


Dr. Sunil Tiwari

Date of Birth:	3 rd December, 1988	
Gender:	Male	
Marital Status:	Married	
Nationality:	Indian	
Mobile:	+65-94701192	
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ORCID:	orcid.org/0000-0002-0499-2794	
Home Page:	http://www.tliap.nus.edu.sg/about-us/People/researchers.html	
Google Scholar:	https://scholar.google.co.in/citations?user=FocCLLYAAAAAJ&hl=en	

Education

Doctorate:	Doctor of Philosophy (Ph. D.), 2016
Institute and Year:	Department of Operational Research, University of Delhi, Delhi, India
Duration:	2013 – 2016
Thesis Title:	Inventory Strategies for Deteriorating Items in Two Warehouse System
Principal thesis guide:	Prof. (Dr.) Chandra K. Jaggi
Master of Philosophy	Master of Philosophy (M. Phil.), 2013
	Department of Operational Research, University of Delhi, Delhi, India
	2011 – 2013, First Class with Distinction
Post-Graduation:	M. Sc. (OR), 2011
	Department of Operational Research, University of Delhi, Delhi, India
	2009 – 2011, First Class
Graduation:	B. Sc. (Hons.) Mathematics, 2009
	Deshbandhu College, University of Delhi, Delhi, India
	2006 - 2009, First Class

Current Position

02/2017-present: Research Fellow at The Logistics Institute - Asia Pacific, National University of Singapore, Singapore
Collaborator: Prof. Mark Goh

Academic Work Experience

The Logistics Institute – Asia Pacific, National University of Singapore (NUS)	Feb. 2017 – present
Project Lead - NATIONAL ROBOTICS PROGRAMME - ROBOTICS ENABLING CAPABILITIES AND TECHNOLOGIES , “Operations Analysis and Modeling of Hospital Logistics in Singapore - Identifying Productivity Improvement Opportunities through Innovative and Disruptive Technologies”, Singapore	
<ul style="list-style-type: none">Leading a team of Ten Postdoctoral Research Fellow to design a Simio model for different supply chain for four different hospitals in Singapore, which helps them to identify the bottlenecks in the work process and improve their productivity.	

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- Supported project scoping for hospitality and healthcare logistics, which resulted in the acquisition of grants from the Singapore National Founding Agency (A Star).
 - I have done researches and industrial projects on the optimization of operations, manufacturing, quality, logistics, and supply chain systems by proposing innovative or intelligent methods in order to enhance the effectiveness and efficiency. My principal initiative is to expand the study of Robotics & Automation introduction to intelligent processes in hospitality, healthcare, and logistics industries.

Ambedkar University, Delhi, Department of Mathematics

Jan 9, 2017 – Feb 17, 2017

- Taking lectures for Undergraduate Courses of B.Sc. (Hons.) Mathematics.

Department of Operational Research, University of Delhi

Jan 5, 2015 - April 25, 2015

- 6 months' experience of teaching practical classes (JAVA) of M.Sc. (O.R.)

Department of Operational Research, University of Delhi

July 2014–Dec 2014

- 6 months' experience of teaching practical classes (C++) of M.Sc. (O.R.)
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Research Interests

- ❖ Applications:
 - Intelligent Operations by Robotics & Automation
- ❖ Operations Research Problems:
 - Inventory Control and Management
 - Logistics & Supply Chain Management
 - Production Planning and Control
 - Warehousing and Manufacturing System

Current Projects

- ❖ 02/2017-02/2019: Principal Research Fellow, “Operations Analysis and Modelling of Hospital Logistics in Singapore - Identifying Productivity Improvement Opportunities Through Innovative and Disruptive Technologies”, A*STAR (Singapore).

