

ACADEMIC RESUME

Name: Dr. CHHAYA DHANRAJ SONAR

Present working Position: Professor, Department of Statistics,
Dr. B. A. M. University, Aurangabad

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Educational Qualifications:

Degree	University	Percentage	Month and Year of passing
Ph. D. (Statistics)	S.P. University	--	Dec. 2012
M.Sc. (Statistics)	N.M.U. Jalgaon	60.60	May 1999
B.Sc. (Statistics)	Pune	70.00	June 1997

Other Qualifications:

SET: Qualified State Eligibility Test for lectureship in Mathematical Sciences in June 2002.

Details of Ph.D.:

Title of the Thesis: Design for Mixture Experiments

Name of the Guide: Dr. Jyoti Divecha
Department of Statistics,
Sardar Patel University,
Vallabh Vidyanagar, Anand,
Gujarat

Date of award: 15.12.2012

Qualified ISO 9001:2015 internal auditor exam

Successfully completed training on “Internal auditing for Quality Management System based on ISO 9001: 2015 held on 26th June, 2018 to 27th June, 2018 organized by Academy division of TUV SUD South Asia Pvt. Ltd.

DETAILS OF EXPERIENCE:

Institution	Position Held	Nature of Appointment	Subject	Period of Appointment with dates
N.M.U JALGAON	Lecturer	regular	Statistics	Oct. 4, 2007 TO June 19, 2008
Dr. B.A.M.U. Aurangabad	Lecturer	regular	Statistics	June 20, 2008 To till date

ORIENTATION / REFRESHER COURSES:

- 78th Orientation Course during 2nd July-29th July 2009 at Academic Staff College, Dr. B.A.M. University, Aurangabad.
- Refresher Course during 9th Dec. to 29th Dec. 2011 at Academic Staff College, Dr. B.A.M. University, Aurangabad.
- Refresher Course in Basic Science (Chemistry, Maths., Computer Science, Stats., Physics) during 3rd July 2017 to 22nd July 2017 at Academic Staff College, Dr. B.A.M. University, Aurangabad
- Short Term Course in MOOCs, e-content development and open Educational Resources during 21.1.2019 to 27.1.2019 organized by Academic Staff College, Dr. B.A.M. University, Aurangabad

PAPERS PUBLISHED:

1. "Efficient Designs for constrained categorized mixture experiments", *Journal of Probability and Statistical Science*; 9(2), 179-190, Aug. 2011. ISSN 1726-3328
(with Jyoti Rajarajan)
2. "Statistical Techniques for Estimation of Yield and Price Risk in Crop Production", *International Journal of Mathematics and Applied Statistics*, 3(1), 83-94, Jan. - Jun. 2012., ISSN : 0973-5739.
(with S.L.Sananse and Sudhakar Chinchane)
3. "An Analysis of Yield- Price Risk Associated with Cereal Crops", *International journal of Statistika and Matematika*, Volume 6, Issue2, pp 73-78, 2013 ISSN: 2277- 2790 E-ISSN: 2249-8605
(with S.L.Sananse and Sudhakar Chinchane)
4. "G-Efficient Designs for Quadratic Mixture Models", *Communication in Statistics Theory and Methods*, 42, 4417-4430, 2013, ISSN: 0361-0926 Print/ 1532-415X online. Impact Factor: 0.298
(with Jyoti Rajarajan)
5. "A study on estimation of Probability of Crop Failure and crop loss ratio of Cotton crop in Marathwada region of Maharashtra", *International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)*; ISSN 2347-6710; Volume 4, Issue 12, Dec. 2015, pp.13-21
(with S.L.Sananse and Sudhakar Chinchane)

6. “A comparative study of fuzzy least square and possibility regression analysis and its reliability”, **International Journal of Current Research**, ; ISSN 0975-833X; Volume 8, Issue 02, **Feb. 2016**, pp.27090-27093
(with S.L.Sananse and Ankush Ubale)

7. “Fitting of Fuzzy Regression Model based on distance criteria”, **International Journal for Science and Research in Technology** (IJSART); ISSN [ONLINE]: 2395-1052; Volume 2 Issue 6 –**JUNE 2016**, pp 456-462, Impact factor: 2.1
(with S.L.Sananse and Ankush Ubale)

