

Curriculum Vitae

Name: Dr. Rakesh Kumar

Assistant Professor, School of Mathematics, Shri Mata Vaishno Devi University, Katra-182320, J&K, India.

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Area of Interest / Specialization: Queuing Theory and its applications

University Education

Examination	University	Year
B.Sc. (<i>Physics, Mathematics, Chemistry</i>)	Himachal Pradesh University, Shimla, India	1998
B. Ed. (<i>Teaching of Physical Science, Mathematics and English</i>)	University of Kashmir, Jammu & Kashmir, India	2000
M.Sc. (<i>Statistics</i>)	Kurukshetra University, Kurukshetra, India	2002
One Year Certificate Course in French Language	Kurukshetra University, Kurukshetra, India	2004
Ph.D. (<i>Statistics</i>)	Kurukshetra University, Kurukshetra, India	2006
MOOC Certificate Course (<i>Analytics for Decision Making</i>)	Babson College, USA	2017
MOOC Certificate Course (<i>Introduction to Operations Research</i>)	Indian Institute of Technology, Madras, India	2018

Employment History

Institution	Designation	From	To
Department of Mathematics, Statistics and Actuarial Science, Namibia University of Science and Technology, Namibia	Professor (Full)	February 1, 2021	May 31, 2024
School of Mathematics, Shri Mata Vaishno Devi University, Katra, Jammu and Kashmir, India	Assistant Professor Stage III (Level 12)	24 August, 2018	continue
School of Mathematics, Shri Mata Vaishno Devi University, Katra, Jammu and Kashmir, India	Assistant Professor Stage II (Level 11)	24 August, 2013	23 August, 2018
School of Mathematics, Shri Mata Vaishno Devi University, Katra, Jammu and Kashmir, India	Assistant Professor Stage I (Level 10)	24 August, 2009	23 August, 2013
School of Business Studies, Sharda University (Formerly Hindustan Institute of Management, Sharda Group of Institutions), Greater Noida, India.	Senior Lecturer (10000-325-15200)	November, 2007	August, 2009
Amity Business School, Amity University-Uttar Pradesh, Noida Campus, India.	Lecturer (8000-275-13500)	April, 2006	October, 2007

Honours/Awards

1. **Best Researcher of the Year Award (2023)** in the Faculty of Health, Natural Resources and Applied Sciences, Namibia University of Science and Technology.
2. **Mathematical Sciences Top Scientist in Namibia (AD Scientific index-2023)**
(<https://www.adscientificindex.com/scientist/rakesh-kumar/4109742>) - **Certificate link**
3. **Awarded Certificate of Official Distinction of 26th International Science Conference on Computer Networks** for the research paper, “Transient Solution of a Heterogeneous Queuing System with Balking and Retention of Reneging Customers” in the 26th International Science Conference on Computer Networks (CN 2019) at Poland during June 25-27, 2019.
4. **Received Faculty Performance Linked Award @10% of the basic pay per month** for the excellence in teaching and research during the academic year (July1, 2018 to June 30, 2019) w. e. f. July1, 2019 for a period of one year from Shri Mata Vaishno Devi University, Katra, India.

5. **Received Faculty Performance Linked Award @10% of the basic pay per month** for the excellence in teaching and research during the academic year (July1, 2017 to June 30, 2018) w. e. f. July1, 2018 for a period of one year from Shri Mata Vaishno Devi University, Katra, India.
6. **Summer Faculty Research Fellowship** by Indian Institute of Technology-Delhi, India for research in queuing theory during June-July, 2012.
7. **University Medal** for standing First-Class-First in M.Sc. Statistics, Kurukshetra, University, Kurukshetra, India in 2003.
8. **University Research Scholarship** for doing Ph.D. in Statistics from Kurukshetra, University, Kurukshetra, India on 18th February, 2003.

Sponsored Research Project:

Title: Transient solutions of Markovian Queuing Models with Customer Impatience and Retention of Reneged Customers

Principal Investigator: Dr. Rakesh Kumar, Assistant Professor, School of Mathematics, Shri Mata Vaishno Devi University, Katra, India

Sponsoring Agency: University Grants Commission, Ministry of Human Resource Development, New Delhi, India

Funding Amount: 989000 INR

Type: Major Research Project

Duration: 3 years (2015-2018)

Status: Successfully completed

Outcome: 01 Ph.D. awarded, 03 SCIE and 05 Scopus indexed research papers published

Ph. D. Guidance

S. No.	Name of the Student	Thesis Title	Role	Department	University	Status of Ph.D. Work
1	Sumeet Kumar Sharma (Ph.D. in Mathematics)	Markovian Queuing Models for Retention of Reneged Customers	Sole Supervisor	School of Mathematics	Shri Mata Vaishno Devi University, Katra, India	Date of Award: 27 th May, 2015.
2	Bhupender Kumar Som (Ph.D. in Statistics)	Stochastic Models in Finance with Reverse balking and Reverse Reneging	Co-supervisor	Deptt. of Statistics and Operational Research	Kurukshetra University, Kuruksheta, India	Date of Award: 27 th May, 2015.
3	Sapana Sharma (Ph.D. in Mathematics)	A transient Study of Queues with Impatience and Retention	Sole Supervisor	School of Mathematics	Shri Mata Vaishno Devi University, Katra, India	Date of Award: 28 th February, 2020.
4	Bhavneet Singh Soodan (Ph.D. in Mathematics)	A Study on Queues with Correlated Reneging	Sole Supervisor	School of Mathematics	Shri Mata Vaishno Devi University, Katra, India	Date of Award: 7 th August, 2021.
5	Tobias Kaenandunge (Ph.D. in Mathematics)	Queueing Models with Correlated Reneging, Catastrophes and Restoration with their Applications in Health Care Management	Main Supervisor	Department of Mathematics, Statistics and Actuarial Science	Namibia University of Science and Technology	Ongoing

6	Jan Swartz (Ph.D. in Statistics)	Sampling Theory (Title is yet to be decided)	Co-Supervisor	Department of Mathematics, Statistics and Actuarial Science	Namibia University of Science and Technology	Ongoing
7	Otlaadisa Tafila (Ph.D. in Spatial Science)	Modelling of Surface Water and Groundwater Dynamics in the Okavango Delta for Sustainability of the Ecosystem and Livelihoods	Main Supervisor	Department of Mathematics, Statistics and Actuarial Science	Namibia University of Science and Technology	Ongoing
8	Selma Shifokota (Ph.D. in Statistics)	Sampling Theory (Title is yet to be decided)	Co-Supervisor	Department of Mathematics, Statistics and Actuarial Science	Namibia University of Science and Technology	Ongoing
9	LNM Letta (M. Sc. Applied Mathematics) Mode: By Research	Queueing models with catastrophes for insurance business	Main Supervisor	Department of Mathematics, Statistics and Actuarial Science	Namibia University of Science and Technology	Ongoing

Master Theses Supervised as Sole Supervisor: 16 and 01 ongoing

S. No.	Name of the Student	Batch	Title of Project
1	Supriya	2008-10	Applications of Operations Research in Health Care
2	Rasia Gupta and Adytee Bargotra	2009-11	Biological Applications of Stochastic Processes
3	Anku Sharma	2010-12	Optimization of Queuing Models
4	Neel Kumar	2011-13	Operational Research Application in Media Selection Problem during the Lok Sabha Election with Reference to J&K
5	Samridhi Sharma	2012-14	Applications of Markov Analysis
6	Sumit Sudan Dhiraj Singh	2012-14	Role of Demand Forecasting in Decision making
7	Deepika Kotwal Indu Jasrotia	2013-15	Statistical Inference in Queuing Theory
8	Smiley Vats Vishali Dubey	2014-16	Performance Analysis of Queuing Systems using Control Charts
9	Akshi Raina Deepika Jasrotia	2014-16	Application of Queuing Networks
10	Sunali Seth Sahil Sudan Rohit Sharma	2015-17	Queuing Systems with Customers' Impatience
11	Komal Sharma Sonika Thakur	2016-18	Minimum Cost Balanced Diet for Heart Patients by using Linear Programming
12	Deepika Bandral Anju Devi Deepika Sharma	2016-18	Determining Optimum Cost Balanced Diet for Diabetic Patients by using Linear Programming
13	Koushal Singh Rahul Gupta	2017-19	Transient Solution of Queuing Models
14	Archana Sharma and	2017-19	Estimation in Queuing Theory

	Shali Jasrotia		
15	Rupali and Supriya Katal	2018-20	Markovian Queuing Models with Feedback
16	Sakshi Sharma, Chahat Sharma and Shubham Singh	2018-20	Transient Solutions of Markovian Queuing Models with Feedback using Matrix Method

Honours Mini-Theses Supervised: 03

S. No.	Name of the Student	Thesis Title	Role	Department	University	Status
1	Selma Amutenya (Student Number: 218122225)	Statistical analysis of factors affecting fatality of road accidents (a case study of Khomas region, Namibia	Sole Supervisor	Mathematics, Statistics and Actuarial Science	Namibia University of Science and Technology	Date of Award: 25 th November, 2021.
2	Ndapandula N. J. Jatileni (Student Number: 216092531)	Queueing Systems with Reverse Balking	Sole Supervisor	Mathematics, Statistics and Actuarial Science	Namibia University of Science and Technology	Date of Award: 2 nd February, 2023.
3	Titus Denzel Kapofi (Student Number: 218055013)	Queueing network model for minimizing queues at Windhoek Central Hospital	Sole Supervisor	Mathematics, Statistics and Actuarial Science	Namibia University of Science and Technology	Date of Award: 7 th February, 2024.

