Dr Ompal Singh

Title	Associate. Prof.	First Name	**OMPAL**	Last Name	**SINGH**	Photograph
Designation		**Associate Professor in the Department of Operational Research**				
Address		**Department of Operational Research** **University of Delhi** **Delhi – 110007**				
Phone No. Office		**+91-11- 27666672**				
Residence Mobile		**+91-11-27666699** **+91-9971999999**				
Email		**drompalsingh@live.com,** **drompalsingh1@gmail.com**				

Education Qualifications		
Degree	Institution	Year
Ph.D	**University of Delhi**	**2004**

Career Profile

Dr. Ompal Singh is Associate Professor in the Department of Operational Research, University of Delhi. He is currently a member of Society for Reliability Engineering, Quality and Operations Management (Regd.). He obtained his Ph.D. degree in Software Reliability (Operational Research) from University of Delhi in 2004. He has published extensively in Indian journals and abroad in the areas of Marketing, Software Reliability and Optimization. He has around 15 years of experience in Teaching, Research and Consultation in the area of Data-Handling, Data-Analysis and Modeling in the various field of Operational Research.

Dr. Ompal Singh has guided eleven Ph.D Scholars and eleven M Phil Research Scholars in Operational Research. He is presently guiding six Ph.D Scholars and two M.Phil Research Scholars.

Administrative Assignments

- Worked as a Deputy Proctor University of Delhi, Delhi-11007.
- Involved in Assessment of Colleges & Departments NAAC Preparation, **2016**.
- Security In Charge of Antardhwani Program, **2013-2016**.
- Member, Organizing Committee, Conference Secretary in 7th International Conference on Quality, Reliability, Infocom Technology and Business Operations (Trends and Future Directions) (ICQRIT), University of Delhi, Delhi, Dec. **2015**
- Conference Secretary in 6th International Conference on Quality Reliability Infocom Technology and Industrial Technology Management , (ICQRITITM), University of Delhi, Delhi, Nov. **2012**
- Resident Tutor in Mansarowar Hostel, University of Delhi, resigned due to an accident in September **2006**
- Active member in "Campus improvement committee", "Extra curricular Committee" and "Discipline Committee" of Maharaja Agrasen College.
- Member, Program Committee, Second International Conference on Quality, Reliability and 'IT' will be held at Indian National Science Academy, New Delhi during December 18-20, **2003**.
- General Secretary of Delhi University Research Association (DURA), during **2001** to **2003**.
- Member, Organizing Committee, International Conference on Quality, Reliability and 'IT' held at Indian National Science Academy, New Delhi during December 21-23, **2000**.

Areas of Interest / Specialization

Software Reliability, Optimization,, Innovation Diffusion Modeling and Marketing

Editorial Work

- Editor of Conference Proceeding of Quality, Reliability, Infocom Technology and Industrial Technology Management, ISBN: 978-93-84588-57-1, 2015
- Co-Editor of Special Issue of CDQM-An International Journal, January 2015
- Guest Editor of Special Issue of CDQM-An International Journal, January 2013.
- Guest Editor of forthcoming issue of IJSAEM, December 2013.
- Editor of Book containing proceedings of ICQRIT-2009, November 2012.

Subjects Taught

- Software Reliability

- Marketing Research
- Marketing Management
- DBMS & Visual Basic

Research Guidance

1. Supervision of Doctoral Thesis, awarded: 12

- Modeling Awareness based Innovation Adoption In Marketing & Economic Analysis Of Software Patching, **Mohini Agarwal**, 2018
- Quantitative Assessment of Software Warranty, Innovation & Big Data Projects Adoption, **Nitin Sachdeva**, 2018
- Analytical Study of Pricing, Warranty, Release and Testing Stop Time of a Software, **Avinash Kumar Shrivastava**, 2017
- Modeling Innovation Adoption for Successive Generations in Marketing & Its Interdisciplinary Nature with Software Reliability, **Deepti Aggarwal**, 2015
- Software Reliability Growth Modeling Multi Up-Gradations and their Release, **Jyotish Nendra Pratap Singh**, 2014.
- A Study of Innovation Adoption & Warranty Analysis in Marketing and Successive Software Releases, **Adarsh Anand**, 2013.
- A Generalized Modeling Framework in Software Reliability and Related Problems, **Jyotish Kumar**, 2013.
- Optimal Component Selection for Designing Fault Tolerant Modular Software System under Recovery Block Scheme, **Ritu Arora**, 2012.
- Contribution to Stochastic Mathematical Modeling and Optimization Problems in Software Reliability and Marketing, **Kuldeep Chaudhary**, 2012.
- Contribution to Some Optimization Problems of Component Selection for Modular Software System and Release Time for System Testing, **Indumati**, 2012.
- Modeling Quality Assessment of Software Reliability and Multi up-gradations, **Jagvinder Singh,** 2011.
- Modeling and Allocation Problems in Software Reliability and Marketing, **Mashaallh Basirzadeh**, 2010.

