and applications, *Communications in Statistics- Theory and Methods*, 34, 2089-2095, 2005
110. P.G.Sankaran and Maya.T.Nair: On a finite mixture of Pareto distributions, *Calcutta Statistical Association Bulletin* , 67-84, 2005
111. Ansa Alphonsa Antony and P.G.Sankaran: Non parametric estimation of bivariate survivor function of competing risk models under censoring, *Journal of Statistical Theory and Applications*, 4, 401-423, 2005.
112. S.M.Sunoj and P.G.Sankaran: Bivariate weighted distributions in the context of reliability modeling, *Calcutta Statistical Association Bulletin*, 57, 179-194. 2005.

2004

113. P. G. Sankaran and S.M.Sunoj: Identification of models using failure rate and mean residual life of doubly truncated random variables, *Statistical Papers*, 45, 97-109, 2004.
114. R.P.Gupta, R.D.Gupta and P.G.Sankaran: Identification of failure rate, *Calcutta Statistical Association Bulletin*, 53, 209-222, 2004.
115. P.G.Sankaran and R.P.Gupta: Characterizations using local dependence functions, *Communications in Statistics – Theory and Methods*, Special issue on Characterizations of Probability Distributions, 33, 2004.
116. R.C.Gupta, R.D.Gupta and P.G.Sankaran: Some characterization results based on factorization of the (reversed) hazard rate function, *Communications in Statistics – Theory and Methods*, Special issue on Characterizations of Probability Distributions, 33, 2004.
117. G.Asha, N.U.Nair and P.G.Sankaran: Discrete models characterized by bivariate conditional mean residual life, *Calcutta Statistical Association Bulletin*, 55, 241-252, 2004.
118. N.U.Nair, G.Asha and P.G.Sankaran: On the covariance of residual lives, *Statistica*, 64, 573-585, 2004.
119. P.G.Sankaran and Maya, T Nair: On a finite mixture of beta distributions, *Far East Journal of Theoretical Statistics*, 103-120, 2004.
120. P.G.Sankaran and N.Unnikrishnan Nair: Partial moments for bivariate distributions, *Metron*, 62, 339-351, 2004

2003

121. P.G.Sankaran, N. Unnikrishnan Nair and T.K.Sindu: A generalized Pearson system useful in reliability analysis, *Statistical Papers*, 44, 125-130, 2003.
122. G.Asha, P.G.Sankaran and N.UnnikrishnanNair: Probability models with constant total failure rate, *Communications in Statistics – Theory and Methods*, 32, 1089-1099, 2003.

2002

123. G. Asha and P.G Sankaran: A bivariate geometric distribution with applications in reliability, *Journal of Indian Statistical Association*, 2002

2001

124. P.G.Sankaran, R.P.Gupta and N.Unnikrishnan Nair: Characterizations using joint distribution of age and residual life in Stationary Renewal process, *Far East Journal of Theoretical Statistics*, 5(2), 2001, 253-264.
125. P.G.Sankaran and T.K.Sindu: On IFR (DFR) classes of distributions, *IAPQR Transactions*, 26(2), 2001.

2000

- 126.P.G.Sankaran and N.Unnikrishnan Nair: On reliability aspects of Pearson family of distributions, Statistical Papers, 2000, 41, 109-117.
- 127.P.G.Sankaran and N.Unnikrishnan Nair: Conditional mean residual life functions, Communications in Statistics-Theory and Methods, 2000, 29(7), 1663-1675.
- 128.P.Priya, P.G.Sankaran and N.Unnikrishnan Nair: Factorial partial moments and their properties, Journal of the Indian Statistical Association, 2000, 38(1), 45-56.

1999

- 129.P.G.Sankaran and R.P.Gupta: Characterization of lifetime distributions using measure of uncertainty, Calcutta Statistical Association Bulletin, 1999, 49, 154-166.

1998

- 130.N.Ajithkumar and P.G.Sankaran: Instability of Turmeric Production in India, Journal of Spices and Aromatic Crops, 1998, 19-22.
- 131.R.P.Gupta and P.G.Sankaran: Bivariate equilibrium distributions and its applications in reliability, Communications in Statistics-Theory and Methods, 1998, 15, 49-59.

