

## **ARNAB BISI**

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### **PROFESSIONAL EXPERIENCE**

- August 2019 – Present Associate Professor of Operations Management & Business Analytics
- August 2014 – July 2019 Assistant Professor of Operations Management & Business Analytics  
The Johns Hopkins Carey Business School  
Baltimore, Maryland
- July 2012 – July 2014 Associate Professor of Operations Management  
Indian Institute of Management Calcutta  
Kolkata, India
- Aug 2002 – May 2012 Assistant Professor of Management  
Krannert School of Management  
Purdue University, West Lafayette, Indiana
- July 2001 – July 2002 Assistant Professor of Management Science (Visiting)  
The A. Gary Anderson Graduate School of Management  
University of California, Riverside, California

### **EDUCATION**

- Aug 1999 – Jun 2001 Postdoctoral Fellow and Lecturer, Operations and Logistics Division,  
Sauder School of Business, University of British Columbia, Canada
- Jan 1998 – July 1999 Postdoctoral Fellow and Lecturer, Operations Management Area,  
School of Management, University of Texas at Dallas, Texas
- 1998 PhD, Hong Kong University of Science & Technology, Hong Kong
- 1992 MStat, Indian Statistical Institute, India
- 1990 BSc (Hons.), Statistics, University of Calcutta, India

### **TEACHING INTERESTS**

Supply Chain Management, Operations Management, Data Analytics, Continuous Time Finance, Business Analytics, Business Statistics, Optimization Models, Six Sigma Quality Management, Management Science, Applied Stochastic Processes.

### **RESEARCH INTERESTS**

Supply Chain Management, Inventory Management, Dynamic Pricing, Contracts and Incentives, Stochastic Modeling and Optimization, Jump Diffusion Processes.

## JOURNAL PUBLICATIONS

1. Integrated Inventory Replenishment and Online Demand Allocation Decisions for an Omnichannel Retailer with Ship-from-store Strategy, accepted for publication in *European Journal of Operational Research*, (2024), online first version published at <https://doi.org/10.1016/j.ejor.2024.02.027> (with Vishal Bansal, Debjit Roy, and Prahalad Venkateshan).
2. Setting Fulfillment-time Guarantees for Accepting Customer Orders in a Periodic-review Base-stock Inventory System, accepted for publication in *IIE Transactions*, (2023), online first version published at <https://doi.org/10.1080/24725854.2023.2245005> (with Yanyi Xu, Dogan Serel, and Maqbool Dada).
3. Coping with Demand Uncertainty: The Interplay between Dual Sourcing and Endogenous Partial Backordering, *Production and Operations Management*, **31**(4) (2022), 1560-1575 (with Yanyi Xu, Dogan Serel and Maqbool Dada).
4. Does Service Quality Influence Operational and Financial Performance of Third Party Logistics Service Providers? A Mixed Multi Criteria Decision Making-Text Mining-based Investigation, *Transportation Research Part E: Logistics and Transportation Review*, **157**(102558) (2022) (with Satender Pal Singh, Arnab Adhikari, and Adrija Majumdar).
5. Do Cap-and-Trade Policies Drive Environmental and Social Goals in Supply Chains: Strategic Decisions, Collaboration, and Contract Choices, *International Journal of Production Economics*, **223**(107537) (2020), (with Mithu Kuity, Debabrata Ghosh, and Preetam Basu).
6. Collaboration, Bargaining, and Fairness Concern for a Green Apparel Supply Chain: An Emerging Economy Perspective, *Transportation Research Part E: Logistics and Transportation Review*, **135**(101863) (2020) (with Arnab Adhikari).
7. An Innovative Super-efficiency Data Envelopment Analysis, Semi-Variance, and Shannon-entropy-based Methodology for Player Selection: Evidence from Cricket, *Annals of Operations Research*, **284** (2020), 1-32 (with Arnab Adhikari, Adrija Majumdar and Gaurav Gupta).
8. Coordination Mechanism, Risk Sharing, and Risk Aversion in a Five-level Textile Supply Chain under Demand and Supply Uncertainty, *European Journal of Operational Research*, **282**(1) (2019), 93-107 (with Arnab Adhikari and Balram Avittathur).
9. Structural Properties of the Lost Sales Problem with Fractional Lead Times, *Operations Research Letters*, **47**(5) (2019), 410-416 (with Yanyi Xu, Sang Phil Kim, Suresh Chand, and Maqbool Dada).
10. A Finite-Horizon Inventory System with Partial Backorders and Inventory Holdback, *Operations Research Letters*, **45**(4) (2017), 315-322 (with Yanyi Xu and Maqbool Dada).
11. New Structural Properties of Inventory Models with Polya Frequency Distributed Demand and Fixed Setup Cost, *Journal of Industrial and Management Optimization*, **13**(2) (2017), 931-945 (with Yanyi Xu and Maqbool Dada).