2. Supervision of Doctoral Thesis, under progress: 6

3. Supervision of M.Phil Dissertation, awarded: 11,

4. Supervision of M.Phil Dissertation, under progress: 2

Publications Profile

Research Papers published in Academic Journals and Conferences

1. Aggarwal, R., **Singh, O.**, Anand, A., & Kapur, P. K. (**2019**). Modeling innovation adoption incorporating time lag between awareness and adoption process. *International Journal of System Assurance Engineering and Management*, 1-8.
2. Kapur, P. K., Panwar, S., & **Singh, O.**, (**2019**). Modeling Technological Substitution by Incorporating Dynamic Adoption Rate. *International Journal of Innovation and Technology Management*, 16(1), 1950001-19500024.
3. Anand, A., Deepika & **Singh, O**. (**2019**). Formulation of Error Generation-Based SRGMs under the Influence of Irregular Fluctuations. In *System Performance and Management Analytics* (pp. 103-117). Springer, Singapore.
4. Kaur, J., Anand, A., & Singh, O. (2019). Modeling Software Vulnerability Correction/Fixation Process Incorporating Time Lag. Recent Advancements in Software Reliability Assurance, 39.
5. Singhal, S., Anand, A., & Singh, O. (2019). Understanding multi-stage diffusion process in presence of attrition of potential market and related pricing policy. Yugoslav Journal of Operations Research.
6. Anand, A., Deepika, **Singh, O.** & Kapur, P.K. (2018). Stochastic Differential Equation based Formulation for Multiple Software Release Considering Fault Detection & Correction Process. accepted for *Mathematics applied and Information Systems- Bentham Science* as a chapter
7. Anand A., Das S., **Singh O.**, (**2018**). Patching: A Requirement for Complete Software Testing. *International Journal of Software Engineering* (IJSE), 11(1), 3-14.
8. Anand, A., Aggarwal, R., & **Singh, O.** (**2018**). Market segmentation based modeling: An approach to understand multiple modes in diffusion curves. In *Advanced Mathematical Techniques in Engineering Sciences* (pp. 165-176). CRC Press.
9. Anand, A., Singhal, S., & **Singh, O.** (**2018**). Revisiting Dynamic Potential Adopter Diffusion Models under the Influence of Irregular Fluctuations in Adoption Rate. *In Handbook of Research on*

Promoting Business Process Improvement Through Inventory Control Techniques (pp. 499-519). IGI Global.

10. Anand, A., Agarwal, M., Aggrawal, D., & **Singh, O.** (**2018**). Queuing theory-based innovation diffusion modelling incorporating change in adoption rate. *International Journal of Mathematics in Operational Research*, *12*(1), 102-116.
11. Sachdeva, N., Kapur, P. K., & **Singh, O.** (**2018**). Generalised framework for optimal pre and post release software testing in presence of warranty. *International Journal of Procurement Management*, *11*(2), 172-200.
12. Sachdeva, N., Kapur, P. K., & **Singh, O**. (**2018**). Two-Dimensional Framework to Optimize Release Time and Warranty. In *Quality, IT and Business Operations* (pp. 383-404). Springer, Singapore.
13. Sachdeva, N., Kapur, P. K., & **Singh, O**. (**2018**). When to Start Remanufacturing Using Adopter Categorization. In *Quality, IT and Business Operations* (pp. 443-465). Springer, Singapore.
14. Anand A., Singhal, S., Panwar, S., **Singh, O.** (**2018**). Optimal Price and Warranty Length for Profit Determination: An Evaluation based on Preventive Maintenance. In *Quality, IT and Business Operations* (pp. 265-277), Springer, Singapore.
15. Agarwal, M., Aggrawal, D., Anand A., **Singh, O.,** (**2017**). Modeling Multi-generation Innovation Adoption based on Conjoint effect of Awareness Process. *International Journal of Mathematical, Engineering and Management Sciences*, 2(2), 74-84, **ISSN: 2455-7749**.
16. Deepika, **Singh, O.**, Anand A., Singh J. N. P. (**2017**). Testing Domain Dependent Software Reliability Growth Models. *International Journal of Mathematical, Engineering and Management Sciences*, 2(3), 140-149, **ISSN: 2455-7749.**
17. Kapur, P. K., Sachdeva, N., & **Singh, O.** (**2017**). Optimal profit for manufacturers in product remanufacturing diffusion dynamics. *Journal of Industrial and Production Engineering*, 1-12, **Print ISSN: 2168-1015 Online ISSN: 2168-1023**.
18. Kapur, P. K., Shrivastava, A. K., & **Singh, O.** (**2017**). When to Release and Stop Testing of a Software. Journal of the Indian Society for Probability and Statistics, 18(1), 19-37, **ISSN: 2364-9569 (Online).**
19. Anand, A., Das, S., & **Singh, O.** (**2016**, September). Modeling software failures and reliability growth based on pre & post release testing. *In Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO), 2016 5th International Conference on* (pp. 139-144) IEEE, **Electronic ISBN**: 978-1-5090-1489-7 Print on Demand (PoD) ISBN: 978-1-5090-1490-3.
20. Anand, A., Singhal, S., & **Singh, O.** (**2016**, September). Multi-stage diffusion dynamics based on

optimal control theory. In *Reliability, Infocom Technologies and Optimization (Trends and Future Directions)(ICRITO), 2016 5th International Conference on* (pp. 100-106). IEEE, **ISBN**: 978-1-5090-1489-7.