8. “G-efficient Extreme Vertices Designs to Fit Linear Model for Mixture Experiments”
Journal of Probability and Statistical Science; Volume 15, Issue 2, pp 261-272, **Aug. 2017**, ISSN 1726-3328
(with Jyoti Rajarajan)

9. Extreme Vertices Designs for Multi-Component Constrained Mixture Experiment Using Simplex Method, **Int. J..Agricuilt.Stat.Sci.**, Vol.16, No.1, pp.343-346, 2020
(with Jyoti Rajarajan)

10. Teaching Quality Performance Indicators for PG Teachers: **International Journal of Scientific and Technology Research**, Vol. 9, Issue 04, Apr. 2020. ISSN: 22778616

11. Mining Sentiments from Students feedback, **International Journal of Engineering and Advanced Technology (IJEAT)**, Vol.9, Issue-4, Apr.2020, ISSN:2249-8958

12. Supply chain risk mitigation: Rescheduling the risky suppliers using multi criteria linear goal programming, **American Institute of Physics Proceedings**, 2424, 050006 (2022); <https://doi.org/10.1063/5.007679> , Impact Factor: 1.697
(With Pramod Jadhav and Abhijeet Shelke)

13. Effect of Leadership and Innovations on Business Performance: A Structural Equation Modelling Analysis; **IEEE explore**, 2021, pp. 1-6,
[doi: 10.1109/ICCICA52458.2021.9697282](https://doi.org/10.1109/ICCICA52458.2021.9697282) , Impact Factor: 3.557
(With Pramod Jadhav and Abhijeet Shelke)

14. Alpha Power Transformed Extended power Lindley Distribution, **Journal of Statistical Theory and Applications**, Dec. 2022, Springer, <https://doi.org/10.1007/s44199-022-00051-3> , Impact Factor: 0.99
(With Eissa Fatehi.Yahya)
15. Extended odd Weibull–Lindley distribution, **AIP Advances** 14, 035317 (2024); [doi: 10.1063/5.0192518](https://doi.org/10.1063/5.0192518) , **Impact Factor: 1.6**, (Q2 Journal, Impact Factor SJR 0.373)
(With Eissa Fatehi.Yahya)
16. Generalization of Power Lindley Distribution: Properties and Applications; **Statistics, Optimization & Information Computing**, 2024, 12(4), 1019-1041. <https://doi.org/10.19139/soic-2310-5070-1987> (Q3 Journal, Impact Factor SJR 0.38)
(With Eissa Fatehi.Yahya)
17. Statistical Inferences about parameters of the Pseudo Lindley Distribution with Acceptance Sampling Plans. **Axioms**, 2024, 13, 443. <https://doi.org/10.3390/axioms13070443>, **Impact Factor: 1.9**
(With Eissa Fatehi.Y, Alamri, O.A.; Tolba A.H.)
18. New Lindley Generator Based on T-X Family of Distributions: Properties and Reliability Applications, **Journal of Probability and Statistics**, Volume 2024, Article ID 7144414, 26 pages, Wiley <https://doi.org/10.1155/2024/7144414>
(With Eissa Fatehi.Yahya)

PAPERS PRESENTED AT INTERNATIONAL CONFERENCES

1. “Extreme Vertices Design for Constrained Mixture-Mixture Experiments”, International conference on Operation Research, Applications in Engineering and Management (ICOREM 2009) held during 27th -29th May 2009, Anna University, Tiruchirapally, Tamilnadu.
2. “Small and efficient design for constrained mixture problem for fitting Quadratic Model” , International conference on Advances in Statistical Science (AISS) held during 10th-11th Jan. 2010 at Indian Statistical Institute, Kolkata, West Bengal.
3. “A study of Crop Yield distributions, Crop Insurance and risk in crop yields for Marathwada Region of Maharashtra” , International conference on Recent Advances

in Statistics and Their Applications” held during 26-28 Dec. 2013 at Department of Statistics, Dr. B.A.M. University, Aurangabad

