

## CURRICULUM VITAE

- Name** : **DEBASIS BHATTACHARYA**  
**Permanent Address** : 10 Galiff Street, Block #6, Flat #67, Calcutta-700003  
**Present Position and Affiliation** : Professor of Statistics (since August, 2006),  
Department of Agricultural Statistics, Institute of Agriculture, Visva-Bharati University, Santiniketan, W.B, India  
**Research Interests** : Statistical Inference, Probability, Risk Analysis, Reliability engineering  
Asymptotic theory, LAMN and LAQ related problems, Bayesian Inference  
**Academic Qualification** : Ph.D.(Statistics) (Title of Thesis: Asymptotic Properties of Log-likelihood Ratios for Dependent Processes)

### **Administrative Experience :**

Served as Professor-in-charge, Academic and Research of Visva-Bharati university during 2012-2014.  
Served as Department Head during June, 2009-December, 2014

### **Academic Career:**

B.Sc. (Honours) in Statistics from the University of Calcutta in the year 1982  
M.Sc. in Statistics from the University of Calcutta in the year 1984 and stood First  
Ph.D. from the University of Calcutta in the year 1992

### **Administrative Experience:**

Serving as Dean, Institute of Agriculture, Visva-Bharati, since September 2019  
Serving as Chair Professor, A.K. Dasgupta Centre for Planning and Development, Niti Ayog  
Serving as Department Head since November 2016

### **Teaching Experience:**

Since 1989, 31 years of teaching experience at both, undergraduate and postgraduate levels.  
Visiting Professor in the Department of Statistics, University of California, Davis, USA, since 1998  
Visiting Fellow (under UGC-SAP), Department of Statistics, Panjab University, Chandigarh, 2011. 2014  
Visiting Fellow (under UGC-SAP), Department of Statistics, Sardar Patel University, Vallbh Vidyanagar, Anand, Gujrat, 2019

### **Publication Summary:**

**Total publications: 110** (published with renowned international publishers like Elsevier, Marcel Dekker, Kluwer, Wiley, Springer, Taylor and Francis, World Scientific, Sage, Allerton Press, IMS etc.)  
Journals of International Repute: 51; Reputed National Journals : 21; Books Authored : 8; Book Chapters : 19; Technical Reports: 9; Books Edited : 2

### **Research Grants:**

Grant from Teaching Resources Center, University of California, Davis, California, USA.  
Grant from University Grants Commission in the form of fellowship.  
Partial Financial Grant for research from Visva-Bharati.

### **Award**

“Distinguished Statistician” has been conferred by the Indian Society for Probability and Statistics.

**Membership of Learned Society:**

The American Statistical Association, The Institute of Mathematical Statistics, USA, Indian Statistical Institute, Calcutta Statistical Association, Indian Science Congress Association, Indian Association for Productivity, Quality and Reliability

**International research collaboration:** Collaborative research work done at the University of California, Davis, USA

**Supervised Ph.D. Students:** Awarded: 4, Continuing: 5

**Editorial Responsibility:**

Editor of the Journal “Stochastic Modeling and Applications”: ISSN: 0972-3641

Managing Editor of “International Journal of Statistics and Management System” ISSN:0973-7359

Editorial Board Member of the “Journal of the Indian Society for Probability and Statistics”

**Visited Universities abroad for Academic purpose:**

Stanford University, USA (2000), Purdue University, USA (1995), University of California, Davis, USA (1998-2001, 2006, 2007, 2008, 2009, 2012), Korea University, Seoul (1998), National University of Singapore, Singapore (2002), Kazakhstan

Institute of Management, Economics and Strategic Research (KIMEP)(2003), Rice University, Houston, Texas, USA (2004), Fu Jen University, Taipei, Taiwan (2007), National Cheng- Kung University, Tainan, Taiwan (2008)

**Referee /Reviewer of the journals:**

Journal of Inequality and applications, Statistics and Probability Letters, Journal of Statistical Planning and Inference, Journal of Multivariate Analysis, Communication in Statistics; Theory and Methods, Naval Research Logistics, Journal of Applied Statistics, Sankhyā, Model Assisted Statistics and Applications, Calcutta Statistical Association