1996

- 132.P.G.Sankaran, N.Unnikrishnan Nair and N.Hitha: Some characterizations of the geometric law, Aligarh Journal of Statistics, 1996, 15, 49-54.
- 133.P.G.Sankaran and N.Unnikrishnan Nair: On bivariate finite range distributions, Journal of the Indian Statistical Association, 1996, 119-124.

1994

- 134.P.G.Sankaran, K.M.Kuruvila and K.J.Madhusoodhanan: Correlation between growth characters in Vanilla, Journal of Indian Spices and Aromatic Crops, 1994, 155-157

1993

- 135.P.G.Sankaran and N.Unnikrishnan Nair: Characterizations by residual life distributions, Statistics, 1993, 24(3), 245-251.
- 136.P.G.Sankaran and N.Unnikrishnan Nair: On form-invariant length biased models from Pearson family, Journal of the Indian Statistical Association, 1993, 31(2), 85-89.
- 137.P.G.Sankaran and N.Unnikrishnan Nair: Some characterizations of the geometric law, Proceedings of the Mahalanobis Birth Centenary Symposium, 1993, 69-78.

- 138.P.G.Sankaran and N.Unnikrishnan Nair: Bivariate variance residual life, IAPQR Transactions, 1993, 18(2), 1-6.
- 139.P.G.Sankaran and N.Unnikrishnan Nair: A bivariate Pareto model with applications to reliability, Naval Research Logistic Quarterly, 1993, 40, 1013-1020.

1991

- 140.N. Unnikrishnan Nair and P.G.Sankaran: Characterization of the Pearson family of distributions, IEEE Transactions on Reliability, 1991, 22, 75-77.
- 141.P.G.Sankaran and N.Unnikrishnan Nair: Bivariate vitality functions, Proceedings of the Symposium on Distributions Theory, 1991, 61-71.

B. Books

1. N.Unnikrishnan Nair, P.G.Sankaran and N.Balakrishnan : Quantile based Reliability Analysis, Published by Springer, Birkhauser, New York, 2013
2. P.G.Sankaran and S.M.Sunoj: The Collected Papers of Prof.N.Unnikrishnan Nair, Published by Department of Statistics, Cochin, 2007.
3. N. Unnikrishnan Nair and P.G.Sankaran: Statistical Methods for Quality and Reliability, Published by Education Publishers and Distributors, Ernakulam, 1998.

C. Technical Reports

1. P.G. Sankaran, Dewan, I. and Sreedevi, E.P.: A Class of General Tests for Testing Independence of Failure Time and Cause of Failure in a Competing Risks Model. Technical Report, Indian Statistical Institute, New Delhi, 2009
2. P.G.Sankaran, S.M.Sunoj and Sreedevi E.P: A Study on Population Changes in Corporation of Cochin, 2005.
3. P.G.Sankaran, S.M.Sunoj and Sreedevi Menon: A General Health Profile of Corporation of Cochin, 2003.