Editorial Board Member/ Reviewer of Journals:

1. **Reviewer** of the journal: Mathematical Reviews, **Publisher:** American Mathematical Society, USA [Print ISSN: 0025-5629].
2. **Editorial Board Member** of American Journal of Operational Research ((USA) [Print ISSN: 2324-6537, e-ISSN: 2324-6545], **Publisher:** Scientific and Academic Publishing.
3. **Guest Editor** of a Special issue on “**Advances in Queuing theory and its applications**”

published in the journal, American Journal of Operational Research, USA (2013) [Print ISSN: 2324-6537, e-ISSN: 2324-6545]. **Publisher:** Scientific and Academic Publishing.

4. **Guest Editor of** a Special issue on “**Queuing and Reliability Models with their Applications**” published in the journal, Reliability: Theory and Applications, USA (2019) [ISSN 1932-2321], **Publisher:** Gnedenko Forum.
5. **Editorial Board Member** of Mathematical Journal of Interdisciplinary Sciences [Print ISSN: 2278-9561, e-ISSN: 2278-957X], **Publisher:** Chitkara University.
6. **Advisory Board Member**, Scientific Journal for Damietta Faculty of Science [Print ISSN: 2314-8594, e-ISSN 2314-8616], **Publisher:** Damietta University, Faculty of Science.
7. **Editorial Board Member**, Modern Management Forum [Print ISSN: 2424-8444], **Publisher:** Universe Scientific Publishing.

International Research Guidance:

Mr. M.I.G. Suranga Sampath (Ph.D. student) Huazhong University of Science and Technology, Wuhan, China visited School of Mathematics, Shri Mata Vaishno Devi University, Katra, India during April, 2018. He consulted me for his Ph.D. work in the area of Queuing Theory.

National Programme on Technology Enhanced Learning (NPTEL) Mentorship: Acted as a Mentor for NPTEL Course-Introduction to Operations Research (July-December 2018) offered by Indian Institute of Technology, Madras, India at Shri Mata Vaishno Devi University, India.

Publications:

Year-2023

1. Sapana, S., **Kumar, R.**, Soodan, B.S. and Singh, P. (2023). Queuing models with customers’ impatience-a survey. International Journal of Mathematics in Operational Research, Vol 26, No. 4, 523-547.
2. **Kumar, R.**, Sharma, S. and Soodan, B.S. (2023). Multi-server queuing system with feedback and retention. **Published in the Book:** Applications of Mathematical Modelling, Machine Learning, and Intelligent Computing for Industrial Development, CRC Press, eBook ISBN: 9781003386599, **DOI:** 10.1201/9781003386599-6. **[Book Chapter]**
3. **Kumar, R.**, Som, B. K., Kalidass, K. and Suranga Sampath, M. I. G. (2023). Queuing system with customers’ impatience, retention, and feedback. **Published in the Book:** Applications of Mathematical Modelling, Machine Learning, and Intelligent Computing for Industrial Development, CRC Press, eBook ISBN: 9781003386599, **DOI:**10.1201/9781003386599-4. **[Book Chapter]**
4. **Kumar, R.**, Sharma, S. and Singh, P. (2023). A Queuing Model for Computer-Communication Network Under Catastrophic Events and Retransmission of Dropped Packets," *2023 7th International Conference on Information, Control, and Communication Technologies (ICCT)*, Astrakhan, Russian Federation, 2023, pp. 1-4, doi: 10.1109/ICCT58878.2023.10347116. **[Conference Paper]**
5. Sapana, S., **Kumar, R.**, Kuaban, G. S., Soodan, B.S. and Singh, P. (2023). Performance and cost evaluation of an adaptive queuing system with customer reneging and retention: Steady-state and transient analysis. International Journal of Services, Economics and Management, **DOI:** 10.1504/IJSEM.2023.10054965.2.

[Published Online First].

6. Yohapriyadharsini, R. S, V. Suvitha, **Kumar, R.** (2023). A Queueing System With Heterogeneous Arrivals, Two Kinds Of Vacations And Impatient Customers. *International Journal of Mathematics in Operational Research*, **DOI:** 10.1504/IJMOR.2023.10059372. [Published Online First].
7. Ayyappan, G., Thilagavathy, K., and **Kumar, R.** (2023). Cost Optimization of MMAP/PH(1), PH(2)/1 Pre-emptive Priority Retrial Queueing model with Standby Server, Orbital Search, Server Breakdowns, Phase Type repairs and Impatient Customers. *International Journal of Mathematics in Operational Research*, **DOI:**10.1504/IJMOR.2023.10060048. [Published Online First].

Year-2022

8. Bhavneet Singh Soodan, and **Rakesh Kumar**, A single server queueing system with correlated renegeing and feedback of served customers. *Communications in Statistics: Theory and Methods*, Vol. 51, No. 18 (2022) 6461-6475. [SCIE, WOS I.F. = 0.8]. ISSN 0361-0926.
9. **Kumar, R.** and Soodan, B. S. "Modelling and Analysis of Cloud Computing Systems using Queueing Models with Correlated Arrivals and Correlated Reneging," *2022 International Conference on Information, Control, and Communication Technologies (ICCT)*, Astrakhan, Russian Federation, 2022, pp.1-5, DOI: 10.1109/ICCT56057.2022.9976500. [**Conference Paper**]
10. Kuaban, G. S., Soodan, B. S., **Kumar, R.** and Czekalski, P., "A Queueing-theoretic Analysis of the Performance of a Cloud Computing Infrastructure: Accounting for Task Reneging or Dropping," *2022 International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME)*, Maldives, Maldives, 2022, pp. 1-7, doi: 10.1109/ICECCME55909.2022.9988250. Publisher: IEEE. [**Conference Paper**]

Year-2021

11. **Kumar R.**, Soodan, B.S., Kuaban, G.S., Czekalski, P., Sharma, S. (2021). Performance Analysis of a Cloud Computing System using Queueing Model with Correlated Task Reneging. *Journal of Physics: Conference Series*, Vol. 2091, Issue 1, pp. 012003. DOI: 10.1088/1742-6596/2091/1/012003.
12. **Rakesh Kumar** and Sapana Sharma, Transient analysis of a Markovian queueing model with multiple-heterogeneous servers' and customers' impatience, *Opsearch*, Vol. 58 (2021) 540-556. [SCOPUS, WOS I. F.=1.6]. ISSN: 0030-3887.
13. **Rakesh Kumar**, Bhavneet Singh Soodan and Sapana Sharma, Modelling health care queue management system facing patients' impatience using queueing theory, *Reliability: Theory and Applications* (2021), Vol. 16, No. 1, 161-165. [SCOPUS]. ISSN: 1932-2321.

Year-2020

14. Kuaban, G. S., **Kumar, R.**, Soodan, B. S. and Czekalski, P. (2020). A multi-server queueing model with balking and correlated renegeing with application in health care management. *IEEE Access*, Vol. 8, 169623-169639. [SCIE, WOS I.F.=3.367]. ISSN: 2169-3536.
15. **Kumar, R.** and Soodan, B. S. (2020). Transient Solution of a Single Server Queueing Model with Correlated Reneging using Runge-Kutta Method, *International Journal of Mathematical, Engineering and Management Sciences*, 5(5), 886-896. [SCOPUS, WOS I.F. = 1.6]. ISSN: 2455-7749.

16. Suranga Sampath, M. I. G., **Kumar, R.**, Soodan, B.S., Liu, J., Sharma, S. (2020). A Matrix Method for Transient Solution of an M/M/2/N Queuing System with Heterogeneous Servers and Retention of Reneging Customers, *Reliability: Theory and Applications*, Vol. 15, No.4, 128-137. [SCOPUS]. ISSN: 1932-2321.
17. Vijaya Laxmi, P., Girija Bhavani, E. and Kumar, R. (2020). Correlated Reneging in an Optional Service Markovian Queue With Working Vacations, *Reliability: Theory and Applications* (2020), Vol. 15, No.4, 102-116. [SCOPUS]. ISSN: 1932-2321.
18. Kuaban G.S., Soodan B.S., **Kumar, Rakesh**, Czekalski P. (2020). Performance Evaluations of a Cloud Computing Physical Machine with Task Reneging and Task Resubmission (Feedback). In: Gaj P., Gumiński W., Kwiecień A. (eds) *Computer Networks*. CN 2020. Communications in Computer and Information Science, vol 1231. Springer, Cham. https://doi.org/10.1007/978-3-030-50719-0_14 [Scopus] **[Book Chapter]**
19. **Kumar, R.**, Sharma, S., Soodan, B. S., Vijaya Laxmi, P. and Som, B. K. (2020). Transient Solution of a Heterogeneous Queuing System with Balking and Catastrophes, *Reliability (Theory and Applications)*, Vol.15, No. 1, 42-50. [SCOPUS]. ISSN: 1932-2321.