12. Integrated Contract and Spot Market Procurement by a Risk-Averse Buying Firm, *IEEE Transactions on Engineering Management*, **63** (2016), 151-164 (with Santosh Mahapatra, Narasimhan Ram and Shlomo Levental).
13. Case Article - ABCtronics: Manufacturing, Quality Control and Client Interfaces, *INFORMS Transactions on Education*, **17** (2016), 20-25 (with Arnab Adhikari and Indranil Biswas).
14. Case - ABCtronics: Manufacturing, Quality Control and Client Interfaces, *INFORMS Transactions on Education*, **17** (2016), 26-33 (with Arnab Adhikari and Indranil Biswas).
15. A Non-Parametric Adaptive Algorithm for the Censored Newsvendor Problem, *IIE Transactions*, **47** (2015), 15-34 (with Karanjit Kalsi and Golnaz Abdollahian). **This paper received the 2016 IIE Transactions Best Paper Award in Operations Engineering and Analytics.**
16. Design of Efficient Textile Supply Chain in Emerging Economies, *Udyog Pragati: The Journal for Practising Managers*, **39** (2015), 26-35 (with Arnab Adhikari).
17. Wholesale-Price Contracts with Postponed and Fixed Retail Prices, *Operations Research Letters*, **40** (2012), 250-257 (with Yanyi Xu).
18. Yield Management of Workforce for IT Service Providers, *Decision Support Systems*, **53** (2012), 23-33 (with Joung Yeon Kim and Kemal Altinkemer).
19. A Periodic Review Base Stock Inventory System with Sales Rejection, *Operations Research*, **59** (2011), 742-753 (with Yanyi Xu and Maqbool Dada).
20. A Censored-Data Multiperiod Inventory Problem with Newsvendor Demand Distributions, *Manufacturing & Service Operations Management*, **13** (2011), 525-533 (with Maqbool Dada and Surya Tokdar).
21. Optimal Operating Policies in a Commodity Trading Market with the Manufacturer's Presence, *Naval Research Logistics*, **57** (2010), 127-148 (with Hui Zhao).
22. A Centralized Ordering and Allocation System with Backorders and Strategic Lost Sales, *IIE Transactions*, **42** (2010), 812-824 (with Yanyi Xu and Maqbool Dada).
23. New Structural Properties of  $(s, S)$  Policies for Inventory Models with Lost Sales, *Operations Research Letters*, **38** (2010), 441-449 (with Yanyi Xu and Maqbool Dada).
24. Dynamic Learning, Pricing, and Ordering by a Censored Newsvendor, *Naval Research Logistics*, **54** (2007), 448-461 (with Maqbool Dada).
25. The Censored Newsvendor and the Optimal Acquisition of Information, *Operations Research*, **50** (2002), 517-527 (a response on this paper appears in *Operations Research*, **53** (2005), p.1027) (with Martin L. Puterman and Xiaomei Ding).
26. Average Cost Optimal Policy for a Stochastic Two-Machine Flowshop with Limited Work-In-Process, *Nonlinear Analysis: Theory, Methods and Applications*, **47** (2001), 5671-5678 (with Ernst Presman, Suresh P. Sethi and Hanqin Zhang).