4. “Design and Analysis of categorized Mixture experiment”, at International conference on Mathematics, Physics and Allied Sciences held during Mar. 3 to 5, 2016 by Carmel College of Arts, Science and Commerce for Women in collaboration with International Multidisciplinary Research Foundation (IMRF), at Madgaon, Goa, India.
5. “Efficient Designs for Constrained Linear Mixture Experiments”, at International Symposium on Statistics and optimization and Seminar on Statistical Inference, Sampling and Optimization Techniques and Related areas, held during Dec. 17-19, 2016 at Department of Statistics and Operations Research, Aligarh Muslim University, Aligarh, India.
6. “Supply Chain Risk Mitigation by: rescheduling the risky suppliers using Multi Criteria Linear Goal programming”, **at International Conference on Computational Intelligence and Computing Applications-21 (ICCICA-21) held during 18-19 June, 2021 organized by G H Rasoni College of Engineering, Nagpur technically supported by American Institute of Physics(AIP)**
7. “Gold price forecasting in Indian Scenario”, at International Conference on Recent Trends in Theoretical and Applied Statistics (RTTAS) *held during Sept. 18-20, 2020 organized Department of Statistics, Dibrugarh University, Dibrugarh, Assam.*
8. “SEM PLS Models for performance Analysis of Manufacturing Sector firms in Maharashtra”, at International virtual conference on Recent Applications of Mathematical Sciences (RAMS 2021) organized by Department of Mathematics and Statistics, University College of Science, Mohanlal Sukhadia University, Udaipur, held during July 15-17, 2021
9. “Statistical Analysis of Surface Water Quality”, at IX International Symposium on Statistics and Optimization, held during October 28-29, 2023 at the Department of Statistics and Operations Research, Aligarh Muslim University, Aligarh, India
10. “A novel three- parameter Lindley Distribution: Properties and Applications” at 6th International Education and Innovative Sciences Congress held on November 24-25, 2022, Burdur Mehmet Akif Erosy University, Turkiye

PAPERS PRESENTED AT NATIONAL CONFERENCES

1. *“Efficient Designs for Multicomponent Constraint Mixture Experiments using LPP”* at the National conference on Recent developments in Graduate, Post graduate and Research Level Mathematics organized by J.E.S. College, Jalna, Maharashtra held during 10th-12th Jan. 2011
2. *“Statistical Analysis of Rainfall in Aurangabad District”* at National level seminar on “Regional Disparities in Agricultural Development” organized under the SAP on 11th -12th March, 2011 at the Department of Economics, Dr. B.A.M. University, Aurangabad.
3. *“Extreme Vertices Design for Mixture Experiments”* at the National conference on Recent Developments In Mathematics, Statistics, Computer Science And Their Applications organized by Dr. Ambedkar College, Deekshabhoomi, Nagpur, Maharashtra held during 2nd and 3rd Dec. 2011.
4. *“G Efficient Designs for Quadratic Mixture Models”* at the two day symposium on “Innovations in Science- SPU Research Scholars meet (ISSPURSM-2012)” organized by Sardar Patel University, Vallabh Vidyanagar, Gujrat, India on 8th and 9th Jan. 2012.
5. *“Estimation of Yield and Price Risk in Crop Production” at National Conference Interface Between Statistics and Other Sciences(NCISS 2012)”* organized by Department of Statistics, Dr. B.A.M. University, Aurangabad during 24-25th Feb. 2012.
6. National Seminar on *Recent Developments in Operations Research and Their Applications* organized by Department of Statistics, Dr. B.A.M. University, Aurangabad during 22-23rd Feb. 2013.
7. “Reduced Designs for Categorized Mixture Experiments” National Conference on Statistics, Mathematics and Their Applications organized by Department of Statistics and Mathematics, Institute of Science, Nagpur during 3 and 4 January 2014.
8. “Design to Fit Mixture Experiments using Linear and Quadratic Programming in OR” at National Conference on Recent Trends in Pure and Applied Mathematics Organized by Science College, Nanded during 9-11 January 2014
9. “Design for Mixture of Mixture Experiments”, National Conference on Applied Statistics organized by Department of Statistics, North Maharashtra University, Jalgaon during January 30-31, 2014.