21. Sachdeva, N., Kapur, P. K., & **Singh, O.** (**2016**). An innovation diffusion model for consumer durables with three parameters. *Journal of Management Analytics*, *3*(3), 240-265.
22. Anand, A., Agarwal, M., Aggrawal, D., & **Singh, O**. (**2016**). Unified approach for modeling innovation adoption and optimal model selection for the diffusion process. *Journal of Advances in Management Research*, 13(2), 154-178.
23. Anand, A., **Singh, O.**, Aggarwal, R., & Aggrawal, D. (**2016**). Diffusion Modeling Based on Customer's Review and Product Satisfaction. *International Journal of Technology Diffusion (IJTD)*, 7(1), 20-31.
24. Adarsh, A., Richie, A., **Ompal, S.**, & Deepti, A. (**2016**). Understanding diffusion process in the context of product dis-adoption. *St. Petersburg State Polytechnical University Journal. Economics*, 240(2), 7-18.
25. Sachdeva, N., **Singh, O.**, Kapur, P. K., & Galar, D. (**2016**). Multi-criteria intuitionistic fuzzy group decision analysis with TOPSIS method for selecting appropriate cloud solution to manage big data projects. *International Journal of System Assurance Engineering and Management*, 7(3), 316-324., DOI 10.1007/s13198-016-0455-x.
26. Aggrawal, R., **Singh**, **O.**, Anand, A., Yadavalli, V. S. S., (**2016**). Market Expansion Based Innovation Diffusion Modeling and Optimal Timing for Changing Management Strategy. *CDQM-An International Journal*, volume 19, No. 1, pp. 27-35.
27. Anand, A., Deepika, **Singh, O., (2016).** Incorporating Features Enhancement Archetype in Software Reliability Growth Modeling and Optimal Release Time Determination. *International Journal of Computer Applications* (0975-8887), 139(4).
28. Das, S., Anand, A., **Singh, O.**, Singh, J., (**2015**). Influence of Patching on Optimal Planning for Software Release &Testing. *CDQM-An International Journal*, 18(4), 81-92.
29. Anand, A., **Singh, O.**, & Das, S. (**2015**). Fault Severity based Multi Up-gradation Modeling considering Testing and Operational Profile. *International Journal of Computer Applications*, *124*(4).
30. Anand, A., **Singh, O.**, Aggarwal, R., & Kapur, P. K. (**2015**, February). Customer behavior dependent diffusion process & optimal model selection using distance based approach. In *Futuristic Trends on Computational Analysis and Knowledge Management (ABLAZE), 2015 International Conference on* (pp. 711-716). IEEE.

31. Kapur, P. K., **Singh, O.**, Shrivastava, A. K., & Singh, J. N. (**2015**, February). A software up-gradation model with testing effort and two types of imperfect debugging. In *Futuristic Trends on Computational Analysis and Knowledge Management (ABLAZE), 2015 International Conference on* (pp. 613-618). IEEE.
32. Kapur, P. K., **Singh, O.**, & Shrivastava, A. K. (**2015**, September). A generalized framework for multi release of a software under Distributed Environment. In *Reliability, Infocom Technologies and Optimization (ICRITO) (Trends and Future Directions), 2015 4th International Conference on* (pp. 1-6). IEEE.
33. Kapur, P. K., Sachdeva, N., & **Singh, O.** (**2015**, February). Generalized discrete time model for multi generational technological products. In *Futuristic Trends on Computational Analysis and Knowledge Management (ABLAZE), 2015 International Conference on* (pp. 717-723). IEEE.
34. Sachdeva, N., **Singh, O.**, & Kapur, P. K. (**2015**). Optimal launch of a new generation of technology: a multi attribute approach discrete time diffusion process. *International Journal of Technology Marketing*, 11(1), 3-23.
35. Sachdeva, N., **Singh, O.**, & Kapur, P. K. (**2015**). Modeling critical success factors for adoption of big data analytics project: an ISM-MICMAC based analysis. *Communication Dependability Quality Management International Journal*, *18*(4), 93-110.
36. **Singh, O.**, Kapur, P.K., Sachdeva, N., (**2015**). Technology Management in Segmented Markets. Quality, Reliability and Infocom Technology and Industrial Technological Management, I.K. International Publishing House Pvt. Ltd., 78-89.
37. Kapur, P.K., Khatri, S. K., **Singh, O.**, Sachdeva, N., (**2015**). Multi Criteria Based Optimal Launch Time of a New Product. *Quality, Reliability and Infocom Technology and Industrial Technological Management, I.K. International Publishing House Pvt. Ltd.*, pp. 289-306.
38. Adarsh Anand, **Ompal Singh**, Mohini Agarwal, Richie Aggarwal, "A Discrete Innovation Diffusion Model Incorporating Change in the Adoption Rate", In Futuristic Trends on Computational Analysis and Knowledge Management (ABLAZE), International Conference, pp.73-79, 25-27 Feb. **2015**, DOI: 10.1109/ABLAZE.2015.7154973.
39. Aggrawal, D., Anand, A., **Singh, O.**, & Kapur, P. K. (**2015**). Modelling successive generations for products-in-use and number of products sold in the market. *International Journal of Operational Research*, *24*(2), 228-244.
40. Kapur, P. K., Singh, J. N., & **Singh, O.** (**2015**). Application of multi attribute utility theory in multiple releases of software. *International Journal of System Assurance Engineering and*