27. Average Cost Optimality for an Unreliable Two-Machine Flowshop with Limited Internal Buffer, *Annals of Operations Research*, **98** (2000), 333-351 (with Ernst Presman, Suresh P. Sethi and Hanqin Zhang).
28. Stability and Functional Limit Theorems for Random Degenerate Diffusions, *Sankhya*, **61**, Series A, Pt. 1 (1999), 12-35 (with Gopal K. Basak and Mrinal K. Ghosh).
29. Stability of Degenerate Diffusions with State-Dependent Switching, *Journal of Mathematical Analysis and Applications*, **240** (1999), 219-248 (with Gopal K. Basak and Mrinal K. Ghosh).
30. Controlled Random Degenerate Diffusions under Long-Run Average Cost, *Stochastics and Stochastics Reports*, **61** (1997), 121-140 (with Gopal K. Basak and Mrinal K. Ghosh).
31. Limit Theorems for Random Degenerate Diffusions, *Nonlinear Analysis: Theory, Methods and Applications*, **30**, No. 1 (1997), 211-222 (with Gopal K. Basak and Mrinal K. Ghosh).
32. Stability of a Random Diffusion with Linear Drift, *Journal of Mathematical Analysis and Applications*, **202** (1996), 604-622 (with Gopal K. Basak and Mrinal K. Ghosh).

## CONFERENCE PROCEEDINGS

1. Developing Coordination Mechanism for the Indian Textile Supply Chain, *Proceedings of the Fourth Biennial Supply Chain Management Conference, Indian Institute of Management Bangalore* (Dec. 2014) (with Arnab Adhikari and Badri Narayanan).
2. A Distribution System with Strategic Backorders and Lost Sales, *Proceedings of the 16<sup>th</sup> MSOM Conference* (2011) (with Yanyi Xu and Maqbool Dada).
3. Optimal Policy in an Inventory Model with Partial Backorders and Lost Sales, *Proceedings of the 11<sup>th</sup> MSOM Conference* (2006) (with Yanyi Xu and Maqbool Dada).
4. Optimal Ordering and Pricing by a Newsvendor with Unobservable Lost Sales, *Proceedings of the 10<sup>th</sup> MSOM Conference* (2005) (with Maqbool Dada).
5. Simultaneous Inventory and Pricing Decisions with Demand Learning, *Proceedings of the International Conference on Operations Research Applications in Infrastructure Development in Conjunction with the 38<sup>th</sup> Annual Convention of the Operational Research Society of India (ICORAID-2005-ORSI)* (2005) (with Maqbool Dada).
6. Ergodic Control of Random Singular Diffusions, *Proceedings of the 35<sup>th</sup> IEEE Conference on Decision and Control* (1996), 2545-2550 (with Gopal K Basak and Mrinal K. Ghosh).

## MANUSCRIPTS UNDER REVISION/REVIEW

1. Inhibitors in Ridesharing Firms from Developing Nations: A Novel Integrated MCDM – Text Mining Approach Using Large-Scale Data, under review in *Transportation Research Part E: Logistics and Transportation Review* (with Souradeep Koley and Mukesh Kumar Barua).

2. Collaboration and Coordination Mechanisms for a Fairness Concerned Green Supply Chain under Negotiation: A Stackelberg and Nash-Bargaining-based Analysis, under review in *Group Decision and Negotiation* (with Satender Pal Singh and Arnab Adhikari).

## **WORKING PAPERS AND CASES**

1. Competing Omnichannel Newsvendors: A Strategic Framework, under preparation (with Gyanesh Raj, Debjit Roy and Maqbool Dada).
2. Leveraging Text Mining and Decision-Making in a Transportation Network Company: A Case Study of RideX, under preparation (with Souradeep Koley and Mukesh Kumar Barua).
3. Designing a Sustainable and Coordinated Three-level Textile Supply Chain: A Mixed-Contract-based Approach, under preparation (with Arnab Adhikari).
4. Computing the Stocking Quantities for a Dynamic Inventory Problem with Censored Demand: A Semi-parametric Approach, under preparation (with Surya Tokdar and Maqbool Dada).
5. Product Portfolio Management under Cap-and-Trade with Stochastic Demand: A Game Theoretic Analysis, under preparation (with Mithu Kuity and Preetam Basu).