Invited Talks in Conferences/ Seminars/ Workshops

1. Delivered a talk on “A Class of Bivariate Weibull Distributions and its Applications ” in International Conference on Theory and Applications of Statistics and Information Sciences and Annual Conference of ISPS, Bharathiar University, Coimbatore, January 5-7, 2018.
2. Delivered a talk on “Quantile Regression Models for the Analysis of Middle Censored Data” in 2017 IISA International Conference on Statistics, December 27-30,2017.
3. Resource person on “Reliability” in the Four day Workshop on “Time- to -Events and Time Series Data Analysis using R”, Department of Statistics, CUSAT, December 15-18,2017.
4. Resource person in a one day seminar on “Applied Statistical Techniques”, St. Joseph College Irinjalakuda, Thrissur, November 30,2017.
5. Resource person in a one day seminar on “Applied Statistics”, St. Mary’s College , Thrissur, September 26, 2017.
6. Delivered a talk on National Conference on “Recent Advancements in Statistics and their Applications to Society”, University of Pune, March 23-25, 2017
7. Delivered a talk on Annual Conference of Kerala Statistical Association, University of Kannur, February 17-18, 2017.
8. Delivered a talk in Second International Conference on Statistics for Twenty- first Century-2016, University of Kerala, December, 21-23, 2016.
9. Delivered a talk in International Symposium on Statistics and Optimization in conjunction with XXXVI Annual Convention of ISPS and Seminar on Statistical Inference, Sampling and Optimization Techniques and Related Areas, Aligarh Muslim University, December, 17-19, 2016.
10. Resource person for International Workshop on Reliability Theory and Survival Analysis, University of Pune, November 3-5, 2016
11. Delivered a talk on Frailty Models in the Kerala Statistical Association Conference, Nirmala College, Muvattupuzha, February 12-13. 2016.
12. Delivered a talk in the National Seminar, Department of Mathematics, Mercy College, Palakkad, January 29, 2016.
13. Delivered a talk in the International Indian Statistical Association Conference, Dept. of Statistics, University of Poona, Pune, 20-24, December 2015
14. Delivered a talk in the International Seminar on Distribution Theory and Related Areas, Dept. of Statistics, University of Kerala, Trivandrum, 17-19, December 2015
15. Delivered a talk in the International Workshop on Distribution Theory and Related Areas, Dept. of Statistics, University of Kerala, Trivandrum, 14-16, December 2015
16. Delivered a talk on Survival Analysis in the National seminar at Govt. Victoria College, Palghat, 23-24, November 2015
17. Delivered a talk on Statistical Inference in the Workshop on Optimizations Techniques at LBS Engineering College, Trivandrum, 20-24, July 2015
18. Delivered a talk on Statistical Modeling and Applications in International Conference on New Horizons in Presidency College, Chennai, 27-28, February, 2015.

- 19 Delivered a talk in International workshop on Reliability Theory and Time Series Analysis, CUSAT, Cochin, January 5-7, 2015 .
- 20 Delivered a talk in National Seminar on Recent Advances in Statistics, University of Pune, January 2-3, 2015
- 21 Delivered a talk in Annual conference of ISPS, S.V. University, Tirupati, November 30- December 2, 2014
- 22 Delivered a talk International Conference on Stochastic Modelling, St.Thomas College, Pala, January 3-5, 2014
- 23 Attended international Workshop on Reliability Theory and Survival Analysis, CUSAT, Cochin, December 31, 2013- January 2, 2014
- 24 Delivered talk in the International Conference on Role of Statistics in Advancement of Science and Technology, University of Pune, December 16-18, 2013
- 25 Served as resource person in the UGC sponsored National Seminar on “Process capability studies with special emphasis on computational techniques and recent trends in Statistics, Nirmala Colloge, Muvattupuzha, 3-5, October, 2013
- 26 Served as resource person in the Workshop on Random Processes and Applications, College of Engineering, Karunagappally, September 10, 2013
- 27 Attended Workshop on Statistical Analysis of Time Series Data with Applications, CUSAT, January 14-16, 2013
- 28 International Conference on Statistics, Science and Society: New Challenges and Opportunities, University of Madras, Chennai, January 2-5, 2013.
- 29 National Conference on Statistics for 21st Century, University of Kerala, December 10-12, 2012
- 30 Workshop on Reliability Theory and Survival Analysis, IIT, Kanpur, December 3-5, 2012
- 31 Workshop on Reliability, Survival Analysis and Industrial Statistics, University of Pune, November 9-10, 2012
- 32 International Symposium on Business and Industrial Statistics, Chulalongkorn University, Bangkok, June 17-21, 2012
- 33 National Seminar on Recent Developments in Statistics, Pondicherry University, Pondicherry, February 2-3, 2012
- 34 Annual Convention of ISPS and International Conference on Statistics, Probability and related Areas, Cochin University of Science and Technology, Cochin, December, 19-22, 2011
- 35 Workshop on Reliability Theory and Survival Analysis, Indian Statistical Institute, Kolkata, November 23-25, 2011
- 36 National Seminar on Stochastic Modelling and Analysis, Cochin University of Science and Technology, Cochin, March 24-25, 2011
- 37 National Seminar on Statistics in 21st Century, University of Kerala, Trivandrum, March 17-19, 2011
- 38 National Seminar on Advances in Statistics, Calcutta University, Kolkata, January 28-29, 2011
- 39 Workshop on Reliability Theory and Survival Analysis, Indian Institute of Technology, Mumbai, November 25-27, 2010
- 40 International Conference on Business and Industrial Statistics organized by International Society for Business and Industrial Statistics, Protrose, Slovenia, July 5-9, 2010