Management, *6*(1), 61-70.

41. **Singh, O.**, Kapur, P. K., Shrivastava, A. K., & Kumar, V. (**2015**). Release time problem with multiple constraints. *International Journal of System Assurance Engineering and Management*, *6*(1), 83-91, ISSN: 0975-6809 (print version), ISSN: 0976-4348 (electronic version).

42. Anand, A., **Singh, O.**, Agarwal, M., & Aggarwal, R. (**2014**, October). Modeling adoption process based on awareness and motivation of consumers. In *Reliability, Infocom Technologies and Optimization (ICRITO)(Trends and Future Directions), 2014 3rd International Conference on* (pp. 1-6). IEEE, Print ISBN: 978-1-4799-6895-4.

43. **Singh, O.,** Kapur, P. K., Sachdeva, N., & Bibhu, V. (**2014**, October). Innovation diffusion models incorporating time lag between innovators and imitators adoption. In *Reliability, Infocom Technologies and Optimization (ICRITO)(Trends and Future Directions), 2014 3rd International Conference on* (pp. 1-6). IEEE. DOI: 10.1109/ICRITO.2014.7014710, 2014, Print **ISBN**: 978-1-4799-6895-4

44. **Singh, O.,** Kapur, P. K., Shrivastava, A. K., & Das, L. (**2014**, October). A unified approach for successive release of a software under two types of imperfect debugging. In *Reliability, Infocom Technologies and Optimization (ICRITO)(Trends and Future Directions), 2014 3rd International Conference on* (pp. 1-6). **IEEE.** Print ISBN: 978-1-4799-6895-4

45. **Singh**, O., Anand, A., Aggrawal, D., Agarwal, M. (**2014**) "Utility Based Assessment Of Attributes For Software Quality" proceeding of 5th International DQM conference on life cycle engineering and management (ICDQM-**2014**), 95-110, Serbia.

46. Aggrawal, D., Anand, A., **Singh, O.**, & Singh, J. (**2014**). Profit maximization by virtue of price & warranty length optimization. *The Journal of High Technology Management Research*, *25*(1), 1-8, **ISSN: 1047-8310**

47. Anand, A., **Singh, O.**, Kapur, P. K., & Das, S. (**2014**). Modeling Conjoint Effect of Faults Testified from Operational Phase for Successive Software Releases. In *Proceedings of the 5th International Conference on Life Cycle Engineering and Management (ICDQM)* (pp. 83-94), Serbia.

48. Aggrawal, D., **Singh, O.**, Anand, A., & Agarwal, M. (**2014**). Optimal introduction timing policy for a successive generational product. *International Journal of Technology Diffusion (IJTD)*, *5*(1), 1-16,

ISSN (printed): 1947-9301. ISSN (electronic): 1947-931X.

49. **Singh, O.**, Anand, A., Aggrawal, D., & Papic, L. (**2014**). Uncertainty Based Fault Removal Phenomenon and Successive Software Releases Planning. *Communications in Dependability and Quality Management-An International Journal, Serbia*, *17*(1), 5-17.

50. **Singh, O.,** Singh, J. N., Tickoo, A., & Kapur, P. K. (**2014**). Fault Removal Phenomenon Using Different Distribution Functions for Each Release. *International Journal of Modeling and Optimization*, *4*(1), 5-9.

51. **Singh**, **O.**, Kapur, P. K., Sachdeva, N., Shrivastava, A.K. (**2014**). Optimizing Software Multiple Versions Testing Time under Budget and Reliability Constraint. In *Proceedings of the 5th International Conference on Life Cycle Engineering and Management (ICDQM)* (pp. 51-69), Serbia.

52. Kapur, P. K., **Singh, O.**, & Shrivastava, A. K. (**2014**). Optimal price and testing time of a software under warranty and two types of imperfect debugging. *International Journal of System Assurance Engineering and Management*, *5*(2), 120-126.