Year-2019

20. **Kumar, R.**, Sharma, S. and Ammar, S.I. (2019). Transient and steady-state analysis of a queuing system having customers' impatience with threshold, *RAIRO Operations Research*, Vol. 53, No. 5, 1861-1876. [SCIE, WOS I.F.= 1.8]. ISSN: 2804-7303.
21. **Kumar, R.**, Sharma, S. (2019). Transient Solution of a Two-Heterogeneous Servers' Queuing System with Retention of Reneging Customers, *Bulletin of the Malaysian Mathematical Sciences Society*, Vol.42, No.1, 223–240. [SCIE, WOS I.F.= 1.2]. ISSN: 0126-6705.
22. **Kumar, R.**, Sharma, S., Rykov, V. (2019). Transient Solution of a Heterogeneous Queuing System with Balking and Retention of Reneging Customers. In: Gaj, P., Sawicki, M., Kwiecień, A. (eds) *Computer Networks*. CN 2019. Communications in Computer and Information Science, vol 1039. Springer, Cham. https://doi.org/10.1007/978-3-030-21952-9_25. **[Book Chapter]**
23. **Kumar, R.** and Sharma, S. (2019) Transient analysis of an M/M/c queuing system with retention of reneging customers, *International Journal of Operational Research*, Vol. 36, No.1, 78-91. [SCOPUS]. ISSN: 1745-7645.
24. **Kumar, R.** and Soodan, B. S. (2019). Transient Analysis of a Single-Server Queuing System with Correlated Inputs and Reneging, *Reliability (Theory and Applications)*, Vol.14, No. 1, 102-106. [SCOPUS]. ISSN: 1932-2321.
25. **Kumar, R.** and Soodan, B. S. (2019). Transient numerical analysis of a queuing model with correlated reneging, balking and feedback. *Reliability (Theory & Applications)*, 14 (4), 46-54. [SCOPUS]. ISSN: 1932-2321.

26. **Kumar, R.**, Sharma, S. and Bura, G. S. (2019). Transient and steady-state behavior of a two heterogeneous servers' queuing system with balking and retention of renegeing customers, K. Deep et al. (eds) Performance Prediction and Analytics of Fuzzy, Reliability and Queuing Models, Asset Analytics, http://doi.org/10.1007/98-981-13-085-4_19. **Chapter 19**, ISBN: 978-981-13-0857-4.(Springer). **[Book Chapter]**

Year-2018

27. **Kumar, R.** and Sharma, S. (2018). Transient analysis of an M/M/c queuing system with balking and retention of renegeing customers, Communications in Statistics-Theory and Methods, Vol.48, No. 6, 1318-1327. [SCIE, WOS I.F.=0.8]. ISSN: 0361-0926.
28. **Kumar, R.** and Sharma, S. (2018) Transient performance analysis of a single server queuing model with retention of renegeing customers, Yugoslav Journal of Operations Research, Vol. 28, No. 3, 315-331. [SCOPUS]. ISSN: 0354-0243.
29. Som, B. K. and **Kumar, R.** (2018). A heterogeneous queuing system with reverse balking and renegeing, Journal of Industrial and Production Engineering, Vol.35, No. 1, 1-5. [SCOPUS, ESCI, WOS I.F. = 4.5]. ISSN: 2168-1015.

Year-2017

30. **Kumar, R.** and Som, B. K. (2017). An M/M/c/N Feedback Queuing Model with Reverse Balking and Reneging. In: Manchanda P., Lozi R., Siddiqi A. (eds.) Industrial Mathematics and Complex Systems. Industrial and Applied Mathematics, (2017) pp 259-269, **Chapter 18**, ISBN: 978-981-10-3757-3 (Springer). **[Book Chapter]**
31. **Kumar, R.**, and Sharma, S. (2017). Transient Analysis of a Multi-server Queuing Model with Discouraged Arrivals and Retention of Reneging Customers. In: Rykov, V., Singpurwalla, N., Zubkov, A. (eds) Analytical and Computational Methods in Probability Theory. ACMPT 2017. Lecture Notes in Computer Science, vol 10684, 54-64. Springer, Cham. https://doi.org/10.1007/978-3-319-71504-9_6. [SCOPUS]. **[Book Chapter]** ISBN: 978-3-319-71503-2
32. **Kumar, R.** (2017). A transient solution to the M/M/c queuing model equation with balking and catastrophes, Croatian Operational Research Review, Vol. 8, No.2, 577-591. [SCOPUS]. ISSN: 18480225.
33. **Kumar, R.** and Sharma, S. (2017). Time-Dependent Analysis of a Single-Server Queuing Model with Discouraged Arrivals and Retention of Reneging Customers, Reliability (Theory and Applications) Vol. 12, No. 4, 84-90. [SCOPUS]. ISSN:1932-2321.
34. **Kumar, R.**, and Sharma, S. (2017). Transient analysis of a multi-server queuing model with discouraged arrivals and retention of renegeing customers, **Proceedings** of the International Conference on Analytical and Computational Methods in Probability Theory and its Applications, Russia during 23-27 October, 2017, pp 700-704. **[Conference Paper]**
35. **Kumar, R.**, and Sharma, S. (2017)., Transient numerical analysis of a single server Markovian queuing system with discouraged arrivals and retention of renegeing customers, **Proceedings** of the 5th Annual

International Conference of GSTF on Operations Research and Statistics, Singapore during 6-7 March, 2017, pp 132-136. [Conference Paper]

Year-2016

36. **Rakesh Kumar**, Performance Analysis of a Markovian Queuing System with Reneging and Retention of Reneged Customers, Stochastic Processes and Models in Operations Research, **Chapter 6**, ISBN13: 9781522500445. (2016), pp. 97-105, IGI Global (USA). [Book Chapter]

Year-2015

37. S. Dharmaraja and **Rakesh Kumar** (2015). Transient Solution of a Markovian Queuing Model with Heterogeneous Servers and Catastrophes, Opsearch, Vol. 52, No.4, 810-826. [SCOPUS, WOS I. F.=1.6]. ISSN: 0030-3887.
38. **Kumar, R.**, Som, B. K. and Jain, S. (2015). AN M/M/1/N Feedback Queuing System with Reverse Balking, Journal of Reliability and Statistical Studies, Vol. 8, No.1, (2015) 31-38. [ESCI, SCOPUS, WOS JCI=0.4] ISSN: 0974-8024. (2019 onwards)
39. **Kumar, R.** and Som, B.K. (2015). An M/M/1/N Queuing System with Reverse Balking, Reverse Reneging, and Retention of Reneged Customers, Indian Journal of Industrial and Applied Mathematics, Vol. 6, No.1, 73–79. NOT IN SCOPUS
40. **Kumar, R.** and Som, B. K. (2015). An M/M/1/N Feedback Queuing System with Reverse Balking, Reverse Reneging and Retention of Reneged Customers, Indian Journal of Industrial and Applied Mathematics, Vol. 6, No.2, 173–183. NOT IN SCOPUS

Year-2014

41. **Kumar, R.** and Sharma, S.K. (2014). A Markovian multi-server queuing model with retention of reneged customers and balking, International Journal of Operational Research, Vol. 20, No. 4, 427–438. [SCOPUS]. ISSN: 745-7645.
42. **Kumar, R.** and Sharma, S.K. (2014). A single-server Markovian Queuing system with discouraged arrivals and retention of reneged customers, Yugoslav Journal of Operations Research, Vol. 24, No. 1, 119-126. [SCOPUS]. ISSN: 0354-0243.
43. **Kumar, R.**, Jain, N. K., Som, B.K. (2014). Optimization of M/M/1/N Feedback Queue with Retention of Reneged Customers, Operations Research and Decisions, Vol 24, No.3, 45-58. [SCOPUS, ESCI, WOS I.F. = 0.4]. ISSN: 2391-6060. NOT COVERED IN SCOPUS
44. **Kumar, R.** and Sharma, S. K. (2014). A Multi-Server Markovian Feedback Queue with Balking, Reneging and Retention of Reneged Customers, Advanced Modeling and Optimization, Volume 16, No. 2, (2014) 395-406. [ZbMath Indexed].
45. **Kumar, R.** and Som, B. K. (2014). An M/M/1/N Queuing System with Reverse Balking and Reverse Reneging, Advanced Modeling and Optimization, Vol. 16, No. 2, 339-353. [ZbMath Indexed].
46. **Kumar, R.** and Sharma, S. K. (2014). Two-Heterogeneous Server Markovian Queuing Model with Discouraged Arrivals, Reneging and Retention of Reneged Customers, International Journal of Operations Research, Vol. 11, No. 2, 64-68. [Math Sci Net, ZbMath Indexed].

47. **Kumar, R.**, Som, B. K., and Jain, S. (2014). Optimizing Service Rate and the Capacity of an M/M/1/N Queuing System with Retention of Reneged Customers, *Indian Journal of Industrial and Applied Mathematics*, Vol. 5, No. 1, 53-63.
48. **Kumar, R.** and Sharma, S. K. (2014). A queuing model for performance analysis of an insurance business facing pre-mature surrenders of policies, **Proceedings** of National Conference on Business Dynamics: Contemporary Issues and Challenges at Management School, Kathua Campus, University of Jammu, (March 21-22, 2014), pp50-58. [**Conference Paper**]
49. **Kumar, R.** and Sharma, S. K. (2014). A Finite Capacity Single Server Queuing system with Reverse Reneging, *American Journal of Operational Research*, Vol. 5, No. 5, 125-128.
50. Jain, N. K., **Kumar, R.** and Sharma, S. K. (2014). An M/M/1/N Queuing System with Reverse Balking, *American Journal of Operational Research*, Vol. 4, No. 2, 17-20.
51. Sharma, S. K. and **Kumar, R.** (2014). A Single-Server Markovian Feedback Queueing System with Discouraged Arrivals and Retention of Reneged Customers, *American Journal of Operational Research*, Vol. 4, No. 3, 35-39.