**List of Publications of Debasis Bhattacharya:****1988-1997**

1. Basu, A.K. and Bhattacharya, D. (1988), Local Asymptotic Mixed Normality of Log-likelihood Based on Stopping Times, Calcutta Stat. Assoc. Bull., 37, Nos. 147- 148, pp. 143-159, Sage publications.
2. Basu, A.K. and Bhattacharya, D. (1990), Weak Convergence of Randomly Stopped Log-likelihood Ratio Statistic to Mixed Gaussian Process, Calcutta Stat. Assoc. Bull., 39, Nos.155-156, pp.137-149, Sage publications.
3. Basu, A.K. and Bhattacharya, D. (1992), On the Asymptotic Non-null Distribution of Randomly Stopped Log- likelihood ratio Statistic, Calcutta Stat. Assoc. Bull., 42, Nos. 167-168, pp. 225-260, Sage publications.
4. Basu, A.K. and Bhattacharya, D. (1993), On the Speed of Convergence in the Central Limit Theorem of Log-likelihood Ratio Process, Journal of Theoretical Probability, 6, No.4, pp.619-634, Springer publications.
5. Basu, A.K. and Bhattacharya, D. (1994), On the Speed of Convergence in the Central

- Limit Theorem of Sequential Log-likelihood Ratio Process, Sequential Analysis, 13(2), pp.97-111, Taylor and Francis publications.
6. Basu, A.K. and Bhattacharya, D. (1994), On the Speed of Convergence in the Central Limit Theorem of Sequential Log-likelihood Ratio Process to Standard Mixture of Normal Distributions, Indian Journal of Pure and Applied Mathematics, Published by the Indian National Science Academy, 25, pp.1017-1029.
  7. Bhattacharya, D., Gangopadhyay, P.K. and Sahu, J. (1997), Real Adoption impact – A New Approach of Measuring Adoption, Bangladesh Journal of Agricultural Science, 24(1), pp.85-90, Bangladesh Agricultural University, Mymensingh publications.
- 1998-2007**
8. Basu, A.K. and Bhattacharya, D. (1998), On Fixed-width Confidence Intervals Associated with Maximum Likelihood Estimation of Parameter under Dependent Set-up, Mathematical Methods of Statistics, 7(4), pp.466-478.
  9. Bhattacharya, D. and Roussas, G.G. (1999), On Asymptotically Efficient Tests for Autoregressive Process, Stochastic Modeling and Applications, Vol.2, pp.17-30.
  10. Basu, A.K. and Bhattacharya, D. (1999), Asymptotic Minimax Bounds for Sequential Estimators of Parameters in a Locally Asymptotically Quadratic Family, Brazilian Journal of Probability and Statistics, 13, pp.137-148.
  11. Roussas, G.G. and Bhattacharya, D. (1999), Some Asymptotic Results and Exponential Approximation in Semi-Markov Models, Chapter 8, Semi-Markov Models and Applications, pp.149-166, Eds. J. Janssen and N. Limnios, Kluwer Academic Publishers.
  12. Roussas, G.G. and Bhattacharya, D. (1999), Asymptotic Behavior of the Log-likelihood Function in Stochastic Processes when based on a Random Number of Random Variables, Chapter 7, Semi-Markov Models and Applications, pp.119-147, Eds. J.Janssen and N. Limnios. Kluwer Academic Publishers.
  13. Bhattacharya, D. and Roussas G.G. (2001), Exponential Approximation for Randomly Stopped Locally Asymptotically Mixture of Normal Experiments, Stochastic Modeling and Applications, 4, pp.56-71.
  14. Roussas G.G., Bhattacharya, D. (2002), Exponential approximation of distributions, Teor. Imovirmost. ta Matem. Statyst, 62, also in Technical Report # 347, Division of Statistics, University of California, Davis.
  15. Bhattacharya, D. (2003), Asymptotic Efficiency of Estimates of Parameters for a Locally Asymptotically Mixed Normal Family under Asymmetric Loss, Proceedings of the International Conference on Advances in Statistical Inferential Methods, Almaty, Kazakhstan, pp.31-40.
  16. Bhattacharya, D., Samaniego, F.J. and Vestrup, E.M. (2003), On the Comparative Performance of Bayesian and Classical Point Estimators under Asymmetric Loss, Sankhya (Series B), 64, pp.239-266.
  17. Roussas, G.G. and Bhattacharya, D. (2003), Exponential Approximation of Distributions, Theory of Probability and Mathematical Statistics (American Mathematical Society), 66, pp.119-132.