10. “Design for Mixture Experiments using Techniques in Operations Research” at National Conference on Recent Trends in Statistics and their Applications to Society Organized by S.P. Pune University, Pune, during 23-25 March, 2017

WORKSHOPS / FDP/ STC ATTENDED (OTHER THAN HRD-ASC BAMU):

1. Five day “National workshop on Mathematical soft wares and Applications” held during 23rd Mar.-27th Mar. 2010, at Dept. of Mathematics, Dr. B.A.M. University, Aurangabad.
2. National workshop on “Exploratory Statistical Data Analysis using Statistical Softwares (NWESDA 2012)” organized by Department of Statistics, Dr. B.A.M. University, Aurangabad during 22-23rd Feb. 2012.
3. State Level Workshop “Statistica: A Festival of Statistical Activities”, Organized by Department of Statistics, Government College of Arts and Science, Aurangabad during 4th and 5th Jan. 2013.
4. Two day lecture workshop on “Applications of Statistics” organized by K.T.H.M. College, Nasik, during 23rd and 24th Jan. 2015.
5. University Industry Interaction Summit 2015 organized by Dr. B.A.M. University, Aurangabad during October 29-30,2015
6. One day Author Workshop on “Scientific and Publishing Scholarly Articles” organized by Knowledge Resource Center Dr. B.A.M. University, Aurangabad and Springer, on 4th Nov. 2015
7. One day Workshop on “Intellectual Property Rights (IPR)” held at Dr. B.A.M. University, Aurangabad on Monday 22nd Aug., 2016
8. One Week Faculty Development Programme on “Open Source Tools for Research”, from June 08-June 14, 2020 organized by Teaching Learning Centre Ramanujan College, University of Delhi, Delhi
9. “Work from Anywhere Anytime”, organized by UGC-HRDC, SPPU Edutech Foundation during June 8, 2020 to June 13,2020.
10. Five day online workshop on “Modern Methodologies in Statistical Data Analysis for Effective Agricultural Research”, held during 13-17 July,2020 organized by College of Agriculture, University of Agricultural Sciences, Raichur, Karnatka
11. Five days national level online workshop on Software in Mathematics and Statistics (WSMS-2021) held during 2-6 August 2021, organized by Department of Mathematics, National Institute of Technology Tiruchirappalli.

12. Online Elementary FDP on "Artificial Intelligence" from 20/09/2021 to 24/09/2021 organized by AICTE Training And Learning (ATAL) Academy Dr Babasaheb Ambedkar Marathwada University.

RESOURCE PERSON IN WORKSHOPS AND CONFERENCES:

1. At workshop on revision of syllabus of Pune University, held at K.T.H.M. College, Nasik, during 17th-19th Nov.2009
2. Worked as co-chairman at a national conference on Pre Science Congress-2014 conference on Science and Technology for Human development organized by ISCA-Aurangabad chapter, Dr. B.A.M. University, Aurangabad held during Dec. 30-31, 2014.
3. At Training Course on Research Methodology for Social Sciences, Organised by School of Social Sciences, Swami Ramanand Teerth Marathwada University, Nanded during March 10th to 17th, 2015
4. Worked as resource person in UGC sponsored National Seminar on “Recent trends in Actuarial Statistics”, organized by *Department of Statistics*, Dr. B.A.M. University, Aurangabad during 13th -15th March, 2015.
5. Worked as resource person in National workshop on “SET Examination in Mathematical Sciences”, organized by *Department of Statistics*, Dr. B.A.M. University, Aurangabad during 16th -18th March, 2015.
6. Delivered 6 lectures at workshop on “Empirical Data Analysis Using Statistical Software” held at K.T.H.M. College, Nasik, during 23rd -24th Dec.2015
7. At national workshop on “Statistical Data Analysis Using Statistical Softwares” organized by *Department of Statistics*, Dr. B.A.M. University, Aurangabad during 15th -16th March, 2016.
8. Delivered lecture on “Formulation and testing of Hypothesis and Interpretation of Data Through ICT” at One Day Faculty Orientation Programme on Dimensions of Research Development organized by Department of Commerce and management Science, Deogiri College, Aurangabad on 17/07/2016
9. At national workshop on “Data Analysis Using R programming” organized by *Department of Statistics*, Dr. B.A.M. University, Aurangabad during 6 -7 March, 2017.
10. Delivered 2 lectures on “Multivariate Analysis” in state level workshop on NET/ SET Guidance in Statistics organized by Department of Statistics , New Arts, Commerce and Science College, Ahmednagar on 29 Dec., 2017.