Panellist/Speaker

- ❖ Dr. Sunil Tiwari, Research Fellow, TLI-AP, was one of the panellist on "Supply chains and the circular economy – ensuring business and environmental viability for the long term" on 15 May 2018, LogiSYM Singapore 2018.
<http://logisym.org/session/supply-chains-and-the-circular-economy-ensuring-business-and-environmental-viability-for-the-long-term/>

Publications

- ❖ Google Scholar Citations = 157, h-index = 7

Published Research Papers in SCI/SCIE Journals

1. S. Tiwari, Y. Daryanto, H.M. Wee, (2018), "Sustainable inventory management with deteriorating and imperfect quality items considering carbon emission", *Journal of Cleaner Production*, (Q1, Impact Factor: 5.715), (SCIE), In press. <https://doi.org/10.1016/j.jclepro.2018.04.261>
2. A.A. Shaikh, A.K. Bhunia, L.E. Cárdenas-Barrón, L. Sahoo, S. Tiwari, (2018), "A fuzzy inventory model for a deteriorating item with variable demand, permissible delay in payments and partial backlogging with shortage follows inventory (SFI) policy", *International Journal of Fuzzy Systems (IJFS)*, (Q2, Impact Factor: 2.918), (SCIE), In press. <https://doi.org/10.1007/s40815-018-0466-7>
3. S. Tiwari, C.K. Jaggi, S.S. Sana, (2018), "Collaborative supply chain of supplier and retailer for stochastic end customers", *Mathematical Modelling and Analysis*, (Q1, Impact Factor: 0.521), (SCIE), In press.
4. A.H. Nobil, A.H.A. Sedigh, S. Tiwari, H.M. Wee, (2018), "An Imperfect Multi-Item Single Machine production system with Shortage, Rework, and Scrapped Considering Inspection, Dissimilar Deficiency Levels, and Non-Zero Setup Times", *Scientia Iranica, Transaction E: Industrial Engineering*, (Q2, Impact Factor: 1.025), (SCIE), In press.
5. S. Tiwari, C.K. Jaggi, M. Gupta, L.E. Cárdenas-Barrón, (2018), "Integrated supply chain inventory model for deteriorating items with price and stock dependent demand in two-warehouse environment", *International Journal of Production Economics*, 200(1), 278-290. (Q1, Impact Factor: 3.493), (SCIE). <https://doi.org/10.1016/j.ijpe.2018.03.019>
6. S. Tiwari, L.E. Cárdenas-Barrón, Mark Goh, A.A. Shaikh, (2018), "Inventory model for deteriorating items with expiration dates under two-level partial trade credits and allowable shortages in the supply chain", *International Journal of Production Economics*, 200(1), 16-36. (Q1, Impact Factor: 3.493), (SCIE). <https://doi.org/10.1016/j.ijpe.2018.03.006>
7. U. Mishra, J.T. Aguilera, S. Tiwari, L.E. Cárdenas-Barrón, (2018), "Optimizing inventory and pricing policy for controllable deterioration under the permissible delay in payments", *Mathematical Problems in Engineering*, 2018. (Q2-Q3, Impact Factor: 0.802), (SCIE).
8. S. Tiwari, H.M. Wee, Y. Daryanto, (2018), "Big Data analytics in Supply Chain Management between 2010 and 2016: insights to industries", *Computers & Industrial Engineering*, 115(1), 319-330. (Q1, Impact Factor: 2.623, Citation: 04), (SCI).
9. A.A. Shaikh, L.E. Cárdenas-Barrón, S. Tiwari, (2017), "A two-warehouse inventory model for non-instantaneous deteriorating items with interval valued inventory costs and stock dependent demand under inflationary conditions", *Neural Computing and Applications*, (Q2, Impact Factor: 2.505, Citation: 04), (SCIE), In press, DOI: [10.1007/s00521-017-3168-4](https://doi.org/10.1007/s00521-017-3168-4).
10. S. Tiwari, S.S. Sana, S. Sarkar, (2017), "Joint Economic Lot Sizing (JELS) Model with Stochastic Demand and Controllable Lead Time by Reducing Ordering Cost and Setup Cost",

Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas, (Q2, Impact Factor: 0.690, Citation: 01), (SCIE), In press, DOI: [10.1007/s13398-017-0410-y](https://doi.org/10.1007/s13398-017-0410-y).