18. Bhattacharya, D. and Basu, A.K. (2004), On the Speed of Convergence of Randomly Stopped Log-likelihood Ratio Processes to Standard Mixture of Normal Distributions, *Stochastic Modeling and Applications*, 7(1), pp.44-60.
19. Levine, R.A. and Bhattacharya, D. (2005), On Asymptotically Efficient Sequential Tests for Auto-regressive Time Series with a Unit Root, *Journal of Probability and Statistical Science*, 2(3), pp.213-228, Susan River's Cultural Institute publications, Taiwan.
20. Bhattacharya, D. and Basu, A.K. (2006), Local Asymptotic Minimax Risk Bounds in a Locally Asymptotically Mixture of Normal Experiments under Asymmetric Loss, *Lecture Notes-Monograph Series*, 49, pp.312- 321, Institute of Mathematical Statistics Publications.
21. Bhattacharya, D. and Levine, R.A. (2007), Bayesian Estimation and Prior Selection for the AR (1) Model using Asymmetric Loss Function, *Journal of Applied Statistical Science*, 15(3), pp.295-304, Nova Publications, USA.
22. Samaniego, F.J., Vestrup, E.M. and Bhattacharya, D. (2007), On Constrained Estimation from Time-Use Survey data, *Statistics and Probability Letters*, 77, pp.204-210, Elsevier publications.

### 2008-2017

23. Jorge, N., Samaniego, F.J., Balakrishnan, N. and Bhattacharya, D. (2008), On the Application and Extension of System Signatures to Problems in Engineering Reliability, *Naval Research Logistics*, 55, pp.313-327, Wiley inter Science publications.
24. Roussas, G.G. and Bhattacharya, D. (2008), Hájek-Inagaki Representation Theorem for Randomly Stopped Locally Asymptotically Mixture of Normal Experiments, *Statistical Inference for Stochastic Processes*, DOI: 10.1007/s11203-008-9029-0, pp.185-201, Springer publications.
25. Roussas, G.G. and Bhattacharya, D. (2008), Hájek-Inagaki Representation Theorem, under a General Stochastic Processes Framework, based on Stopping Times, *Statistics and Probability Letters*, 78, pp. 2503-2510, Elsevier publications.
26. Roussas, G.G. and Bhattacharya, D. (2008), Asymptotic Expansions, Exponential Approximation, and the Hájek-Inagaki Representation Theorem under a General Dependence Set-up, *Proceedings of 20th Annual meeting of the Pan-Hellenic (Greek) Statistical Institute*, pp.45-65.
27. Bhattacharya, D and Samaniego, F.J. (2008), On the Optimal Allocation of Components within Coherent Systems, *Statistics and Probability Letters*, 78, pp.938-943, Elsevier publications.
28. Roychowdhury, S. and Bhattacharya, D. (2008), A Note on Comparison of Performances of Systems of Different Order, *Journal of Applied Statistical Science*, 16 (3), pp.293-301.
29. Roychowdhury, S and Bhattacharya, D. (2008), On the performance of estimators of parameter in autoregressive model of order one and optimal prediction under asymmetric loss, *Model Assisted Statistics and Applications*, 3(3), pp. 225-232. IOS publications, The Netherlands.
30. Roychowdhury, S. and Bhattacharya, D. (2009), Rearrangement of components in a