53. Kapur, P. K., Khatri, S. K., **Singh, O.**, & Shrivastava, A. K. (**2014**, March). When to stop testing under warranty using SRGM with change-point. In *IT in Business, Industry and Government (CSIBIG), 2014 Conference on* (pp. 1-7). IEEE.

54. Anand, A., **Singh, O.,** Aggrawal, D., & Singh, J. **(2014).** An interactive approach to determine optimal launch time of successive generational product. *International Journal of Technology Marketing*, *9*(4), 392-407.

55. **Singh, O.,** Anand, A., Aggrawal, D., & Singh, J. **(2014).** Modeling multi up-gradations of software with fault severity and measuring reliability for each release. *International Journal of System Assurance Engineering and Management*, *5*(2), 195-203.

56. Kapur, P. K., **Singh, O.**, & Singh, J. N. (**2013**). Software Release Time Based on Multi Attribute Utility Theory. *Communication in dependability and quality management-An International Journal*, Serbia, 16(4), 5-16.

57. **Singh**, **O.**, Singh, J. N. P., Anand, A., Kapur, P. K. (**2013**). Optimal Release time of software: An integrated approach. *In the proceeding of 4th International DQM conference on life cycle engineering and management* (ICDQM)(pp-148-161), Serbia.

58. Kapur, P. K., Singh, V. B., **Singh, O.**, & Singh, J. N. (**2013**). Software release time based on different multi-attribute utility functions. *International Journal of Reliability, Quality and Safety Engineering*, *20*(04), 1350012.

59. Anand, A., Kapur, P. K., **Singh**, **O.**, Sachdeva, N. **(2013)**. Optimal Warranties and Two Dimensional Innovation Diffusion. Available at SSRN: http://ssrn.com/abstract=2267825 or http://dx.doi.org/10.2139/ssrn.2267825

60. **Singh, O.,** Aggrawal, D., & Kapur, P. K. **(2012).** Reliability analysis and optimal release time for a software using multi-attribute utility theory. *Communications in Dependability and Quality Management-An International Journal, Serbia*, *5*(1), 50-64.

61. **Singh, O.,** Anand, A., Kapur, P. K., & Aggrawal, D. **(2012).** Consumer behaviour-based innovation diffusion modelling using stochastic differential equation incorporating change in adoption rate. *International Journal of Technology Marketing*, *7*(4), 346-360.

62. Singh, J., **Singh, O.**, Aggrawal, D., Anand, A., & Singh, I. (**2012**). A flexible reliability growth model for various releases of software under the influence of testing resources. *J Pure Appl Sci Technol NLSS*, *2*(2), 23-35.

63. **Singh**, **O.**, Aggrawal, D., Kapur, P. K. (**2012**). Simultaneous Consideration of Time & Price for Adoption of Consumer Durables. In the proceedings of 6th International Conference on Quality, Reliability, Infocom Technology and Industrial Technology Management (ICQRITITM-**2012**).

64. **Singh, O.,** Kapur, P. K., & Anand, A. **(2012).** A multi-attribute approach for release time and reliability trend analysis of a software. *International Journal of System Assurance Engineering and Management*, *3*(3), 246-254.

65. Kapur, P. K., **Singh**, O., Anand, A. (**2012**). Two Dimensional Software Reliability Modeling and Related Allocation Problems using Genetic Algorithm. Journal of Life Cycle Reliability and Safety Engineering, 1(2), 44-60.

66. Kapur, P. K., Singh, G., **Singh, O.**, & Anand, A. (**2012**). Assessing diffusion process in context of customer behaviour based on fluctuation in adoption rate. *International Journal of Mathematical Modelling, Simulation and Applications*, *5*(1), 1-10.

67. **Singh**, **O.,** Singh, J. N. P., Kapur, P. K. (2012). Two Dimensional Software Reliability Growth Model

under the Effect of Imperfect Debugging and Error Generation. Accepted for publication in International Journal of Mathematical Modeling Simulation and Applications (IJMMSA).

68. **Singh, O.,** Anand, A., Singh, J., & Kapur, P. K. **(2012).** Assessment of Distribution Based SRGM with the Effect of Change-Point and Imperfect Debugging incorporating Irregular Fluctuations. *Journal of Pure and Applied Science & Technology*, *2*(1), 37-50.

69. **Singh**, **O.**, Singh, J., Anand, A., Singh, I. (2012). Software Metrics and Reliability. In Proceedings of the 6th National Conference; INDIACom **2011**, Eds. Prof M.N. Hoda ,Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi.

70. Singh, J., **Singh, O.**, Aggrawal, D., & Singh, I. (**2012**). On the Development of Software Reliability Growth Model Based on Features Enhancement. *Journal of Pure & Applied Science & Technology*, *2*(1). 23-31.

71. **Singh**, **O.**, Kapur, P. K., Anand, A., Kumar, J. (**2012**). A Software Reliability Growth Model Embodying Features Intensification" Accepted for publication in International Business Horizon (INBUSH), Amity University, Noida, UP, India.