11. Delivered 2 lectures on “Designs of Experiments” in Faculty Development Program on “Statistical Techniques in Data Analysis” on July 07,2018 organized by Department of Agricultural Engineering, MIT, Aurangabad
12. Delivered two lectures on Multivariate Statistical Techniques and Non parametric tests and Conducted two sessions on hands on training in SPSS on Multivariate Statistical Techniques and Non parametric tests in teachers enrichment programme on “Data Analysis Using SPSS software” organized by Department of Statistics and IQAC, K.T.H.M. College, Nasik during August, 16-18, 2018
13. Delivered 2 lectures on Quadratic Forms of Normal Distribution at K.T.H.M. college, Nasik during 16 and 17, August 2018
14. Conducted 8 sessions in two day workshop on Advance Excel organized by Department of Statistics, New Arts, Commerce and Science College, Ahmednagar on during 21-22, Mar.2022.
15. Delivered invited Talk on “Mitigating Supply Chain Risk Using Goal Programming” in two days international conference on Recent Advances in Statistics (ICRAS-2021) during 11-12 October 2021 organized by the Department of Statistics, SDM college, Karad, M.S.
16. Worked as chairperson in two days international conference on Recent Advances in Statistics (ICRAS-2021) during 11-12 October 2021 organized by the Department of Statistics, SDM college, Karad, M.S.
17. Delivered lecture at webinar on “Exploratory Data Analysis using R software” on 18th May 2022 organized by the Department of Statistics, Mudhoji College Phaltan
18. Delivered lecture at webinar on “Testing of Hypothesis techniques using R software” on 15th March 2023 organized by the Department of Statistics, Mudhoji College Phaltan

LECTURES DELIVERED AT UNIVERSITY LEVEL:

1. Delivered Lecture on “Some Applications of Statistics” organized by Marathwada Mathematical Society, at S.B. Science College, Aurangabad, on Feb. 28, 2011.
2. Delivered 2 Lectures at 89th Orientation course organized by Academic Staff College, Dr. B.A.M. University, Aurangabad, Maharashtra on 29th Nov. 2011.
3. Delivered 2 Lectures on “Hypothesis Testing - Non Parametric Tests”, to the Ph. D. scholars of Department of Tourism, Dr. B.A.M. University, Aurangabad on 30.05.2014.

4. Delivered **2** Lectures at Refresher course in Mathematics/ Statistics (MD) organized by Academic Staff College, Dr. B.A.M. University, Aurangabad, Maharashtra on 9th Mar.2015.
5. Delivered **2** Lectures at Refresher course in Mathematics/ Statistics (MD) organized by Academic Staff College, Dr. B.A.M. University, Aurangabad, Maharashtra on 24th Mar.2015.
6. Delivered **a** lecture at Short Term course on Basic Science organized by Academic Staff College, Dr. B.A.M. University, Aurangabad, Maharashtra on 9th Sep. 2015.
7. Delivered **a** lecture at Short Term course on Research Methodology Science organized by Academic Staff College, Dr. B.A.M. University, Aurangabad, Maharashtra on 4th Nov. 2015.
8. Delivered **3** Lectures on “Hypothesis Testing - Non Parametric Tests”, to the Ph. D. scholars of Department of Tourism, Dr. B.A.M. University, Aurangabad on 08.01.2016.
9. Delivered 3 lectures on “Hypothesis Testing”, for the pre Ph. D. course work in social science organized by Department of social science, Dr. B.A.M. University, Aurangabad on 08.01.2016.
10. Delivered **a** Lecture on “SPSS”, at the Ph. D. course for research scholars of Social Science, Dr. B.A.M. University, Aurangabad on 16.02.2016.
11. Delivered **4** Lectures on “Data analysis using SPSS”, at the Ph. D. course work session conducted by Department of management Science, Dr. B.A.M. University, Aurangabad on 19.11.2017.
12. Delivered **2** lecture at 118th Orientation Programme on Data Analysis using SPSS organized by Academic Staff College, Dr. B.A.M. University, Aurangabad, Maharashtra on 7th Feb. 2018.
13. Delivered **2** lecture at Short Term course on Research Methodology organized by Academic Staff College, Dr. B.A.M. University, Aurangabad, Maharashtra on 8th Mar 2018.
14. Delivered **2** lecture at 119th Orientation Program on Introduction to SPSS organized by Academic Staff College, Dr. B.A.M. University, Aurangabad, Maharashtra on 30th Jun. 2018.
15. Delivered **3** lectures to the participants of “Online Pre-Ph.D. Course Work organized by UGC- Human Resource Department Centre, Dr. B.A.M. University, Aurangabad, Maharashtra during 20 January 2021 to 22 January 2021.