11. S. Jain, S. Tiwari, L.E. Cárdenas-Barrón, A.A. Shaikh, S.R. Singh, (2017), “A fuzzy imperfect production and repair inventory model with time dependent demand and production under inflationary conditions”, *RAIRO-Operations Research*, (Q3, Impact Factor: 0.55), (SCIE), In press, <https://doi.org/10.1051/ro/2017070>.
12. S. Priyan, P. Mala, S. Tiwari, (2017), “An optimal inventory model under interactive with lot size, production rate and lead-time in a fuzzy back-order system”, *RAIRO-Operations Research*, (Q3, Impact Factor: 0.55), (SCIE), In press, <https://doi.org/10.1051/ro/2017062>.
13. A.A. Shaikh, A.K. Bhunia, L.E. Cárdenas-Barrón, S. Tiwari, (2017), “An inventory model with a three parameter Weibull distribution deterioration item whose demand is dependent of price and frequency advertisement under trade credit”, *RAIRO-Operations Research*, (Q3, Impact Factor: 0.55), (SCIE), In press, <https://doi.org/10.1051/ro/2017052>
14. S. Tiwari, H.M. Wee, S. Sarkar, (2017), “Lot-sizing policies for defective and deteriorating items with time-dependent demand and trade credit”, *European Journal of Industrial Engineering*, 11(5), 683-703. (Q1, Impact Factor: 0.718, Citation: 01), (SCIE).
15. C.K. Jaggi, M. Gupta, S. Tiwari, H.M. Wee, (2017), “Two-warehouse inventory model for deteriorating items with ramp-type demand, partial backlogging and trade credit financing under inflationary conditions”, *International Journal of Systems Science: Operations & Logistics*, (Q1, Impact Factor: 1.947), (SCIE).
16. S. Tiwari, C.K. Jaggi, A.K. Bhunia, A.A. Shaikh, Mark Goh (2017), “A two warehouse inventory model for non-instantaneous deteriorating items with stock dependent demand under inflationary conditions using particle swarm optimization”, *Annals of Operations Research*, 254(1), 401–423. (Q2, Impact Factor: 1.709, Citation: 04), (SCI).
17. U. Mishra, L.E. Cárdenas-Barrón, S. Tiwari, A.A. Shaikh, G. Treviño-Garza (2017), “An inventory model under price and stock dependent demand for controllable deterioration rate with shortages and preservation technology investment”, *Annals of Operations Research*, 254(1), 165–190. (Q2, Impact Factor: 1.709, Citation: 10), (SCI).
18. C.K. Jaggi, L.E. Cárdenas-Barrón, S. Tiwari, A.A. Shafi (2017), “Two-warehouse inventory model for deteriorating items with imperfect quality under the conditions of permissible delay in payments”, *Scientia Iranica Transaction E: Industrial Engineering*, 24(1), 390-412. (Q2, Impact Factor: 1.025, Citation: 13), (SCIE).
19. C.K. Jaggi, S. Tiwari, S.K. Goel (2017), “Credit financing in economic ordering policies for non-instantaneous deteriorating items with price dependent demand and two storage facilities”, *Annals of Operations Research*, 248(1), 253-280. (Q2, Impact Factor: 1.709, Citation: 17), (SCI).

20. **S. Tiwari**, L.E. Cárdenas-Barrón, A. Khanna, C.K. Jaggi (2016), “Impact of trade credit and inflation on retailer’s ordering policies for non-instantaneous deteriorating items in a two-warehouse environment”, *International Journal of Production Economics*, 176, 154-169. (Q1, Impact Factor: 3.493, Citation: 33), (SCIE).
21. C.K. Jaggi, V.S.S. Yadavalli, A. Sharma, **S. Tiwari** (2016), “A Fuzzy EOQ Model with Allowable Shortage under different Trade Credit terms”, *Applied Mathematics & Information Sciences*, 10(2), 785-805. (Q4, Impact Factor: 1.232, Citation: 05), (SCIE).
22. C.K. Jaggi, **S. Tiwari**, A.A. Shafi (2015), “Effect of deterioration on two-warehouse inventory model with imperfect quality items”, *Computers & Industrial Engineering*, 88, 378–385. (Q1, Impact Factor: 2.623, Citation: 25), (SCI).