72. **Singh**, **O.**, Kapur, P. K., Singh, J. N. P. (**2012**). Software Multi upgradation model for successive release. In *proceedings of Fourth International Conference on Quality, Reliability and Infocom Technology (ICQRIT), Trends And Future Directions, Narosa Publications* (pp 77-87).

73. **Singh**, **O.**, Kapur, P. K., Singh, G., Singh, J. N. P. (**2012**). Testing Effort Based Multi-up Gradation Software Reliability Growth Model" Communications in Dependability and Quality Management-An International Journal (CDQM), 15(1), 88-100.

74. **Singh, O.,** Singh, J. N., Kumar, J., & Kapur, P. K. **(2012).** Some Flexible Software Reliability Growth Models Using Two-Dimensional Approach. *Journal of Pure and Applied Science & Technology*, 3(1), 13-22.

75. **Singh, O.**, Kapur, P. K., & Anand, A. (**2011**, December). A stochastic formulation of successive software releases with faults severity. In Industrial Engineering and Engineering Management (IEEM), 2011 IEEE International Conference on (pp. 136-140). **IEEE**.

76. Kapur, P. K., Anand, A., **Singh, O.**, & Hoda, M. N. (**2011**). Modeling successive software up-gradations with faults of different severity. In *Proceedings of the 5th national conference, INDIA*

Com (pp. 351-356).

77. **Singh, O.,** Kapur, P. K., Anand, A., & Singh, J. **(2011).** Stochastic differential equation based modeling for multiple generations of software and optimal release planning. In *Proceedings of 5th international conference on quality, reliability and infocom technology (ICQRIT), trends and future* (Vol. 8). Nepal, SN-19, pc-19.

78. **Singh**, **O.**, Kapur, P. K., Khatri, S. K., Singh, J N P. (**2011**). Testing Domain Based Software Reliability Growth Model incorporating the effect of imperfect debugging and error generation" *proceedings of 5th International Conference on Quality, Reliability and Infocom Technology (ICQRIT), Trends and Future Directions,* Kathmandu, Nepal, SN-21, pc-21.

79. Kapur, P. K., **Singh, O.**, & Singh, J. (**2011**) Stochastic Differential Equation Based Software Reliability Growth Modeling With Change Point and Two Types of Imperfect Debugging. in Proceedings of the 5th National Conference; INDIACom, Eds. Prof M.N. Hoda ,Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi.605-612.

80. **Singh, O.,** Kapur, P. K., & Anand, A. **(2011)**. A dynamic potential adopter diffusion model incorporating change in the adoption rate. In *Proceedings of the International Congress on Productivity, Quality, Reliability, Optimization and Modeling (ICPQROM-2011)* (Vol. 1, pp. 593-604). New Delhi: ISI, Allied Publishers Pvt. Ltd.

81. Jha, P. C., Indumati, **Singh, O.**, & Gupta, D. (**2011**). Bi-criterion release time problem for a discrete SRGM under fuzzy environment. *International Journal of Mathematics in Operational Research*, *3*(6), 680-696.

82. Kapur, P. K., **Singh, O.**, Garmabaki, A. S., & Singh, J. (**2010**). Multi up-gradation software reliability growth model with imperfect debugging. *International Journal of System Assurance Engineering and Management*, *1*(4), 299-306.

83. Kapur, P.K., **Singh**, **O.,** Yadav, K., Singh, J. (**2010**). Component Specific Testing-Effort functions based Software Reliability Growth Modeling for Distributed Environment. *Communications in Dependability And Quality Management-An International Journal*, Serbia, 13(3), 46-60.

84. **Singh, O.,** Kapur, R., & Singh, J. **(2010)**. Considering the effect of learning with two types of imperfect debugging in software reliability growth modeling. *Communications in Dependability and*

Quality Management, 13, 29-39.

85. Kapur, R., **Singh, O.,** & Singh, J. **(2010)**. An Irregular Fluctuation Based multi up-gradation software reliability model. In Proceedings of the International Conference on Reliability, Infocom Technology and Optimization" (ICRITO), vol.-I, Eds.: S. K. Khatri and Brijesh Kumar, Lingya's University, Faridabad, 734-741.

86. Kapur, P. K., **Singh**, **O.**, Tandon, A. (**2010**). Bi criterion Release Policy for a Software Reliability Growth Model Incorporating the Effect of Change point" In Proceedings of the International Conference on Reliability, Infocom Technology and Optimization" (ICRITO) vol. I, eds.: S. K. Khatri and Brijesh Kumar, Lingya's University, Faridabad, 214-226.

87. **Singh**, **O.**, Anand, A., Kapur, P.K., Singh, J. (**2010**). Mathematical Modeling of Multi-Upgradation in Software Considering Faults severity. Presented at International Conference on Development and Applications of Statistics in Emerging Areas of Science and Technology (ICDASEAST), Jammu.

88. Kapur, P. K., **Singh, O.**, Chanda, U., & Basirzadeh, M. (**2010**). Determining adoption pattern with pricing using two-dimensional innovation diffusion model. *The Journal of High Technology Management Research, 21*(2), 136-146.