- system using component importance measures, *Journal of Statistical Theory and Practice*, 3(4), pp.841-854, Taylor and Francis publications.
31. Roussas, G.G. and Bhattacharya, D. (2010), Asymptotically optimal tests under general dependence set-up, Special issue in honor of Prof. B. Efron, *Journal of Statistical Research*, 44(1), pp. 57-83.
  32. Bhattacharya, D. and Samaniego, F.J. (2010), On estimating component characteristics from system failure-time data. *Naval Research Logistics*, 57, pp.380-389, Wiley inter Science publications.
  33. Roussas, G.G. and Bhattacharya, D. (2010), Revisiting Local Asymptotic Normality (LAN) and passing on to Local Asymptotic Mixed Normality (LAMN) and Local Asymptotic Quadratic Experiments (LAQ), A Festschrift in honor of Prof. J. S. Rao, Eds. Wells, M.T. and Sen Gupta, A., pp.253-280, Physica-Verlag (Springer).
  34. Samaniego, F.J. and Bhattacharya, D. (2010), A conversation with George Roussas, *Statistical Science*, 25(4), pp. 566-587, Institute of Mathematical Statistics publications.
  35. Roychowdhury, S. Bhattacharya, D. (2010), Improving System Reliability using Conditional Reliability Importance, *Proceeding of the Institution of Mechanical Engineering, Part O, Risk and Reliability*, Vol.225, pp.91-99, Sage publications.
  36. Roychowdhury, S. Bhattacharya, D. (2010), On Estimation of Regression Parameter under Asymmetric Loss, *Journal of Applied Probability and Statistics* (2011), 5(2), pp. 161-168, Dixie publications, USA.
  37. Roychowdhury, S. Bhattacharya, D. (2011), Effect of Dependence of Components on the System Performance (2011), *International Journal of Pure and Applied Mathematics*, 66(1), pp. 91-112, Academic publications, Bulgaria
  38. Roychowdhury, S. Bhattacharya, D. (2011), Comparison of Lifetimes of Coherent Systems using a Stochastic Ordering Criterion, *Model Assisted Statistics and Applications*, 6(4), pp. 287-305, IOS publications, The Netherlands.
  39. Roychowdhury, S. Bhattacharya, D. (2011), On the Selection of a Best System from a Group of Systems with Mutually Dependent Component Lives, *Statistical Methods in Optimization and Operations Research, Model Assisted Statistics and Applications*, 6 (3), pp.239-247, IOS publications, The Netherlands.
  40. Roussas, G.G. and Bhattacharya, D. (2012), Density Estimation by Sampling from Stationary Continuous Time Parameter Associated Processes Nonparametric Statistical Methods and Related Topics, A Festschrift in Honour of Prof. P.K. Bhattacharya, Eds. J. Jiang, G.G. Roussas, F.J. Samaniego, Chapter 5, pp.101-125, *World Scientific*.
  41. Bhattacharya, D. and Roychowdhury, S. (2013), A General Rule for Optimally Allocating Redundant Components in a Coherent System, *American Journal of Mathematical and Management Sciences*, 32(2), pp.101-117, Taylor & Francis publications.
  42. Bhattacharya, D. and Roychowdhury, S. (2013), Reliability of a Coherent System in a Multi- component Stress-strength Model, *American Journal of Mathematical and Management Sciences*, 32(1), pp.40-52, Taylor & Francis Publications.
  43. Bhattacharya, D. and Roychowdhury, S. (2013), An Optimal Policy for Solving a

- Generalized Problem of Constrained Redundancy Allocation in Coherent Systems, American Journal of Mathematical and Management Sciences, 32(4), pp.210-227, Taylor & Francis publications.
44. Bhattacharya, D. and Roychowdhury, S. (2013), Optimal Redundancy Allocation Rule for Improving System Life (2013), Journal of Uncertainty Analysis and Applications, 1(14), pp.1-9, Springer publications.
  45. Bhattacharya, D. and Roychowdhury, S. (2013), On Comparison of Performances of Competing Supply Chain System Designs, Unlock Management, 4(1), pp.25-31. (ISSN: 0975-8038), Solapur University publications.
  46. Bhattacharya, D. and Roychowdhury, S. (2014), A Constrained Cost Minimizing Redundancy Allocation Problem in Coherent Systems with Non-Overlapping Subsystems, Advances in Industrial Engineering and Management, 3(3), pp.1-6, American Scientific publishers.
  47. Bhattacharya, D. and Roychowdhury, S. (2014), A Study on Estimation of Reliability of a Coherent System under Field Condition, Model Assisted Statistics and Applications, Special Issue on Statistical Estimations in Complex Problems, 9(2), pp.181-189, IOS publications, The Netherlands.
  48. Dhakre, D. S. and Bhattacharya, D. (2014), A Study on the Consumption Pattern of NPK in Midnapur District and West Bengal, Environment and Ecology, 32(1A), 225-229.
  49. Dhakre, D. S. and Bhattacharya, D. (2014), Price Behavior of Potato in Agra Market – A Statistical Analysis, Indian Research Journal of Extension Education, 14(2), 12-15.
  50. Bhattacharya, D. and Roychowdhury, S. (2014), Redundancy Allocation using Component-Importance Measures for Maximizing System Reliability, American Journal of Mathematical and Management Sciences, 33(1), pp.36-54, Taylor and Francis publications.
  51. Roychowdhury, S. Bhattacharya, D. (2015), Stochastic Optimization of System Performance using Cold-Standby Redundancy (2015), American Journal of Mathematical and Management Sciences, 34(1), pp.1-13, Taylor and Francis publications.
  52. Roychowdhury, S. Bhattacharya, D. (2015), On Constrained Reliability Maximization using Active Redundancy in Coherent Systems with Non-Overlapping Subsystems (2015), *An International Journal of Optimization and Control: Theories and Applications*, 5(1), pp.33-39.
  53. Bhattacharya, D. and Roychowdhury, S. (2015), Performance-based Ranking and Selection of Complex Coherent Systems, International Journal of Systems Assurance Engineering and Management, 6(1), S82-S89, Springer publications.
  54. Bhattacharya, D. and Roychowdhury, S. (2015), On Performance of Competing Estimators under Bayes, Frequentist and Combined Frameworks, American Journal of Mathematical and Management Sciences 34(3), pp.265-288, Taylor & Francis publications.
  55. Bhattacharya, D. and Roychowdhury, S. (2016), Bayesian Importance Measure Based Approach for Optimal Redundancy Assignment, American Journal of Mathematical and Management Sciences, 35(4), pp.335-344, Taylor & Francis publications.