## **TEACHING EXPERIENCE**

### **Johns Hopkins Carey Business School (2014 – Present)**

BU.232.650 Continuous Time Finance (STEM-MSF core & MSF, MBA elective): Spring 2023, Spring 2022, Fall 2021, Spring 2020, Spring 2019, 2018, 2017  
 BU.680.620 Operations Management Online (Flex-MBA & MS core): Fall 2023, Fall 2022  
 BU.520.601 Business Analytics (MS core): Fall 2021, Summer 2021  
 BU.610.750 Global Supply Chain Management (MBA, GMBA & MS elective): Spring 2019, 2018, Spring 2017, 2016, 2015  
 BU.680.620 Operations Management (MBA & MS core): Spring 2024, Fall 2021, Summer 2021, Fall 2020, Fall 2019, 2018, 2017, 2016, Spring 2021, 2016, 2015, Fall 2015, 2014  
 BU.520.620 Optimization Models (MBA, GMBA & MS core & elective): Spring 2016  
 BU.510.650 Data Analytics (MBA, GMBA & MS elective): Spring 2021, 2017, 2016  
 BU.510.650 Data Analytics Online (MBA & MS elective): Spring 2024, Fall 2023, Fall 2022, Fall 2021, 2020, 2019, 2018, Fall 2017, Spring 2022, 2021, 2020, 2019, 2018, 2017

### **Indian Institute of Management Calcutta (2012 – 2014)**

OM 238 Logistics & Supply Chain Management (MBA elective): Fall 2013, Fall 2012  
 OM 301 Risk Management (MBA core): Fall 2013, Fall 2012  
 OM 101 Statistics for Management (MBA core): Fall 2013  
 F-OM 554 Stochastic Processes (PhD course): Spring 2013

### **Krannert School of Management, Purdue University (2002 – 2012)**

MGMT 670 Business Analytics (MBA core): Fall 2011, Fall 2010, Fall 2009  
 MGMT 405 Six Sigma Quality/Total Quality Management (undergraduate elective): Spring 2011, 2010, Spring 2009, 2008, 2005, 2004  
 MGMT 305 Business Statistics (undergraduate core): Fall 2011, 2010, Spring & Fall 2009, Fall 2008, Spring & Fall 2007, Spring & Fall 2006, Fall 2005, Fall 2004, Spring & Fall 2003, Fall 2002

MGMT 690S Stochastic Optimization (PhD course): Spring 2008

**Gary Anderson Graduate School of Management, University of California, Riverside (2001-2002)**

BSAD 126 Production and Operations Management (undergraduate core): Winter 2002, Fall 2001

BSAD 128 Project Planning and Control (undergraduate elective): Summer 2002, Fall 2001

BSAD 121 Introduction to Management Science (undergraduate core): Spring 2002, Winter 2002

**Faculty of Commerce and Business Administration, University of British Columbia (1999 – 2001)**

COMM 682 Topics in Production and Operations Management (PhD course): Spring 2000

COMM 583 Forecasting and Time Series Analysis in Business (MS & PhD course): Spring 2001

COMM 585 Applied Stochastic Processes (MS & PhD course): Fall 1999

COMM 291 Applications of Statistics in Business (undergraduate core): Spring 2001

**School of Management, University of Texas at Dallas (1998 – 1999)**

BA 3352 Production Management (undergraduate core): Fall 1998, Summer 1999

## PROFESSIONAL ACTIVITIES

- Ad-hoc Referee
  - *Operations Research, Management Science, Mathematics of Operations Research, Manufacturing and Service Operations Management, IISE Transactions, Production and Operations Management, Transportation Research Part E: Logistics and Transportation Review, IEEE Transactions on Automation Science and Engineering, IEEE Transactions on Automatic Control, European Journal of Operational Research, Automatica, Journal of Mathematical Analysis and Applications, Interfaces, Electronic Commerce Research and Applications, International Journal on Production Economics, Decision Sciences*
- Member of INFORMS, MSOM, POMS