Revision Submitted in Peer Reviewed Journal

23. C.K. Jaggi, M. Gupta, A. Kausar, **S. Tiwari***, “Inventory and credit decisions for deteriorating items with displayed stock dependent demand in two-echelon supply chain using Stackelberg and Nash equilibrium solution”, *Annals of Operations Research*, (Q2, Impact Factor: 1.709), (SCI/SCIE).
24. U. Mishra, J.T. Aguilera, **S. Tiwari**, L.E. Cárdenas-Barrón, “Production inventory model for controllable deterioration rate with shortages”, *RAIRO-Operations Research*, (Q3, Impact Factor: 0.55), (SCIE).
25. **S. Tiwari**, B. Sarkar, W. Ahmed, “Multi-item sustainable green production system under trade credit & partial backordering”, *Journal of Cleaner Production*, (Q1, Impact Factor: 5.715), (SCIE).
26. **S. Tiwari***, “Retailer’s ordering policies for non-instantaneous deteriorating items under various credit policies”, *RAIRO-Operations Research*, (Q3, Impact Factor: 0.55), (SCIE).

Research Paper under Review

27. **S. Tiwari**, L.E. Cárdenas-Barrón, A. Khanna, C.K. Jaggi, “Optimizing the pricing and replenishment policy for non-instantaneous deteriorating items under price adjustment and trade credit in two warehouse environment”, *Annals of Operations Research*, (Q2, Impact Factor: 1.709), (SCI/SCIE).
28. **S. Tiwari**, L.E. Cárdenas-Barrón, C.K. Jaggi, “Inventory and credit decisions for imperfect quality and deteriorating items with up-stream and down-stream trade credit financing under two-warehouse environment”, *European Journal of Industrial Engineering*, (Q1, Impact Factor: 0.718), (SCIE).
29. **S. Tiwari**, L.E. Cárdenas-Barrón, A.A. Shaikh, Mark Goh, “Retailer’s Optimal Ordering Policy for deteriorating items under order-size dependent trade credit and completely backlogging”, *Computers & Industrial Engineering*, (Q1, Impact Factor: 2.623), (SCI).

30. S. Tiwari, L.E. Cárdenas-Barrón, A.A. Shaikh, "An EOQ inventory model with nonlinear stock dependent holding cost, nonlinear stock dependent demand and trade credit", *Computers & Industrial Engineering*, (Q1, Impact Factor: 2.623), (SCI).
31. S. Tiwari, L.E. Cárdenas-Barrón, A.A. Shaikh, "Inventory decision for deteriorating items with expiration dates under down-stream partial credits to credit-risk customers", *Central European Journal of Operations Research*, (Q2, Impact Factor: 0.659), (SCIE).
32. S. Tiwari*, A.H. Nobil, "Note on "Multiproduct single-machine production system with stochastic scrapped production rate, partial backordering and service level constraint"", *Journal of Computational and Applied Mathematics*, (Q1, Impact Factor: 1.357), (SCI).
33. S. Tiwari, L.E. Cárdenas-Barrón, Rini, C.K. Jaggi, "An improved modelling to: Product inspection policy for an imperfect production system with inspection errors and warranty cost", *RAIRO-Operations Research*, (Q3, Impact Factor: 0.55), (SCIE).
34. S. Tiwari, Mark Goh, S.S. Sana, "Two Echelon Supply Chain Inventory Model for Imperfect Production Systems with Maintenance and Warranty", *Journal of Cleaner Production*, (Q1, Impact Factor: 5.715), (SCIE).
35. S. Sarkar, S. Tiwari, H.M. Wee, B.C. Giri, "Coordinating ordering policy in a two echelon SCM model using price discount mechanism with variable backorder and inspection", *International Transactions in Operational Research*, (Q1-Q2, Impact Factor: 1.745), (SCIE/SSCI).
36. J. Singh, S. Tiwari*, C.K. Jaggi, "Joint optimization of inventory policies for deteriorating items with partial backlogging and product returns having multivariate demand", *European Journal of Operational Research (EJOR)*, (Q1, Impact Factor: 3.297), (SCIE).
37. A.H. Nobil, A.H.A. Sedigh, S. Tiwari, L.E. Cárdenas-Barrón, "Reorder point for the EOQ inventory model with imperfect quality items", *Operational Research-An International Journal (ORIJ)*, (Q2, Impact Factor: 1.065), (SCIE).
38. A.H. Nobil, S. Tiwari*, Fatemeh Tajik, "Economic production quantity model considering warm-up period in a cleaner production environment", *International Journal of Production Research*, (Q1, Impact Factor: 2.325), (SCI).
39. C.K. Jaggi, M. Gupta, S. Tiwari*, "Retailer's ordering policies for time-varying deteriorating items with partial backlogging and permissible delay in payments in two-warehouse environment", *Operational Research-An International Journal (ORIJ)*, (Q2, Impact Factor: 1.065), (SCIE).
40. C.K. Jaggi, A. Sharma, S. Tiwari*, V.S.S. Yadavalli, "A Fuzzy EOQ Model for Non-instantaneous deteriorating items with Price Dependent Demand and Allowable Shortages under different Credit Terms – A New Approach", *Iranian Journal of Fuzzy Systems*, (Q2, Impact Factor: 0.56), (SCIE).