89. **Singh, O.,** Kapur, P. K., Anand, A., & Singh, J. **(2009)**. Stochastic Differential Equation based Modeling for Multiple Generations of Software. In *Proceedings of Fourth International Conference on Quality, Reliability and Infocom Technology (ICQRIT), Trends and Future Directions, Narosa Publications* (pp. 122-131).

90. Jha, P.C., **Singh**, **O.,** Indumati, Kapur, P.K. (**2009**). Bi-Criteria Release Time Problem on Two Types of Imperfect Debugging on Release Time under Fuzzy Environment" Presented at 11th National Conference of Indian Society of Information Theory and Application (ISITA) Sarhali (Tarantaran) Amritsar.

91. Jha, P.C., **Singh**, **O.,** Chaudhary, K., Kapur, P.K. (**2009).** Adoption of Never Successive Technology Using Stochastic Differential Equation" Presented at 11th National Conference of Indian Society of Information Theory and Application (ISITA) Sarhali (Tarantaran) Amritsar.

92. **Singh**, **O.**, Singh, V.B., Kumar J., Kapur, P.K. (**2009).** Generalized modeling framework for fault detection–correction process incorporating change-point. *Communication in Dependability and*

Quality Management: An International Journal, Serbia, 12(1), 35-46.

93. Kapur, P. K., Khatri, S. K., Johri, P. & **Singh**, **O.** (**2009**). Incorporating Concept of Two Types of Imperfect Debugging for Developing Flexible Software Reliability Growth Model in Distributed Development Environment. *Journal of Technology and Engineering Sciences*, *1*(1), 9-19.

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95. Kapur, P. K., Goswami, D. N., Bardhan, A., & **Singh, O.** (**2008**). Flexible software reliability growth model with testing effort dependent learning process. *Applied Mathematical Modelling*, *32*(7), 1298-1307.

96. Kapur, P.K., **Singh**, **O.**, Kumar, A., Yamada, S. (**2007).** Discrete software reliability growth models for distributed systems. *In Quality Reliability and Infocom Technology Editors P.K. Kapur and A.K. Verma,* 101-115, McMillan Delhi.

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Publications in the Last one year

1. Aggarwal, R., **Singh, O.**, Anand, A., & Kapur, P. K. (2019). Modeling innovation adoption incorporating time lag between awareness and adoption process. International Journal of System Assurance Engineering and Management, 1-8.
2. Kapur, P. K., Panwar, S., & **Singh, O.,** (2019). Modeling Technological Substitution by Incorporating Dynamic Adoption Rate. International Journal of Innovation and Technology Management, 16(1), 1950001-19500024.
3. Anand, A., Deepika & **Singh, O.** (2019). Formulation of Error Generation-Based SRGMs under the Influence of Irregular Fluctuations. In System Performance and Management Analytics (pp. 103-117). Springer, Singapore.
4. Kaur, J., Anand, A., & **Singh, O.** (2019). Modeling Software Vulnerability Correction/Fixation Process Incorporating Time Lag. Recent Advancements in Software Reliability Assurance, 39.
5. Singhal, S., Anand, A., & **Singh, O.** (2019). Understanding multi-stage diffusion process in presence of attrition of potential market and related pricing policy. Yugoslav Journal of Operations Research.
6. Anand, A., Deepika, **Singh, O.** & Kapur, P.K. (2018). Stochastic Differential Equation based Formulation for Multiple Software Release Considering Fault Detection & Correction Process. accepted for *Mathematics applied and Information Systems- Bentham Science* as a chapter
7. Anand, A., Deepika & **Singh, O.** (2018). Formulation of Error Generation based SRGMs under the Influence of Irregular Fluctuations. Accepted in JIICQRIT 2017, (Springer Book).
8. Anand A., Singhal, S., **Singh, O.** (2018). Revisiting Dynamic Potential Adopter Diffusion Models under the Influence of Irregular Fluctuations in Adoption Rate, Accepted in *Promoting Business Process Improvement through Inventory Control Techniques*, IGI-Global.

9. Anand, A., Aggarwal, R., & **Singh, O. (2018)**. Market segmentation based modeling: An approach to understand multiple modes in diffusion curves. In Advanced Mathematical Techniques in Engineering Sciences (pp. 165-176). CRC Press.
10. Sachdeva, N., Kapur, P. K., & **Singh, O**. (**2018**). Two-Dimensional Framework to Optimize Release Time and Warranty. In *Quality, IT and Business Operations* (pp. 383-404). Springer, Singapore.
11. Sachdeva, N., Kapur, P. K., & **Singh, O**. (**2018**). When to Start Remanufacturing Using Adopter Categorization. In *Quality, IT and Business Operations* (pp. 443-465). Springer, Singapore.
12. Anand A., Singhal, S., Panwar, S., **Singh, O.** (**2018**). Optimal Price and Warranty Length for Profit Determination: An Evaluation based on Preventive Maintenance. In *Quality, IT and Business Operations* (pp. 265-277), Springer, Singapore.