## HONORS AND AWARDS

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| 2016 | IISE Transactions Best Paper Award in Operations Engineering and Analytics                                   |
| 2012 | Ten Year Service Completion Award, Purdue University   |
| 2011 | CIBER Summer Faculty Research Award  |
| 2010 | CIBER Summer Faculty Research Award  |
| 2008 | Global Supply Chain Management Initiative (GSCMI) Award  |
| 2005 | CIBER Faculty International Travel Award   |
| 1999 | COE-MITACS Postdoctoral Fellowship, University of British Columbia   |
| 1998 | Postdoctoral Fellowship, University of Texas at Dallas   |
| 1994 | Postgraduate Teaching Assistantship, Hong Kong U. of Science & Technology                                    |
| 1993 | NBHM Research Fellowship, India  |
| 1992 | Indian Institute of Science and CSIR-UGC Research Fellowships, India   |
| 1990 | Certificate for academic excellence (2nd place),<br>BSc (Hons.) in Statistics, University of Calcutta, India |

## CONFERENCE PRESENTATIONS

- POMS Annual Meeting, Minneapolis, April 2024: *Integrated Inventory Replenishment and Online Demand Allocation Decisions for an Omni-channel Retailer.*
- POMS Annual Meeting, Orlando, May 2023: *Fairness-concerned Supply Chain Design under Random Demand and Yield.*
- POMS Annual Meeting, April 2022 (Invited talk): *How to design a Multi-level Sustainable Textile Supply Chain? A Game-Theoretic Analysis.* (presented virtually)
- INFORMS Annual Meeting, October 2021: *Coordination Strategy for an Eco-friendly Three-level Textile Supply Chain.* (presented virtually)
- Invited Plenary Speaker in the Doctoral Colloquium of the Society of Operations Management, India, December 2020: *Analysis of Two Operations Problem - The Cases of the Censored Newsvendor and the Dual Sourcing.* (presented virtually)
- INFORMS Annual Meeting, November 2020: *Contract Analysis for a Green Supply Chain Under Fairness Concern.* (presented virtually)
- INFORMS, Phoenix, Nov. 2018: *An Inventory System with Reserved Stock.*
- XXII Annual International Conference of the Society of Operations Management (SOM), December 2018, Kozhikode, India: *A Partial Backorder Inventory Policy with Reservation for Future Demand.*
- INFORMS, Houston, Oct. 2017 (invited, session chair): *An Inventory System with Partial Backorders and Inventory Holdback.*
- INFORMS, Nashville, Nov. 2016: *Coordinating A Textile Supply Chain In Post Multi Fibre Agreement Era: A Developing Economy Perspective.*
- DSI, Austin, Nov. 2016: *Designing a Four-Level Coordinated Textile Supply Chain under Demand Uncertainty and Random Yield.*
- International Conference of Society of Operations Management, Kolkata, Dec. 2015 (invited, session chair): *Coordination Mechanism for a Four Level Textile Supply Chain under Demand and Supply Uncertainty.*
- NITIE-POMS International Conference, Mumbai, Dec. 2014 (session chair): *Design of Efficient Textile Supply Chain in Emerging Economies.*
- POMS, Denver, May 2013 (invited, session chair): *Concurrent Dual Sourcing Procurement by a Risk Sensitive Firm.*
- POMS, Denver, May 2013 (invited, session chair): *An Adaptive Method for a Storable Inventory Problem.*
- INFORMS, Phoenix, Oct. 2012 (session chair): *Wholesale-price Contracts with Postponed and Fixed Retail Prices.*
- POMS, Chicago, April 2012 (invited): *Wholesale Price-Only Contracts with Responsive Retail Pricing.*
- INFORMS, Charlotte, Nov. 2011 (session chair): *A Non-parametric Adaptive Algorithm for the Censored-Data Inventory Problem.*
- MSOM, Ann Arbor, June 2011: *A Distribution System with Strategic Backorders and Lost Sales.*
- INFORMS, San Diego, Oct. 2009 (invited): *The Censored Newsvendor Problem: Scalability, its Implications and Limitations.*
- INFORMS, Washington DC, Oct. 2008 (invited): *Operational Decisions in Inventory Models with Unknown Demand and Unobserved Lost Sales.*
- INFORMS, Washington DC, Oct. 2008 (invited): *Global Supply Chain Management with Unknown Demand Distribution.*