41. A. Khanna, A. Kishore, C.K. Jaggi, **S. Tiwari**^{*}, “Dual Customer Bifurcation based Two Stage Permissible Delays in a Three-Echelon Supply Chain with Defectives, Inspection Errors, and Sales Returns”, *Production Planning & Control*, (**Q1, Impact Factor: 2.369**), (**SCI**).
42. A.A. Shaikh, L.E. Cárdenas-Barrón, A.K. Bhunia, **S. Tiwari**, “An inventory model for a deteriorating item with selling price dependent demand under two-level trade credit policy”, *Operational Research-An International Journal*, (**Q2, Impact Factor: 1.065**), (**SCIE**).
43. A. Biswas, A.A. Shaikh, L.E. Cárdenas-Barrón, A.K. Bhunia, **S. Tiwari**, “Genetic algorithm based approach for solving fixed charge transportation problem”, *Applied Soft Computing*, (**Q1, Impact Factor: 3.541**), (**SCIE**).
44. U. Mishra, J.T. Aguilera, **S. Tiwari**, L.E. Cárdenas-Barrón, “Four level production inventory model with defective items for controllable probabilistic deterioration rate under shortages”, *Mathematical Problems in Engineering*, (**Q2-Q3, Impact Factor: 0.802**), (**SCIE**).
45. A.K. Yazdi, M.A. Kaviani, A.H. Sarfaraz, L.E. Cárdenas-Barrón, H.M. Wee, **S. Tiwari**, “A comparative study on economic production quantity model under space constraint with different kinds of data”, *Arabian Journal for Science and Engineering*, (**Q2, Impact Factor: 0.865**), (**SCI**).
46. U. Mishra, **S. Tiwari**, J.T. Aguilera, L.E. Cárdenas-Barrón, “An EPQ inventory model with three rates of production under controllable deterioration rates, trade credit policy, price and advertisement cost dependent demand rate”, *Journal of Industrial and Management Optimization*, (**Q2, Impact Factor: 1.18**), (**SCIE**).
47. U. Mishra, **S. Tiwari**, J.T. Aguilera, L.E. Cárdenas-Barrón, “Economic production quantity model under controllable deterioration rates and carbon emission constraints with credit-linked demand”, *Journal of Cleaner Production*, (**Q1, Impact Factor: 5.715**), (**SCIE**).

Other Research Related Activities

Reviewer

1. Applied Mathematics and Computation, Elsevier
2. Applied Mathematical Modelling, Elsevier
3. Computers & Industrial Engineering, Elsevier
4. Computers and Electronics in Agriculture, Elsevier
5. Omega- The International Journal of Management Science, Elsevier
6. International Journal of Production Economics, Elsevier
7. Knowledge-Based Systems, Elsevier
8. Journal of Energy Storage, Elsevier
9. Computers and Electronics in Agriculture, Elsevier
10. International Journal of Production Research, Taylor & Francis
11. Annals of Operations Research, Springer
12. Flexible Services and Manufacturing Journal, Springer
13. Operational Research-An International Journal (ORIJ), Springer

14. European Journal of Industrial Engineering, Inderscience
15. Scientia Iranica, Transaction E: Industrial Engineering
16. Journal of Industrial and Management Optimization
17. RAIRO - Operations Research
18. Logistics Research, Springer
19. International Journal of Industrial Engineering: Theory, Applications and Practice
20. International Journal of Systems Science: Operations & Logistics, Taylor & Francis
21. International Journal of Management Science and Engineering Management, Taylor & Francis
22. Project Management Journal
23. International Journal of Logistics Systems and Management, Inderscience
24. International Journal of Manufacturing Technology and Management, Inderscience
25. Journal of Industrial Engineering International, Springer
26. International Journal of Applied and Computational Mathematics, Springer