56. Bhattacharya, D. and Roychowdhury, S. (2016), A Redundancy Strategy for Minimizing Cost in Systems with Non-Disjoint Subsystems under Reliability Constraint, *International Journal of Systems Assurance Engineering and Management*, DOI 10.1007/s13198-016-0499-y, Springer publications.
57. Bhattacharya, Debasis and Roussas, George G. (2017), Limiting Experiments and Asymptotic Bounds on Performance of Sequence of Estimators, *From Statistics to Mathematical Finance*, Festschrift in Honour of Winfried Stute, Editors: D. Ferger, W.G. Manteiga T. Schmidt and J.L. Wang, Chapter 16, 317-342, Springer publications
58. Roychowdhury, Soma and Bhattacharya, Debasis (2017), Uncovering Data for Decision Making with Critical Statistical Analysis, *Statistical Tools and Analysis in Human Resources Management*, Editor: D. K. Bhattacharyya, Chapter 3, 38-53, IGI Global
59. Dash, A., Dhakre, D.S. and Bhattacharya, D. (2017), Study of growth and instability in food grain production of Odisha: a statistical modelling approach, *Environment & Ecology*, 35(4D), 3341-335.
60. Dash, Abhiram, Dhakre, D.S. and Bhattacharya, D. (2017), Fitting of Appropriate model to study growth rate and instability of mango production in India, *Agricultural Science Digest*, 37(3), 191-196.
61. Dash, A., Dhakre, D.S. and Bhattacharya, D. (2017), Analysis of growth and instability in pulse production of Odisha during Rabi season: A statistical modelling approach, *International journal of Current Microbiology and Applied Sciences*, 6(8), 107-115.
62. Dash, A., Dhakre, D.S. and Bhattacharya, D. (2017), Fitting of appropriate statistical model for study of growth and instability in cereal production of Odisha, *Journal of Pharmacognosy and Phytochemistry*, 6(5), 2495-2499.
63. Dash, A., Dhakre, D.S. and Bhattacharya, D. (2017), Analysis of growth and instability in rice production of Odisha by fitting appropriate statistical models, *International journal of Current Microbiology and Applied Sciences*, 6(10), 3313-3322.

## **2018-2020**

64. Bhattacharya, Debasis and Roychowdhury, Soma (2018). Optimal Redundancy Allocation in Homogeneous Multi-State Coherent Systems, *American Journal of Mathematical and Management Sciences*, Vol. 37(4), 358-369, Taylor and Francis.
65. Roychowdhury, Soma and Bhattacharya, Debasis (2018). Configurational Significance of Multi-State Components, *A Multi-State Parallel-Series System in Contemporary Corporate Strategies: Global Perspectives* (ISBN:978-93-87665-56-9), 129-136, Success Publication.
66. Roychowdhury, Soma and Bhattacharya, Debasis (2018). Uncovering Data for Decision Making with Critical Statistical Analysis, *Statistical Tools and Analysis in Human Resources Management*, Ed. Dipak Kumar Bhattacharyya, ISBN 9781522549475 (hardcover), ISBN9781522549482 (ebook), IGI Global, USA.
67. Dhakre, D.S. and Bhattacharya D. (2018). Statistical Analysis Step-By-Step Using Statistical Calculator, *International journal of Current Microbiology and Applied Sciences*, 7(11), 901-921