Year-2013

52. **Kumar, R.** (2013). Economic analysis of an M/M/c/N queuing model with balking, renegeing and retention of reneged customers, *Opsearch*, Vol. 50, No. 3, 383-403. [SCOPUS, WOS I. F. = 1.6]. ISSN: 0030-3887.
53. **Kumar, R.** and Sharma, S.K. (2013). An M/M/c/N queuing system with renegeing and retention of reneged customers, *International Journal of Operational Research*, Vol. 17, No. 3, 333-344. [SCOPUS]. ISSN:1745-7645.
54. **Kumar, R.** and Sharma, S.K. (2013). Economic analysis of M/M/c/N queue with retention of impatient customers, *International Journal of Mathematics in Operational Research*, Vol. 5, No. 6, 709-720. [SCOPUS]. ISSN :1757-5850.
55. **Kumar, R.**, Som, B. K., Sharma, S.K., and Jain, S. (2013). Profit Optimization in Insurance Business Facing Customer Impatience, *Global Journal of Pure and Applied Mathematics*, Vol. 9, No. 1, 25-34. [SCOPUS].
56. **Kumar, R.** and Sharma, S.K. (2013). M/M/1 Feedback Queueing Models with Retention of Reneged Customers and Balking, *American Journal of Operational Research*, Vol. 3, No. 2A, DOI: 10.5923/s.ajor.201305.01.
57. **Kumar, R.**, Som, B. K., and Jain, S. (2013). Optimization and Performance Analysis of Insurance Business-A Queueing Modeling Approach, *International Journal of Mathematical Sciences and Engineering Applications*, Vol. 7, No. 4, 327-340.
58. Bura, G. S. and **Kumar, R.** (2013). Transient Analysis of a Limited Capacity Markovian Queueing System Subjected to Varying Catastrophic Intensity and Restoration, *American Journal of Operational Research*, Vol. 3, No. 2A. DOI: 10.5923/s.ajor.201305.05.
59. **Kumar, R.**, Som, B. K. and Jain, S. (2013). Modeling Insurance Business Facing Customer Impatience using Queueing Theory, *American Journal of Operational Research*, Vol. 3, No. 2A, DOI: 10.5923/s.ajor.201305.06.
60. **Kumar, R.** (2013). Optimization of a Single-server Finite Capacity Markovian Queueing System with Retention of Reneged Customers, **Proceedings** of National Conference of advances in Mathematics and its

applications, NIT Hamirpur, (25-27 June, 2013), pp 317-320. [Conference Paper]

Year-2012

61. **Kumar , R.** and Sharma, S. K. (2012). A multi-server Markovian queueing system with discouraged arrivals and retention of reneged customers, International Journal of Operations Research, Vol. 9, No. 4, 173-184. [Math Sci Net, ZbMath Indexed].
62. Sharma, S. K. and **Kumar, R.** (2012). A Markovian feedback queue with retention of reneged customers, AMO-Advanced Modeling and Optimization, Vol. 14, No.3, 673-679. [ZbMath Indexed].
63. Sharma, S. K. and **Kumar, R.** (2012). A Markovian feedback queue with retention of reneged customers and balking, AMO-Advanced Modeling and Optimization, Vol. 14, No.3, 681-688. [ZbMath Indexed].
64. **Kumar, R.** (2012). A Catastrophic-cum-restorative queueing problem with correlated input and impatient customers, International Journal of Agile Systems and Management, Vol.5, No.1, 122-131. [SCOPUS]. ISSN:1741-9174.
65. **Kumar, R.** and Sharma, S.K. (2012). Queuing with Reneging, Balking and Retention of Reneged Customers, International Journal of Mathematical Models and Methods in Applied Sciences, Vol. 6, No. 7, 819-828. [SCOPUS]. ISSN:19980140.
66. **Rakesh Kumar** (2012). A catastrophic-cum-restorative queueing system with correlated batch arrivals and general service time distribution, Pakistan Journal of Statistics and Operation Research, Vol. 8, No. 1, 43-53. [SCOPUS, ESCI, WOS JCI= 0.69]. ISSN: 1816 2711.
67. **Kumar, R.** and Sharma, S.K. (2012). M/M/1/N queueing system with retention of reneged customers, Pakistan Journal of Statistics and Operation Research, Vol. 8, No. 4, 859-866. [SCOPUS, ESCI, WOS JCI= 0.69]. ISSN: 1816 2711.
68. **Kumar, R.,** and Sharma, S.K. (2012). An M/M/1/N Queueing Model with Retention of Reneged Customers and Balking. American Journal of Operational Research, Vol. 2, No.1, DOI: 10.5923/j.ajor.20120201.01.
69. **Kumar, R.,** and Sharma, S.K. (2012). Formulation of Product Replacement Policies for Perishable Inventory Systems using Queueing Theoretic Approach, American Journal of Operational Research. Vol. 2, No. 4, DOI: 10.5923/j.ajor.20120204.0.

Year-2011

70. **Kumar, R.,** Kumar, R. and Sehgal, V. K. (2011). Time-Dependent Solution of a Queueing System with Correlated Bulk Arrivals, Catastrophe and Restoration American Journal of Operational Research. Vol. 1, No. 1, DOI: 10.5923/j.ajor.20110101.01.
71. **Kumar, R.** (2011). Steady State Solution of a Catastrophic-cum-Restorative M/G/1 Queueing System Using Supplementary Variable Technique, Applied Mathematics, Vol.1, No. 2, DOI:10.5923/j.am.20110102.10.

Year-2010

72. **Kumar, R.** (2010). Transient solution of a catastrophic-cum-restorative M/M/2 queue with heterogeneous servers, Pakistan Journal of Statistics, Vol. 26, No.4, 609-613. [SCOPUS]. ISSN:10129367.

Year-2009

73. **Kumar, R.** (2009). An analysis of a non-Markovian queuing network model with correlated allocation using simulation technique, ASOR (Australian Society for Operations Research) Bulletin, Vol.28, No.4, 28-37.
74. **Rakesh Kumar** (2009). A catastrophic-cum-restorative queuing model with correlated input for the cell traffic generated by new broadband services, African Journal of Mathematics and Computer Science Research, Vol. 2, No.10, 225-229.

Year-2008

75. **Kumar, R.** (2008). A catastrophic-cum-restorative queuing system with correlated batch arrivals and variable capacity, Pakistan Journal of Statistics and Operation Research, Vol.4, No.2, 55-62. [SCOPUS, ESCI]. ISSN: 1816 2711.

Year-2007

76. Jain, N. K. and **Kumar, R.** (2007). Transient solution of a catastrophic-cum- restorative queuing problem with correlated arrivals and variable service capacity, International Journal of Information and Management Sciences, Vol. 18, No. 4, 461-465. [SCOPUS]. ISSN: 10171819.

Year-2006

77. Jain, N. K. and **Kumar, R.** (2006). A catastrophic queuing system with correlated batch arrivals and variable service capacity, Bulletin of Pure and Applied Sciences, E. Mathematics and Statistics, Vol. 25, No.1, 97-104. [Math Sci Net, ZbMath Indexed]
78. Jain, N. K. and **Kumar, R.** (2006). A two-step non-Markovian queuing network model with correlated allocation,
International Journal of Information and Computing Science, Vol. 9, No. 1, (2006) 79-84.

Year-2005

79. Jain, N. K. and **Kumar, R.** (2005). Transient Solution of a Correlated Queueing Problem with Variable Capacity and Catastrophes, International Journal of Information and Management Sciences, Volume 16, Number 4, 39-47. [SCOPUS]. ISSN: 10171819.