Seminars/Workshops Attended

1. Attended a training course for *Anylogic & Anylogistix Software* from 04-09-2017 to 08-09-2017 conducted by *National University of Singapore*.
2. Attended a training course on *Introduction to MATLAB* from 01-09-2014 to 05-09-2014 conducted by *Delhi University Computer Center*.
3. Attended International Workshop on "*Optimization Techniques & Software (ORSI)*" held at *University of Kashmir, Srinagar, Jammu & Kashmir* during 19-23 Oct 2013.
4. Attended a training course on *SPSS* from 06-09-2010 to 10-09-2010 conducted by *Delhi University Computer Center*.

Conferences Participation

1. Attended and presented a paper at *National Conference on Computational Mathematics & Operations Research* held at *B K Birla Institute of Engineering & Technology, Pilani, Rajasthan, India* during October 15-16, 2016.
2. Attended and presented a paper at *International Conference on Nonlinear Dynamics, Analysis and Optimization (ICNDAO 2015)* held at *Jadavpur University, Kolkata, India* during December 9-11, 2015.
3. Attended and presented a paper at *2nd International Conference on Communication Systems* held at *B K Birla Institute of Engineering & Technology, Pilani, Rajasthan, India* during October 18-20, 2015.
4. Attended and presented a paper at *Vth National Conference on Statistical Inference, Sampling Techniques and Related Areas* held at *Aligarh Muslim University, Aligarh (U.P), India*, during March 24-25, 2015.
5. Attended and presented a paper at *1st International Conference of Indian Society of Information Theory and Applications* on "*Mathematical Modeling, Optimization and Information Technology*" at *Sri Sai College of Engineering and Technology, Pathankot, Badhiani, Punjab, India* during January 16-19, 2015.
6. Attended and presented a paper at *National Conference on Applied Mathematics, (NCAM-2014)* held at *Parul Institute of Engineering and Technology, Limbda, Vadodara, Gujarat* during 27-28 June 2014.
7. Attended and presented a paper at *National Conference on Recent Trends and*

Developments in Operations Research held at *Birla Institute of Technology and Science, Pilani, Rajasthan, India* during 22-23 Feb 2014.

8. Attended and presented a paper at the *International Conference on Operations Research for Data Analytics and Decision Analysis (ORSI)* held at *University of Kashmir, Srinagar, Jammu & Kashmir* during 19-23 Oct 2013.
9. Attended the international conference "*The Legacy of Srinivasa Ramanujan*" held at *Conference Center, University of Delhi* during 17-22 Dec 2012.

Projects Completed

Project Title: To Study the Consumer Buying Behavior towards Escorts Tractors

Institute and Year: Department of Operational Research, University of Delhi; 2011

Organization: Escorts Agri Machinery

Project Duration: January 2011 - April 2011

Computer and Technical Skills

- Office Works: Microsoft Office (Access, Excel, Power Point, Word)
- Programming Languages: LATEX, Java, C++
- Optimization Tools: LINGO, MATLAB, MAPLE, Mathematica, CPLEX
- Statistical Analysis: SPSS, MS Excel

Awards & Certificates

- 09/2017: Certificate of AnyLogic Simulation Software.
- Selected for Dr. D. S. Kothari Postdoctoral Fellowship by University Grants Commission (UGC)-India in 2017. (Not Availed)
- Selected for Postdoctoral Fellowship by Pusan National University, South Korea in January 2017. (Not Availed)
- Fellowship awarded to pursue Ph. D. (OR) by University Grants Commission (UGC) during Dec. 2013-Dec. 2015.
- Fellowship awarded to pursue M. Phil. (OR) by University Grants Commission (UGC) during Sept. 2011-March. 2013.

Declaration: I hereby declare that all the information given above is true to the best of my knowledge.

Date: 03-05-2018

Place: Singapore



(Dr. Sunil Tiwari)