16. Delivered **3** lectures to the participants of “Online Pre-Ph.D. Course Work organized by UGC- Human Resource Department Centre, Dr. B.A.M. University, Aurangabad, Maharashtra during 18 January 2021 to 20 January 2021.
17. Delivered **1** lecture to the participants of “Pre-Ph.D. Course Work-2022” organized by UGC- Human Resource Department Centre, Dr. B.A.M. University, Aurangabad, Maharashtra on 25 August 2022.
18. Delivered **1** lecture to the participants of “Pre-Ph.D. Course Work-2022” organized by UGC- Human Resource Department Centre, Dr. B.A.M. University, Aurangabad, Maharashtra on 27 August 2022.
19. Delivered **2** lectures to the participants of “Online 11th and 12th Faculty Induction Programme” organized by UGC- MMTTC, Dr. B.A.M. University, Aurangabad, Maharashtra on 1 /02/2024.
20. Delivered **1** lecture to the participants of “Online Pre-Ph.D. Course Work-2024” organized by UGC- MMTTC, Dr. B.A.M. University, Aurangabad, Maharashtra on 04 /05/2024.
21. Delivered **1** lecture to the participants of “Online Pre-Ph.D. Course Work-2024” organized by UGC- MMTTC, Dr. B.A.M. University, Aurangabad, Maharashtra on 03 /04/2024.
22. Delivered **1** lecture to the participants of “Online Pre-Ph.D. Course Work-2024” organized by UGC- MMTTC, Dr. B.A.M. University, Aurangabad, Maharashtra on 20 /04/2024
23. Delivered **1** lecture to the participants of “Online Pre-Ph.D. Course Work-2024” organized by UGC- MMTTC, Dr. B.A.M. University, Aurangabad, Maharashtra on 25 /04/2024
24. Delivered **1** lecture to the participants of “Online Pre-Ph.D. Course Work-2024” organized by UGC- MMTTC, Dr. B.A.M. University, Aurangabad, Maharashtra on 27 /04/2024
25. Delivered **1** lecture to the participants of “Online Pre-Ph.D. Course Work-2024” organized by UGC- MMTTC, Dr. B.A.M. University, Aurangabad, Maharashtra on 06 /05/2024

MINOR RESEARCH PROJECT COMPLETED:

- Completed the minor research project “Probability Distributions of Rainfall Pattern in Aurangabad District” sanctioned by University of amount 15,000/- during 1.1.2010 to 31.03.2011
- “Statistical Modeling for Quality Assessment of Teachers” sanctioned by University of amount Rs.80,000/- w.e.f. 31/12/2018 of 2 years.

MAJOR RESEARCH PROJECT COMPLETED:

- “A Study on Estimation of Yield and Price Risk in Crop Production for Social security of farmers in the Marathwada region of Maharashtra” of amount 6, 65, 200/- sanctioned by U.G.C. as Co- Investigator during 1.02.2011 to 31.01.2013.

LIFE MEMBERSHIPS OF ACADEMIC BODIES :

- IISA- International Indian Statistical Association
- ISPS- Indian Society of Probability and Statistics

Ph. D. Students:

Sr. No.	Name of the Research Student	Topic of Research	Date of Reg.	Status
1	Devendra Tandale	Contribution to Multivariate Analysis and It's Allied Fields	Jun. 2018	ongoing
2	Vaibhav Vasundekar	Estimation of Missing Observations in Design of Experiments and Development of Programs in R	Jun. 2018	ongoing
3	Al Hammadi Ahmed	Contribution to Multivariate Statistical Techniques and their applications	Mar. 2020	ongoing
4	Fatehi Yahya Yahya Eissa	A study on Lindley Extended Distributions	Mar. 2021	Awarded
5	Bharati Taware	Construction and Analysis of Experimental Designs	Oct. 2021	ongoing