Research Papers Accepted for publication:

80. Baby Saroja, K., Suvitha, V. and **Kumar, R.** (2024). Queue Analysis with Phase-Type Service, Breakdowns, and Standby Server in Steady-State, Mathematica Applicanda (Accepted).
81. Suranga Sampath, MIG, Kalidass, K., Liu, J., **Kumar, R.**, and Som, B. K. (2024). Impatient customers on an M/M/1 queueing system subjected to differentiated vacations, Chapter 8, Book: Statistical Modeling and Applications on Real-Time Problems, CRC Press (Accepted). **[Book Chapter]**
82. Som, B. K., **Kumar, R.**, Kalidass, K., and Suranga Sampath (2024). A Single-server feedback queuing system with Encouraged Arrivals Customers' Impatience, and Catastrophe, Chapter 9, Book: Statistical Modeling and Applications on Real-Time Problems, CRC Press (Accepted). **[Book Chapter]**

Books

1. **Title:** Non-Markovian Queues with Catastrophe and Restoration
Author: Rakesh Kumar
Publisher: Lap- Lambert Academic Publishing (Germany)

- Year of Publication:** 2013
ISBN-10 : 3659328952
ISBN-13 : 978-3659328954
2. **Title:** Transient Study of Queues with Impatience and Retention
Author: Sapana Sharma and **Rakesh Kumar**
Publisher: Lap- Lambert Academic Publishing (Germany)
Year of Publication: 2022
ISBN-10 : 6204982834
ISBN-13 : 978-6204982830
 3. **Title:** Advances in Queuing Theory and Applications (**Special Issue**)
Name of Editor: **Rakesh Kumar**
J o u r n a l N a m e : American Journal of Operational Research (USA)
Volume 3A
Year: 2013
Print ISSN: 2324-6537, e-ISSN: 2324-6545.
 4. **Title:** Queuing and Reliability Models with their Applications (**Special Issue**)
Names of Editors: Pawan Kumar and **Rakesh Kumar**
Journal Name: Reliability-Theory and Applications (USA)
Volume 14
Year : 2019
e-ISSN: 1932-2321.
 5. **Title:** Proceedings of the 1st International Conference on Mathematical and Statistical Sciences (ICMSS-1) organized by the Department of Mathematics, Statistics and Actuarial Science, Namibia University of Science and Technology, Namibia from 3-4 July, 2023. (**Conference Proceedings**)
Names of Editors: Sunday A. Reju and **Rakesh Kumar**
Year: 2023
ISBN: 978-99916-55-80-2

Global Academic visits and Research Collaborations:

I have visited countries like Russia, Poland, Singapore, UK, Nepal, and Namibia in connection with my academic work.

1. Lomonosov Moscow State University, Russia, Gubkin Russian State University of Oil and Gas (National Research University), Russia, and People's Friend University of Russia (RUDN University), Russia
Collaborators: Professor Vladimir Rykov, Professor Yuliya Gaidamaka
2. Silesian University of Technology, Poland, and Polish Academy of Sciences, Poland
Collaborators: Dr. G. S. Kuaban and Prof. Piotr Czekalski
3. Wayamba University of Sri Lanka
Collaborator: Dr. M.I.G. Suranga Sampath
4. Indian Institute of Technology, New Delhi, India
Collaborator: Professor S. Dharmaraja
5. GNOIT Institute of Business Studies, Noida, India
Collaborator: Professor B. K. Som
6. Cluster University of Jammu, India

Collaborator: Dr. Sapana Sharma

7. Andhra University, Visakhapatnam, India

Collaborator: Professor P. Vijayalakshmi

8. Banasthali University, Jaipur, India

Collaborator: Dr. Gulab Singh Bura

Organizing Secretary/Program Committee Members/ Session Chair/Advisory Committee Member/Session Organizer in National and International Conferences:

1. **Coordinator**, Mathematics and **Member**-Fundraising Committee, 32nd Annual Conference of the South African Association for Research in Mathematics, Science and Technology Education (SAARMSTE) during 16-18 January, 2024 at International University of Management, Windhoek, Namibia.
2. **Co-Chair**, 1st International Conference on Mathematical and Statistical Sciences, July 3-4, 2023 at Namibia University of Science and Technology.
3. **Panel Co-Chair (online)** during International conference on Science, Engineering Management and Information Technology (SEMIT 2023) held on 14-15 September 2023 in Ankara, Turkey.
4. Panel Chair (online) in an International Conference on Optimization and Data Science in Industrial Engineering (November 16-17, Istanbul, Turkey).
5. **Judge** at a Khomas Regional Science Fair during August 4, 2023 in Namibia. 2022 to be added
6. **Chairman of a session** in the Online International Workshop on System Modelling and Artificial Intelligence (SMAI-2021) during July 26-30, 2021 at Manipal University, Jaipur, India.
7. **Program Committee Member**, International Conference on Data Science, Machine Learning and Artificial Intelligence, Namibia University of Science and Technology, Namibia during August 9-12, 2021 (<https://dsmlai.nust.na/committee>).
8. **Program Committee Member**, International workshop on Small and Big Data Approaches in Healthcare, November 1-4, 2021 at Leuven, Belgium (<http://science.lpnu.ua/sbdah2021/program-committee>).
9. **Chairman of a session** in the International Conference on Mathematical Techniques in Engineering Applications (ICMTEA-2020) December 4-5, 2020 Graphic Era Deemed to be University | Graphic Era Hill University Dehradun, Uttarakhand, INDIA.
10. **Chairman of a session** in the online international workshop on Geometry of Continued Fractions: Ramanujan and his Successors during September 14-15, 2020 at Srinivasa Ramanujan Department of Mathematics, Central University of Himachal Pradesh, India.
11. **Chairman of a session** in the 27th International Science Conference on Computer Networks CN-2020 during June 23-24, 2020, Cyberspace Gdańsk, Poland.
12. **Program Committee Member**, 28th International Science Conference on Computer Networks-CN 2021, Poland (<https://easychair.org/cfp/cn2021>).
13. **Organizing Committee Member** of Online International Conference on Mathematical Sciences

- and Computational Intelligence 21st -22nd December, 2020. (https://www.smvdu.ac.in/images/stories/pdf/events/2020/november/7112020_Conference_Brochure.pdf)
14. **Program Committee Member**, 27th International Science Conference on Computer Networks – CN 2020, Poland.
 15. **Session chairman** in the 11th International conference on Operations Research for Sustainable Development, February 1-2, 2020 at Janapriya Multiple Campus, Pokhara, Nepal (<https://bijaylalpradhan.com.np/11th-orsn-international-conference-at-february-2020-pokhara-nepal-operations-research-and-sustainability/>)
 16. **Advisory Committee Member**, International Conference on Contemporary Issues in Management, 2020, Lloyd Business School, Greater Noida, India. ([International Conference on Contemporary Issues in Business Management \(ICCIM\), 2020 | Lloyd business School](#)).
 17. **Program Committee Member**, 4th International Conference on Mathematical Techniques in Engineering Applications (ICMTEA-2020), Dehradun, India. (<http://icmtea.in/organizingteam.php>).
 18. **Advisory Committee Member**, International Conference on Mathematics in Space & Applied Sciences “ICMSAS-2019”: Hamirpur, Himachal Pradesh, INDIA during 29-30 November, 2019. (http://www.jammulinksnews.com/newsdetail/209775/Jammu-Links-News-SMVDU_Faculty_delivers_Invited_Talk_at_International)
 19. **Program Committee Member**, 1st International Workshop on Digital Content & Smart Multimedia, at Lviv Polytechnic National University, Lviv, Ukraine during December 23 - 25, 2019 (<http://science.lpnu.ua/dcsmart-2019>).
 20. **Session chair** in a National Mathematics Research Scholar Meet at Department of Mathematics, **University of Jammu, India** during 20-22 August, 2019.
 21. **Organizing Committee Member** of 4th National Conference on Recent Trends in Mathematical Sciences in association with International Academy of Physical Sciences during 13-14 December, 2019 at School of Mathematics, Shri Mata Vaishno Devi University, Katra, India. (https://www.smvdu.ac.in/images/stories/pdf/events/2019/dec2019/25112019_Mathsconf_Brouchure.pdf)
 22. **Program Committee Member**, 8th Annual International Conference on Computational Mathematics, Statistics and Operational Research (CMSOR 2019) at Singapore during 8-9 April, 2019. (<http://mathsstat.org/committee/>)
 23. **Steering Committee Member**, **Two weeks Refresher Course** on Introduction to MATLAB and Research Enhancement Tools at SECE in collaboration with HRDC, SMVDU, Katra (2018). (<https://www.smvdu.ac.in/index.php/latest-news/113-2018/october/810-smvdu-organises-refresher-course-on-matlab-research-tools>)
 24. **Program Committee Member**, 84th Annual Conference of Indian Mathematical Society, Shri Mata Vaishno Devi University, India, 27-30 November, 2018.

(<https://www.smvdu.ac.in/index.php/event-march-2017/104-november/644-84th-annual-conference-of-indian-mathematical-society>).

25. **National Advisory Committee Member and Organizer of a symposium** on Queuing theory and its applications in the 27th international conference of FIM on Interdisciplinary Mathematics, Statistics and Computational Techniques during 2-4 November, 2018 at University of Jammu. (<https://jammuuniversity.ac.in/cms/sites/default/files/inline-files/pic270127.PDF>).
26. **Session chair** in the 5th International conference on recent trends and advancements in engineering and technology at SMVDU, Katra during 25-26 October, 2018.
27. **Program Committee Member**, GSTF Conference on Operations Research and Statistics, Singapore, 2018 (<http://mathsstat.org/committee/>).
28. **Technical chair** in the 4th International conference on recent trends and advancements in engineering and technology at SMVDU, Katra during 3-4 November, 2017.
29. **Organizing Committee Member** of National Conference on Algebra, Analysis and Applications during 7-8 March, 2017 at Department of Mathematics, SMVDU, Katra.
30. **Organizing Secretary** of the 3rd National Conference on Recent Trends in Mathematical Sciences (9-10 February, 2017) at Department of Mathematics, SMVDU, Katra.
31. **Resource Person**, National Seminar on Recent Advances in Differential Equations and their Applications during 3-4 February, 2017 at Department of Mathematics, Meenakshi College for Women, Chennai.
32. **Program Committee Member**, National Conference on Information Technology and Business Analytics, during 7-8 January, 2017 at Department of Computer Science and Engineering, SMVD University, Katra.
33. **Session Chair**, National Conference on Information Technology and Business Analytics, during 7-8 January, 2017 at Department of Computer Science and Engineering, SMVD University, Katra.
34. **Session Chair**, National Conference on Advances in Mathematical Sciences during 21-22 December, 2016 at Department of Mathematics, NSCBM Government Degree College, Hamirpur, H.P.
35. **Session Chair**, National Seminar on Recent Advances in Mathematics and its Computational Aspects during 11-12 November, 2016 at Department of Mathematics, SMP Government Girls P.G. College, Meerut, U.P. **Organizing Secretary** of a National Conference on Recent Trends in Mathematical Sciences (October 8-9, 2015) at School of Mathematics, SMVDU, Katra.
36. **Session Co-Chair** of an ICSSR sponsored international conference titled "Shifting Paradigms in Applied Economics and Management: Course Correction" held on 1st - 2nd August, 2014 at Faculty of management, SMVDU, Katra.
37. **Organizing Committee Member** of a National Seminar on Recent Trends in Mathematical Sciences, 22nd March, 2013 at School of Mathematics, SMVDU, Katra.