Conference Organization/ Presentations

- Conference Co-Chair in 10th International Conference On Quality, Reliability, Infocom Technology And Business Operations, Lalitpur, Nepal, June 18–21, 2019.
- Conference Secretary in 9th International Conference On Quality, Reliability, Infocom Technology And Business Operations, University of Delhi, Delhi, Dec 28-30, 2018.
- Conference Co- Chair in 8th International Conference On Quality, Reliability, Infocom Technology And Business Operations, Amity University, Feb 8-10, 2017.
- Conference Secretary in 7th International Conference On Quality, Reliability, Infocom Technology And Business Operations, University of Delhi, Dec 28-30, 2015
- Participated in 5th DQM International Conference on Life Cycle Engineering and Management, (ICDQM), Belgrade, Serbia, 27-28 June, 2014**.**
- Worked as Conference Secretary in 6th International Conference on Quality Reliability Infocom Technology and Industrial Technology Management, (ICQRITITM), University of Delhi, Delhi, Nov. 2012**.**
- Participated in The IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), Singapore, 6-9 December 2011.
- Participated in 5th International Conference on Quality Reliability and Infocom Technology, (ICQRIT), Kathmandu, Nepal, 8-10 Dec. 2011.
- Participated in International Conference on Development and Applications of Statistics in Emerging Areas of Science and Technology (ICDASEAST), Jammu, 2010.

- Participated in 2nd International Conference on Reliability, Safety and Hazard" (ICRESH), Bombay, 2010.
- Participated in International Conference on Reliability, Infocom Technology and Optimization" (ICRITO), Faridabad, 2010.
- Chaired a Session at 23rd International Conference of Jangieon Mathematical Society, Ahvaz, Iran, and Feb 8-10, 2010.
- 4th International Conference on Quality, Reliability and Information Technology (Trends and Future directions), University conference hall, University of Delhi December 18-20, 2009.
- International workshop on Mathematical Modelling and related optimization techniques, seminar hall University of Delhi, December 14-17, 2009.
- 11th National Conference of Indian Society of Information Theory and Application (ISITA) Sarhali (Tarantaran) Amritsar, 2009
- International conference on operations research application in engineering and management (COREM Tiruchirapalli), 2009
- Participated in Partners in **Learning Teacher Training Program (TTP)** conducted by Microsoft and ILLL Delhi University, from April 20 to April 24, 2009.
- Pre-ICM International Convention on Mathematical Sciences, Department of Mathematics, University of Delhi, 18-20 December, 2008.

Research projects (Major Grants/Research Collaboration)

- Modeling Up-gradations and Release Time Problems of Software & Successive Generations of Technologies in Marketing: **Principal Investigator, DU-DST PURSE-II Grant. 2014-2015**
- Optimal Testing Stop Time & Warranty Length of Software: **Principal Investigator, R & D Research Project sponsored by University of Delhi. 2015-2016.**
- Analyzing Warranty Based Single & Multi Generational Diffusion of Products: **Principal Investigator, R & D Research Project sponsored by University of Delhi. 2014-2015.**
- On Modeling Reliability Growth & Multi up-gradations of Software: **Principal Investigator, R & D Research Project sponsored by University of Delhi. 2013-2014.**
- Worked as a "Project fellow" in the UGC sponsored project "Mathematical Modelling and its Validation: Allocation of resources and their control in software reliability and marketing (An inter-disciplinary approach)" in the Department of Operational Research. (April – August, 2001).

Awards and Distinctions

- Conferred with Diploma of Excellence for the research paper Presented on the occasion of 5th DQM International Conference on Life Cycle Engineering and Management, (ICDQM), 2014.
- Conferred with AWARD by Research Center of Dependability and Quality Management for the contribution to the development DQM Research Center. 2014.
- Conferred with Amity Award for **Best Academician Research Paper** Presentation on the occasion of International Business School Conference IBSCON 2014 by Amity International Business School, Amity University.
- Qualified National Eligibility Test for Lecturer-ship in Mathematical Sciences (examination held in June 2000) conducted jointly by CSIR and UGC.
- Worked as a "Project fellow" in the UGC sponsored project "Mathematical Modelling and its Validation: Allocation of resources and their control in software reliability and marketing (An inter-disciplinary approach)" in the Department of Operational Research. (April – August, 2001)

Associations With Professional Bodies

1. Members
   - Life member of ORSI.
   - Life Member, of Society for Reliability Engineering, Quality and Operations Management.
   - Life time Member of The Indian Science Congress Association

Other Activities

- **Collaborative research work** in the area of Operation and maintenance , Lulea University of technology, Sweden, June 2014
- Participated in a 3-week **Refresher UGC-CPDHE** Course in Mathematics and Operational Research from Dec 13, 2010 to Jan 4, 2011.

Signature of Faculty Member