68. Pal, A., Dhakre, D.S., and Bhattacharya, D. (2019), Real Adoption impact measure of rice production using SRI methodology, *Journal of Pharmacognosy and Phytochemistry*, 8(1), 208-212.
69. Nath, B, Dhakre, D.S., and Bhattacharya, D. (2019), Forecasting wheat production in India: An ARIMA modelling approach, *Journal of Pharmacognosy and Phytochemistry*, 8(1), 2158-2165.
70. Roychowdhury, Soma and Bhattacharya, Debasis (2019). Performance Improvement of a Multi-State Coherent System using Component Importance Measure (2019), *American Journal of Mathematical and Management Sciences*, 38 (3), 312–324
71. Dash, A. , Bhattacharya, D. and Dhakre D.S. (2019), Use of regression model and ARIMA model for forecasting kharif food grain production of Odisha: A comparative study, *International Journal of Multidisciplinary Research and Development* , 6(12), 107-116, Online ISSN: 2349-4182, Print ISSN: 2349-5979
72. Nath, Bhola, Dhakre, D. S., Sarkar , K. A. and Bhattacharya, D. (2020): The challenge of selecting the best forecasting model for a time series data, *Journal of Food, Agriculture & Environment*, 18 (2), 97 –102 .
73. Roussas, George G., Bhattacharya, Debasis (2020): Conversation with Francisco J. Samaniego, *Statistical Science*, 35( 2), 321–333.

### **Technical Reports (1991-2001)**

74. On the speed of convergence in the central limit theorem of log-likelihood ratio process (1991), Technical Report #3/91, Department of Statistics, Calcutta University, A. K. Basu and D. Bhattacharya)
75. Asymptotic behavior of the log-likelihood function in stochastic processes when based on a random number of random variables (1999), Technical Report # 346, Division of Statistics, University of California, Davis, Roussas, G.G. and Bhattacharya, D.
76. Exponential Approximation of Distributions (1999). Technical Report # 347, Division of Statistics, University of California, Davis, Roussas, G.G. and Bhattacharya, D.
77. Some asymptotic results and exponential approximation in semi-Markov models (1999), Technical Report # 348, Division of Statistics, University of California, Davis, Roussas, G.G. and Bhattacharya, D.
78. Exponential approximation for randomly stopped locally asymptotically mixture of normal experiments (2000), Technical Report # 361, Division of Statistics, University of California, Davis, Roussas, G.G. and Bhattacharya, D.
79. Bayesian Estimation and prior selection for the AR (1) model using asymmetric loss Function (2000). Technical Report # 353, Division of Statistics, University of California,

Davis, Levine, R. A. and Bhattacharya, D.

80. On the comparative performance of Bayesian and classical point estimators under asymmetric loss (2001). Technical Report, Division of Statistics, University of California, Davis, Bhattacharya, D., Samaniego, F.J. and Vestrup, E.M.
81. On asymptotically efficient sequential tests for auto-regressive time series with a unit root (2001). Technical Report, Division of Statistics, University of California, Davis: Bhattacharya, D. and Levine, R.A.
82. On Constrained Estimation from Time-Use Survey data (2001). Technical Report, Division of Statistics, University of California, Davis: Samaniego, F.J., Vestrup, E.M., and Bhattacharya, D.