Papers Presented/Invited talks/ Keynote Addresses:

1. **Delivered a Keynote lecture** (online) on Applications of Queuing Models with Correlated Reneging at the 7th International Scientific Conference on Information, Control and Communication Technologies (ICCT 2023) during October 2-6, 2023, Astrakhan, Russian Federation.
2. **Delivered a Keynote lecture (online)** on Queuing Models for Cloud Computing in the 1st International Symposium on Celebrating the Contributions of Ramanujan in Mathematics at Amity University-Uttar

Pradesh, Noida, India.

3. **Delivered a Keynote lecture (online)** on Queuing Theory and its applications-some research directions in an International Seminar on the works of Srinivasa Ramanujan and their applications in Science and Engineering on 22 December 2023 at Border Security Force, Rustam Ji Institute of Technology, Tekanpur, Gwalior, India.
4. **Delivered an invited talk (online)** on Performance Analysis of Cloud Computing using Queuing Models in an International Conference on Statistics, Data Science and Reliability: Exploring Trends, Methods and Applications during 24-26 December, 2023, MD University, Rohtak India.
5. **Delivered an invited talk (online)** on Career Opportunities in Mathematical Sciences at Central University of Himachal Pradesh during the National Mathematics Day celebration on 22 December 2023.
6. **Delivered an invited talk (online)** on Mathematics and Society at Central University of Himachal Pradesh (CUH) during the Foundation Week of CUH on 25 January, 2023.
7. **Delivered an invited talk** on Latest developments in Queuing theory with customer impatience in an Online International Workshop on System Modelling and Artificial Intelligence (SMAI-2021) during July 26-30, 2021 at Manipal University, Jaipur, India.
8. **Acted as a Resource Person** in an Online International Webinar On Mathematical Science & Technology: Latest Applications on July 3, 2021 at GGN Institute of Management & Technology, Ludhiana, India
9. Acted as a **keynote speaker** in a Student Seminar on National Science Day on 28-02-2021 organized by Department of Mathematics, Cluster University of Jammu, India and delivered a keynote address on “Applications and Job Opportunities in Mathematics”.
10. Delivered an **invited talk** on Applications of Queuing Theory in Cloud Computing in online international webinar on Applications of Queuing Theory on February 6, 2021 at Department of Business Management, GGNIMT, Ludhiana, India.
11. Delivered an **invited talk** on Applications of Queuing Theory in an International Conference on Recent Advances in Computational Mathematics and Engineering during 19-21 March, 2021 at Department of Applied Sciences and Humanities, BK Birla Institute of Engineering and Technology, Pilani, India.
12. Delivered an **invited talk** on Applications of Queuing Theory in Health care in an International Conference on Analysis and Applications organized by Nepal Mathematical Society in collaboration with the Central Department of Mathematics, Tribhuvan University; South Asian University, New Delhi, India; Association of Nepalese Mathematicians in American; Department of Mathematics, Valmeeki Campus, Nepal Sanskriti University during April 9-11, 2021.
13. Delivered an **invited talk** on Advancements and Applications of Queuing Models with Retention of Reneging Customers, in a Virtual International Conference on Emerging Trends in Engineering, Science, Management and Commerce during May 21-22, 2021 at the Department of Electronics and Communication Engineering, Madhyanchal Professional University, Bhopal, Madhya Pradesh, India.
14. Delivered an **invited talk** on Queuing Models with Reverse Balking in an online International Conference on Recent Trends in Science, Humanities and Engineering during 18-19 June, 2021 at SGBP College,

Nawalgarh, Rajasthan, India.

15. **Presented a research paper titled**, Time-Dependent Analysis of an M/M/C Feedback Queuing Model with Retention of Reneging Customers, 2021 AIMT Conference (Virtual) on interdisciplinary research on Applied Mathematics, Management and Technology, 20-21 June, 2021 organized by American Institute of Management and Technology (AIMT), USA, a subsidiary of The Global Knowledge Foundation, USA, Inc.
16. **Delivered a Plenary talk** on Queuing Systems with Customers' Impatience and Retention in the 11th International conference on Operations Research for Sustainable Development, February 1-2, 2020 at Janapriya Multiple Campus, **Pokhara, Nepal**.
17. **Research paper presented** in the International Conference on Computer Networks-2019, **Gliwice, Poland** during June 25-27, 2019, paper presented entitled, "Transient Solution of a Heterogeneous Queuing System with Balking and Retention of Reneging Customers".
18. **Research paper presented** in the 7th meeting of the EURO Working Group on Stochastic Modelling (StochMod 2018), **Lancaster, UK** during 13-15 June, 2018, paper presented entitled, "An M/M/1/N Queuing model with self-regulatory servers and retention of impatient customers".
19. **Research paper presented** in the International Conference on Analytical and Computational Methods in Probability Theory and its Applications, **Russia** during 23-27 October, 2017, paper presented entitled, "Transient analysis of a multi-server queuing model with discouraged arrivals and retention of renegeing customers".
20. **Research paper presented** in the 5th Annual International Conference of GSTF on Operations Research and Statistics, **Singapore** during 6-7 March, 2017, paper presented entitled, "Transient numerical analysis of a single server Markovian queuing system with retention of renegeing customers".
21. **Acted as a resource person** in the One Week International Faculty Development Program on "Real, Applied and Computational Mathematics" at PRDS College, Kerala, affiliated to MG University, India and **delivered an invited talk** (online) on "Role of Queuing Theory in Cloud Computing" on 28th August, 2020.
22. **Acted as a resource person** in the One Week International FDP on " Application and implements of mathematics" at Hindustan College of Engineering and Technology, Coimbatore on 22nd August, 2020 and **delivered an invited lecture** (Online) on 'Queuing models with reverse balking and their extensions'.
23. **Acted as a resource person** in a national level one day workshop (webinar) and **delivered an invited talk** on 'Queuing with retention of impatient customers' at department of science and humanities, Hindustan College of Engineering and Technology (Affiliated to Anna University Chennai) on 12th June, 2020.
24. Delivered an **invited talk** on Transient Analysis of Queuing Models in a National Workshop on Applications of Analysis, at Department of Mathematics, **University of Jammu, India** during 24-28 February, 2020.

25. Delivered an **invited talk** on Transient Solutions of Queuing Models in the 4th National Conference on Recent Trends in Mathematical Sciences in association with International Academy of Physical Sciences during 13-14 December, 2019 at School of Mathematics, **Shri Mata Vaishno Devi University, Katra, India.**
26. Delivered an **invited talk** on Mathematical Models and Applications of Queuing Systems in an International conference on Mathematics in Space and Applied Sciences during 29-30 November, 2019 at Department of Mathematics, **NSCBM Government Degree College, Hamirpur, H. P., India.**
27. Delivered an **invited talk** on Mathematical Modeling of Queuing Systems in National Mathematics Research Scholar Meet at Department of Mathematics, **University of Jammu, India** during 20-22 August, 2019.
28. Delivered an **invited talk** on Basic Statistics-II in the FDP on Marketing Research & Business Analytics with Econometric Applications in Business Management at **School of Business, Shri Mata Vaishno Devi University, Katra** during 6-17 May, 2019.
29. Delivered an **invited talk** on Queuing Models with Retention of Impatient Customers' in an international conference on Recent Inventions and Innovations in Mathematical Sciences at the **Department of Applied Mathematics, Andhra University, Visakhapatnam** during 28th February, 2019 to 1st March, 2019.
30. **Delivered 09 lectures** on Operations Research as a resource person in the Department of Mathematics, **Central University of Himachal Pradesh** in the workshop mode from 15th to 17th February, 2019.
31. **Delivered two lectures** on Introduction to Operations Research and its Applications in the Refresher Course in Mathematical Sciences organized by Department of Statistics, University of Jammu in collaboration with **H.R.D.C University of Jammu** on 13th February, 2019.
32. Delivered an **invited talk** on Data Interpretation in Research Methodology in the TEQIP- III funded two week refresher course on Introduction to MATLAB and Research Enhancement Tools at SECE in collaboration with **H.R.D.C. (S.M.V.D.U., Katra)** during 13-22 July, 2018.
33. Delivered an **invited talk** on Getting Familiar with Operations Research in a National Seminar on Recent Advances in Complex Analysis and Operator Theory and 27th Annual Conference of the **Jammu Mathematical Society** at University of Jammu, February 15-17, 2018.
34. Delivered an **invited talk** on Recent Developments in Queuing Systems with customers' Impatience in two-days National Conference on Mathematical Sciences and its Applications organized by the **GGMSC, Jammu** during 19-20 January, 2018.
35. **Delivered two lectures** in 1Week Faculty Development Program on Research Methodology at **H.R.D.C. (S.M.V.D.U., Katra)** during 4-8 December, 2017.
36. Delivered an **invited talk** on Applications of Queuing Systems with customers' Impatience in 27th international conference of Forum for Interdisciplinary Mathematics in conjunction with the 3rd convention of IARS on Interdisciplinary Mathematics, Statistics, and Computational Techniques during 2-4 November, 2018 at the **Department of Statistics, University of Jammu.**
37. Delivered an **invited talk** on Role of Differential Equations in Mathematical Modelling in a National