- 41 International Conference on Probability, Statistics, Operations Research, Computer Science and Related areas, IISA & ISPS annual conference, Andhra University, Vysag, January 4-8, 2010.
- 42 Mathematical Methods in Reliability Conference, Glasgow, U.K., July 1-4, 2007.
- 43 IISA Workshop on Financial Mathematics, Cochin, January 6, 2007.
- 44 IISA Joint Statistical Meeting and International Conference on Statistics, Probability and Related Areas, Cochin, January 2-5, 2007.
- 45 National Seminar on Modeling and Analysis of Life time Data, Cochin University of Science and Technology, February 20-22, 2006.
- 46 International Conference on Reliability, Survival analysis and related areas, ISI, New Delhi, December 20-22, 2005.
- 47 International Conference on Statistical Inference and Stochastic Processes, University of Pune, January 8-10, 2006.
- 48 International Conference on Reliability, Statistics and Related Areas, Indian Institute of Management, Calicut, January 6-8, 2005.
- 49 International Srilankan Conference, University of Perideniya, December 28-30, 2004
- 50 UGC Sponsored Refresher Course, Department of Statistics, CUSAT, November, 2004
- 51 Annual Conference of ISPS, St.Thomas College, Pala, November 2004
- 52 Annual Conference of ISPS, Nagarjuna University, Guntur, December 2003.
- 53 International Conference on Statistics in Industry and Business, Cochin, January 2003.
- 54 Annual Conference of ISPS, University of Pune, Pune, December 2001.
- 55 Annual Conference of ISPS, University of Chandigarh, Chandigarh, December 2001.
- 56 International Conference on Reliability Analysis, University of Pune, June 2001.
- 57 Workshop on Bayesian Inference and its Applications, Indian Statistical Institute, March 2001.
- 58 Workshop on ISO 9000, Third Edition and Cost of Quality, Cochin, January 2001.
- 59 International Symposium on 'Development of Statistics in 21st Century', University of Madras, USA, June 2000.
- 60 International Conference on 'Statistics in 21st Century', University of Maine, USA, June 2000.
- 61 National Seminar on 'Probability Models and Applied Statistics', University of Calicut, February 2000.
- 62 National Conference on 'Reliability Analysis', Cochin University of Science and Technology, December 1999.
- 63 International Conference on 'Stochastic Processes and their Applications', Cochin University of Science and Technology, December 1999.
- 64 International Conference on 'Combinatorics, Statistics, Pattern Recognition and Related Areas', University of Mysore, December 1998.
- 65 National Seminar on 'Development in Statistical Science', Bangalore University, August 1998.
- 66 National Seminar on 'Stochastic Systems', Mangalore University, February 1998.
- 67 UGC Sponsored Refresher Course, Department of Statistics, CUSAT, March, 1997
- 68 Workshop on QS 9000, Cochin, January 1997.
- 69 International Conference on 'Quality Improvement through Statistical Methods', Cochin University of Science and Technology, December 1996.

- 70 Annual Conference of Indian Society for Probability and Statistics, Thirunelveli, December 1994.
- 71 International Symposium on plantation crops, NRCS, Calicut, November 1994.
- 72 Annual Conference of Indian Society of Agricultural Statistics, Thrissur, February 1994.

Extension Activities

1. Reviewer of American Mathematical Review, U.S.A.
2. Reviewer of international Statistics journals such as Multivariate Analysis, Computational Statistics and Data Analysis, Statistics and Probability Letters, Statistics, Communications in Statistics- Theory and Methods, Statistical Papers, Journal of Japan Statistical Association, Journal of Applied Statistics, Journal of Indian Statistical Association, Bulletin of Calcutta Statistical Association
3. Resource Person for UGC sponsored Refresher course for University/College teachers conducted by Academic Staff College, University of Calicut, 2001.
4. Resource Person for UGC sponsored Refresher course for University/College teachers conducted by Department of Statistics, Victoria College, Palakkad, 2001.
5. Resource Person for UGC sponsored Refresher course for University/College teachers conducted by Academic Staff College, University of Kerala, Thiruvananthapuram, 2001.
6. Resource person for Research Scholars Meet at Indian Statistical Institute, Kolkata, 19-21, February 2014
7. Coordinator, Admission Test of Indian Statistical Institute, Kolkata (2012 - 2017).