### **Book chapters (2010-2016)**

83. An Approach to Improving System Reliability of Coherent Systems by Rearranging the Components (2010), A chapter in the edited book *Operations and Management Sciences 2010*, pp. 453-458, Eds. J. Sharma and S. Maheswaran, Excel India Publishers (jointly with S. Roychowdhury) (ISBN 978-93-80043-79-1)
84. Risk Management in System Performance (2010), A chapter in the edited book *Project Risk Management: Identifying, Forecasting and Mitigating Project Risk*, pp. 106- 113, Eds. Sabita Pathak and Sarika Sharma, Wright Publication (jointly with S. Roychowdhury) (ISBN 979-9087533821)
85. Risk of System Failure Under Dependent Set Up (2011), A chapter in the edited book *A New Blue Print for Management in 21<sup>st</sup> Century*, pp. 99-105, Eds., S. H. Gawhane and O. P. Haldar, Himalaya Publishing House, (jointly with S. Roychowdhury) (ISBN 978-93-5024-769-3)
86. Estimating Risk of Failure of Systems with Positively Dependent Component Failures (2011), A chapter in the edited book *'The Rousing Challenges of Management Systems and Practices in 21st Century'*, pp.101-105, Eds., E. B. Khedkar and O. P. Haldar, Himalaya Publishing House, (jointly with S. Roychowdhury) (ISBN 978-93-5051-476-4)
87. Managing Change in System Reliability with the Change in Environmental Variable (2011), A chapter in the edited book *Information Technology Management*, pp. 87-92, Eds. Sabita Pathak and Sarika Sharma, Right Publishing & Press, (jointly with S. Roychowdhury) (ISBN 978-3-8454-4046-0)
88. Statistics for Impact Analysis (2012), A chapter in the edited book *Statistics in Social Science and Agricultural Research*, pp.233-242, Eds. Debasis Bhattacharya and Soma Roychowdhury, Concept Publishing Company Pvt. Ltd. (ISBN-13: 978-81-8069-822-4)
89. Assessing Risk of Failure of a Parallel Series System under Dependent Set-up (2012), A chapter in the edited book *Innovation for Organizational Excellence*, pp.3-11, Eds. Manoj W. Meghrajani, Himalaya Publishing House, (jointly with S. Roychowdhury) (ISBN 978-93-5051-684-3)

90. Performance Management of a Coherent System under Field Conditions (2012), A chapter in the edited book *Technology and Business Innovation*, pp.20-26, Eds. Sabita Pathak and Sarika Sharma, Wright publications, (jointly with S. Roychowdhury) (ISBN: 978-3-659-27554-8)
91. A Quantitative Approach to Assessing Stress-Strength Stability (2013), A chapter in the edited book *Economic Reforms: Problems and Prospects before Indian Industries*, pp. 95-99, Eds. Sharad, N. Inamdar, Manoj W. Meghrajani and Ganesh S. Lande, Himalaya publishing House, (jointly with S. Roychowdhury) (ISBN: 978-93-5097-574-9)
92. On Comparison of Performances of Competing Supply Chain System Designs (2013), A chapter in the edited book *Blazing Trails with Strategic Management*, pp.242-248, Eds.V.S. Mangnale, Minesh S.Ade, Anjali Upadhye, Abhihek A. Khadtare and Dasharath Bhoite, published by Sinhgad Institute of Business Management, Kamalapur (jointly with S. Roychowdhury) (ISBN:978-81-921232-1-9).
93. Managing Risk of failure of a Coherent System using Component Redundancy (2013), A chapter in the edited book *Challenges and Opportunities in Business Management and Information Technology*, pp. 55-60, Eds. E.B. Khedkar and O.P. Haldar, Himalaya Publishing House, (jointly with S. Roychowdhury) (ISBN Number: 978-93-5097-528-2),
94. On Selection of the Best System Component in a Profit Maximizing Redundancy Allocation Problem (2013), A chapter in the edited book *Management Systems*, pp.21-28, Eds. Sabita Pathak, Sarika Sharma, Neha Tejwani, Wright Academic Series publications, (jointly with S. Roychowdhury) (ISBN: 978-3-8443-1537-84)
95. Managing System Reliability Through Structural Importance (2014), A chapter in the edited book *Achieving Sustainability and Growth in Challenging Time*, Eds. Sharad N. Inamdar, Manoj W. Meghrajani and Ganesh S. Lande, pp.89-96, Success Publications, (jointly with S. Roychowdhury) (ISBN 978-93-83993-09-3)
96. Reliability Comparison of Systems with Associated Component Lives (2014), A chapter in the edited book *Strategies, Challenges, Core Values and Emerging Trends in Management and IT Applications*, Eds. E. B. Khedkar and O. P. Haldar, pp.1-6, Success Publications (jointly with S. Roychowdhury) (ISBN: 978-93-83993-00-0)
97. Active Redundancy Allocation in Multi-Component Coherent Systems using Birnbaum Structural Importance Measure (2015), A chapter in the edited book *Strategies, Enhancing Employability through Skill Development Program*, Ed. Dr. B.M. Londhe, pp.155-161, Chapter E001 (Chapter 1 of Engineering track), Sharp Publications, (jointly with S. Roychowdhury) (ISBN: 978-93-5158-172-7)
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