- Seminar on Recent Advances in Differential Equations and their Applications during 3-4 February, 2017 at Department of Mathematics, **Meenakshi College for Women, Chennai**.
38. Delivered an **invited talk** on Modelling Queues with Customers' Impatience in National Conference on Advances in Mathematical Sciences during 21-22 December, 2016 at Department of Mathematics, **NSCBM Government Degree College, Hamirpur, H. P.**
 39. Delivered an **invited talk** on Recent Advances in Queuing Modelling with Customers' impatience in National Seminar on Recent Advances in Mathematics and its Computational Aspects during 11-12 November, 2016 at **Department of Mathematics, SMP Government Girls P.G. College, Meerut, U.P.**
 40. Delivered an **invited talk** on Queuing Systems with Customers' Impatience-Recent Extensions in Silver Jubilee Conference of the Jammu Mathematical Society and a National Seminar on Recent Developments in Complex Analysis, Operator Theory and Related Areas during 20-22 October, 2016 at **Department of Mathematics, University of Jammu, Jammu.**
 41. Research paper presented in the 84th Annual Conference of Indian Mathematical Society: An International Meet, **School of Mathematics, Shri Mata Vaishno Devi University, Katra** during 27-30 November, 2018, paper presented entitled, "Time-dependent probabilities of a multi-server queuing model with customers' impatience".
 42. Research paper presented in the International Conference on Economic Growth and Structural Changes: Trend, Pattern and Policies, School of Economics, **Shri Mata Vaishno Devi University, Katra** during 23-24 February, 2018, paper presented entitled, "Stochastic Modelling of an Order Picking System with Impatient Customers".
 43. Research paper presented in the 3rd National Conference on Recent Trends in Mathematical Sciences, Department of Mathematics, **Shri Mata Vaishno Devi University, Katra** during 9-10 February, 2017, paper presented entitled, "Transient solution of an M/M/1 Queuing System with renegeing and retention of renegeing customers".
 44. Research paper presented in the 3rd National Conference on Recent Trends in Mathematical Sciences, Department of Mathematics, **Shri Mata Vaishno Devi University, Katra** during 9-10 February, 2017, paper presented entitled, "Time- dependent solution of multi-server queuing system with renegeing and retention of renegeing customers".
 45. Research paper presented in an International Conference on Mathematical Techniques in Engineering Applications (ICMTEA 2016) at **Graphic Era University, Dehradun, India** during 29-30 April, 2016, paper presented entitled, "A heterogeneous queuing system with reverse balking and renegeing".
 46. Research paper presented in 18th Annual National Conference of Society of Statistics, Computer and Applications on Significance of Statistics as Interdisciplinary Science at Department of Statistics, **University of Jammu, Jammu** during February 18-20, 2016, paper presented entitled, "Multiple Server Queuing Models with Reverse Balking and Feedback".
 47. Research paper presented in an International Conference on the occasion of Silver Jubilee of the Indian Society of Industrial and Applied Mathematics at Sharda University, Greater Noida, India during

- 29-31 January, 2016, paper presented entitled, “An M/M/c/N feedback queuing model with reverse balking and renegeing”.
48. Delivered a talk titled, “Markovian Queuing Systems With Reverse Balking” in the National Conference on Recent Trends in Mathematical Sciences (October 8-9, 2015) at School of Mathematics, Shri Mata Vaishno Devi University, Katra.
 49. Attended a National Conference on Recent Trends in Mathematical Sciences (October 8-9, 2015) at School of Mathematics, Shri Mata Vaishno Devi University, Katra and presented a paper titled, “An M/M/1/N Queuing system with Reverse Renegeing”.
 50. Attended a National Seminar on Make in India during 29-30 September, 2015 at School of Economics, Shri Mata Vaishno Devi University, Katra and presented a paper titled, “A Multi-Server Stochastic Queuing Model with Reverse Balking for an Investment Business Facing Customer Impatience”.
 51. Attended the 1st National case study conference at School of Business, Shri Mata Vaishno Devi University, Katra and presented a case study titled, Travelling Salesman Problem – A case study of Amul Distributor at Jammu during 24-26 April, 2015.
 52. Attended an International Conference on Emerging Areas of Mathematics for Science and Technology w. e. f. 30th January, 2015 to 1st February, 2015 at Department of Mathematics, Punjabi University Patiala and presented a paper entitled, “An M/M/1/N Queuing System with Reverse Balking, Reverse Renegeing, and Retention of Reneged Customers”.
 53. Attended the 10th JK Science Congress from 14th -16th March, 2015 at University of Jammu and presented the research paper, “Optimization of a single server Markovian feedback queuing system with retention of impatient customers”.
 54. Attended an ICSSR sponsored international conference titled “Shifting Paradigms in Applied Economics and Management: Course Correction” held on 1st -2nd August, 2014 at Faculty of management, **Shri Mata Vaishno Devi University, Katra** and presented the paper titled- ‘Design and Optimization of a Service System facing Customer Impatience and Discouraged Arrivals’.
 55. Attended a National Conference on Excellence in Management Education at Jaipuria **Institute of Management Studies, Ghaziabad** during 25th -26th April, 2013 and presented the paper titled ‘Design of Service System for Insurance Business facing Customer Impatience using Queuing Theory’.
 56. Attended a Mathematical Festival-2013 at **JK Institute of Mathematical Sciences, Jammu** on 13th December, 2013 and presented a paper entitled, “A Perspective on the status of Mathematics in J&K”.
 57. Attended a National Conference on Advances in Mathematics and its Applications at **National Institute of Technology, Hamirpur, HP** (June 25-27, 2013) and presented the research paper entitled ‘Optimization of a single server finite capacity Markovian queuing system with retention of reneged customers’.
 58. Attended a national conference on Innovative Strategies for Science and Technology at **Inderprastha Engineering College, Ghaziabad** on November 30, 2013 and presented a paper titled- Two heterogeneous servers queuing system with balking, renegeing and retention of reneged customers.

59. Attended a National Seminar on Strategic Dimensions of Value Chain for Sustainable Development, at College of Management, **Shri Mata Vaishno Devi University, Katra** on 1st September 2012 and presented the paper titled: 'Selection of Spoilage Prevention Strategies in Supply Chains Using Queuing-Theoretic Approach'.
60. Attended a National Conference on Mathematical Analysis and Modelling, at **SRM University, Modinagar, Ghaziabad**, March 30-31, 2012 and presented the paper titled 'A Markovian Queuing Model for Retention of Impatient Customers'.
61. Attended an AICTE Sponsored Seminar on Applications of Mathematics in Engineering Sciences, **N.C. College of Engineering, Panipat**, March 17, 2012 and presented the paper titled 'An M/M/1/N queuing model with retention of renege customers and balking'.
62. Attended the 44th Annual Convention of Operational Research Society of India (ORSI-2011) & an International Conference on Operations Research for Sustainable Development in Globalized Environment at **Calcutta Business School**, Diamond Harbour Road, Bishnupur, West Bengal, January 6-8, 2012 and presented the paper Titled 'Time-dependent solution of a queuing system with correlated bulk arrivals, Catastrophe and restoration'.
63. Attended the 43rd Annual Convention of Operational Research Society of India & an International Conference on Operations Research for Urban and Rural Development, **Thiagarajar College of Engineering, Madurai**, December 15-17, 2010 and presented the paper titled 'A Catastrophic-cum-Restorative Queuing Problem with Correlated Input and Impatient Customers'.
64. Attended a National Conference on Advanced Manufacturing Techniques (NCAMT2009) at **Shri Mata Vaishno Devi University, Katra (J&K)** November 5-6, 2009 and presented the paper titled 'Operations Research Application in Managing Construction Projects'.0. Attended the 10th Annual International Conference of Society of Operations Management, **IIM Ahmedabad**, 21-23 Dec 2006 and presented the paper titled 'Some Catastrophic Queuing Systems'.
65. Attended a National Conference on Advanced Manufacturing Techniques (NCAMT2009) at **Shri Mata Vaishno Devi University, Katra (J&K)** November 5-6, 2009 and presented the paper titled 'Operations Research Application in Managing Construction Projects'.
66. Attended the 3rd National Conference on Management Science and Practice, **IIM Ahmadabad** 22-24 March, 2008 and presented the paper titled 'Transient Solution of a Catastrophic-cum-Restorative M/M/2 Queue with Heterogeneous Servers'.
67. Attended the 37th Annual Convention of Operations Research Society of India (ORSI), **IIM-Ahmedabad**, 8-11 January, 2005 and presented the paper titled 'A two-step non-Markovian queuing network model with correlated allocation'.
68. Attended the 3rd Global Leadership Summit, Amity Business School, **Amity University, Noida**, November, 12-14, 2006, and presented the paper titled 'A Catastrophic Queuing System with Correlated batch Input'.

69. Attended the 91st Indian Science Congress, **Punjab University, Chandigarh**, 3-7 January, 2004.

Training Programmes Attended

1. Attended **one week Faculty Development Program** on Teaching Sciences and Mathematics at Faculty Development Centre, SMVDU, Katra during January 21-25, 2019.
2. Attended a **Two months NPTEL-AICTE approved Faculty Development Programme** on Introduction to Operations Research from IIT Madras during August- September, 2018.
3. Attended a **Two weeks Refresher Course** on Introduction to MATLAB and Research Enhancement Tools at SECE in collaboration with HRDC, SMVDU, Katra during 20-29 October, 2018.
4. Attended a **Three day Faculty Development Program** on Effective Teaching– Learning in Higher Education during 4-6 July, 2018 at SMVDU, Katra.
5. Attended a **Two week AICTE approved Faculty Development Programme on Pedagogy for Online and Blended Teaching-Learning process** conducted by IIT Madras from 3-30 May, 2018.
6. Attended a **Two week AICTE approved Faculty Development Programme on Foundation Program in ICT for Education**, conducted by IIT Madras from 8th March -12th April, 2018.
7. Attended a **Two weeks Refresher Course** on Research Methodology at HRDC, SMVDU, Katra during 14-27 March, 2017.
8. Participated in **one week TIES** sponsored national workshop on “Basic Econometrics” w. e. f. 3rd March, 2014 to 8th March, 2014 at School of Business, Faculty of Management, Shri Mata Vaishno Devi University, Katra.
9. Participated in a **Two weeks** workshop on Control Systems under the National Mission on Education through ICT (MHRD, Govt. of India) during 2-12 December, 2014 conducted by IIT Kharagpur at SMVD University, Katra.
10. Attended a **Three week** Refresher course in Mathematical Science (Mathematics and Statistics) at UGC-ASC, University of Mysore w.e.f. 1-3-2013 to 21-3-2013.
11. Attended a **Four week** General Orientation Course at UGC-ASC, University of Jammu w. e. f. 20-11-2012 to 17-12-2012.
12. Attended a **TWO-DAY** ISTE WORKSHOP on Research Methods in Educational Technology Under the National Mission on Education through ICT (MHRD, Govt. of India) 2nd & 9th February 2013 at Shri Mata Vaishno Devi University, Katra.
13. Participated in a **six weeks** “Summer Faculty Research Fellow Programme-2012 at IIT Delhi” w. e. f. 4th June, 2012 to 13th July, 2012 under Quality Improvement Programme/Continuing Education Programme.
14. Participated in a **two weeks** AICTE approved Staff Development Programme on “ Introduction to MATLAB and Matrox Imaging Library with emphasis on hands on practice (WMMIL’11), December 16-29, 2011 at SECE, SMVD University, Katra, J&K.
15. Organized a Mathematics Session during INSPIRE camp at SMVDU, Katra, April 19-23, 2010.

16. Participated in one day Faculty Development Programme on “Developing Leadership Skills” at Jaipuria Institute of Management, Ghaziabad on 31st May, 2008.
17. Conducted an Academic Forum and deliberated on the topic “Live Projects as Pedagogical Tools) at Hindustan Institute of Management, SGI, Greater Noida.
18. Participated in a DST sponsored National symposium on “Applications of Statistics and Operations Research in Indian Industries” Dec. 17-20, 2007 at Indian Statistical Institute (ISI), Hyderabad.
19. Attended a Faculty Development Programme at Amity Business School, Amity University on May 13, 2006.
20. Attended a Faculty Development Workshop, at ICFAI National College, Meerut on “New and Innovative Pedagogy in Higher Education” January 24, 2006.
21. Attended a training programme in “Bio-Statistical Methods” at Institute for Research in Medical Statistics, ICMR, New Delhi during June 18-22, 2001.

Administrative Experience:

1. Senate Member, Namibia University of Science and Technology, Namibia.
2. Board of Studies Member, Faculty of Health and Applied Sciences, Namibia University of Science and Technology, Namibia.
3. Member, Faculty Research and Publication Committee, Faculty of Health, Applied Sciences and Natural Resources, Namibia University of Science and Technology, Namibia.
4. Faculty Representative (Faculty of Health, Applied Sciences and Natural Resources), Institutional Research Ethics Committee, Namibia University of Science and Technology, Namibia.
5. Member Secretary, School Research Committee, School of Vaishno Devi University 2010-2020.
6. Member Secretary, Board of Studies, School of Mathematics, Shri Mata Vaishno Devi University w.e.f. October, 2020.
7. Warden, Vindhychal Hostel, Shri Mata Vaishno Devi University for the Academic Year 2020-2021 w.e.f. 23rd October, 2020.
8. Joint Warden, Nilgiri Hostel, Shri Mata Vaishno Devi University (June 2017-22nd October, 2020).
9. Joint Warden, Vindhychal Hostel, Shri Mata Vaishno Devi University (June 2016-May, 2017).
10. In-charge, Library Committee, School of Mathematics, Shri Mata Vaishno Devi University.
11. Member Secretary, Standing Purchase Committee, Dean Students Welfare (January, 2019 onwards).
12. Member, Academic Affairs Committee, School of Mathematics, Shri Mata Vaishno Devi University.
13. Member, Library Committee, DQA, Shri Mata Vaishno Devi University.

14. Member, Admission Committee, School of Mathematics, Shri Mata Vaishno Devi University.
15. School Coordinator, Alumni Affairs Committee, Shri Mata Vaishno Devi University.
16. Centre Controller at Delhi for SEE-UPTU: 2009.
17. Management Representative for ISO 9001& 14001 activities of ABS, Amity University, Uttar Pradesh.
18. Coordinator, Faculty Development at Hindustan Institute of Management, India.
19. Member, Academic Council. Sharda University, India.

Research Evaluation Work

1. Acted as an external expert to conduct the viva-voce examination of a Ph.D. thesis titled, “Decision Makings in Pricing Policies for Deteriorating Items” at Dr. Harisingh Gaur Vishwavidyalaya (A Central University) Sagar, M. P., August, 2021.
2. Evaluated the Ph.D. thesis titled, “Development of Optimal Pricing Policies and Replenishments with Investment on Item Preservation Technology” for Dr. Harisingh Gaur Vishwavidyalaya (A Central University) Sagar, M. P.
3. Evaluated the Ph.D. thesis titled, “ Decision Makings in Pricing Policies for Deteriorating Items” for Dr. Harisingh Gaur Vishwavidyalaya (A Central University) Sagar, M. P.
4. Evaluated the Ph.D. thesis titled, “Supply Chain coordinations for manufacturers, distributors and retailers” for Dr. Harisingh Gaur Vishwavidyalaya (A Central University) Sagar, M. P.
5. Evaluated the Ph.D. thesis titled, “A Transient Study of Queues with Impatience and Retention” for SMVD University, Katra.
6. Evaluated the Ph.D. thesis titled, “Analysis of Retrial and Perishable Inventory Models with Negative Customers, Service Interruptions and multiple working vacations” for Andhra University.
7. Evaluated the Ph.D. thesis titled, “Performance Analysis of Impatient Customer Queues with and without Working Vacations” for Andhra University.
8. Evaluated the M. Phil. Thesis titled, “Time dependent analysis of Markovian Queuing System subjected to catastrophes and restoration” for Banasthali University.
9. Evaluated the Ph.D. thesis titled, “Markovian Queueing Models for Retention of Impatient Customers” for SMVD University, Katra.
10. External Examiner for conducting the viva-voce of M.Sc. Mathematics students’ at Central University of Jammu on 12th May, 2018.
11. External Examiner for conducting the viva-voce of M.Sc. Mathematics students’ at Central University of Jammu on 20th May, 2019.

Volunteering Reviewing Work

Actively engaged in the volunteer reviewing work of many journals of Springer, Taylor and Francis, Elsevier and many other journals. I am also a regular reviewer of Mathematical Reviews.

Membership Professional Bodies

1. American Mathematical Society, Affiliate Member
2. Operational Research Society of India, Life Member
3. Indian Mathematical Society, Life Member
4. International Indian Statistical Association, Life Member
5. Indian Society of Industrial and Applied Mathematics, Life Member
6. Indian Society for Probability and Statistics, Life Member
7. Jammu Mathematical Society, Life Member
8. IAENG Society for Operations Research, Member
9. Indian Statistical Institute, Member
10. EURO working group on Stochastic Modelling (UK), Member
11. IEEE, Member

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Linkedin: <https://www.linkedin.com/in/dr-rakesh-kumar-2772671b/>

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