- DCMME/GSCMI Fall Operations Conference, Krannert School of Management, Oct. 2008: *Global Supply Chain Management with Unknown Demand Distribution*.
- INFORMS, Seattle, Nov. 2007 (invited): *Computation of Optimal Order Quantities in an Inventory System with Censored Demand Data*.
- POMS, Dallas, May 2007: *Average Cost Inventory Problems with Backorders and Lost Sales*.
- INFORMS, Pittsburgh, Nov. 2006: *Optimal Inventory Policies of a Censored Newsvendor*.
- MSOM, Atlanta, June 2006: *Optimal Policy in an Inventory Model with Partial Backorders and Lost Sales*.
- POMS, Boston, April-May 2006: *Computing the Optimal Policies for the Censored Newsvendor Problem*.
- ICORAID-2005-ORSI, Bangalore, December 2005: *Simultaneous Inventory and Pricing Decisions with Demand Learning*.
- MSOM, Chicago, June 2005: *Optimal Ordering and Pricing by a Newsvendor with Unobservable Lost Sales*.
- POMS, Chicago, April-May 2005: *Pooling Demand Information in a Supply Chain with Unobservable Lost Sales*.
- INFORMS, Denver, Oct. 2004: *Ordering and Pricing with Demand Learning*.
- INFORMS, San Jose, Nov. 2002: *Optimal Pricing and Inventory Control by a Censored Newsvendor*.
- INFORMS, Miami, Nov. 2001: *Information Acquisition in Supply Chains with Uncertain and Censored Demand*.
- INFORMS, San Antonio, Nov. 2000: *Role of Information in Inventory and Supply Chain Models*.
- INFORMS, Philadelphia, Nov. 1999: *Average Cost Optimality for a Stochastic Two-Machine Flowshop with Limited Internal Buffer*.
- Joint Statistical Meetings, Dallas, Aug. 1998: *Stability of Degenerate Diffusions with State-Dependent Switching*.
- 35th IEEE Conference on Decision and Control, Kobe, Japan, Dec. 1996: *Ergodic Control of Random Singular Diffusions*.

## INVITED PRESENTATIONS

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| 2018 | IIM Ahmedabad  |
| 2014 | Johns Hopkins Carey Business School  |
| 2011 | IIM Calcutta, IIM Ahmedabad  |
| 2003 | Purdue University  |
| 2002 | Naval Postgraduate School, University of California at Irvine  |
| 2001 | Ohio State University, McGill University, Southern Methodist University<br>University of California at Riverside |
| 1999 | University of British Columbia   |

## INVOLVEMENT IN THE GRADUATE RESEARCH PROGRAM

Serving/Served as a co-advisor or committee member for the following doctoral dissertations:

1. Vishal Bansal (in Production and Quantitative Methods area): *Stochastic Models for Retail Order Fulfillment*. Served as a committee member. (completed, at the Indian Institute of Management Ahmedabad)



2. Mithu Rani Kuity (in Operations Management area): Essays on the Impact of Different Types of Carbon Emission Policies on Supply Chain Strategies. Served as a committee member. (completed, at the Indian Institute of Management Calcutta)
3. Arnab Adhikari (in Operations Management area): Essays on Textile Supply Chain. **Served as a co-advisor.** (completed, at the Indian Institute of Management Calcutta)
4. Jen-Yi Chen (in Operations Management area): Procurement Contract Design. Served as a committee member. (completed, at Purdue University)
5. Sang-Phil Kim (in Industrial Engineering): Stochastic Inventory Control in Hybrid System with Remanufacturing. Served as a committee member. (completed, at Purdue University)
6. Karanjit Kalsi (in Electrical and Computer Engineering department): Decentralized Observer-Based Control of Uncertain Dynamic Systems. Served as a committee member. (completed, at Purdue University)
7. Joung Yeon (JY) Kim (in Management Information Systems area): Essays on the Effects of IT on Economic Activity and Business Process Coordination. Served as a committee member. (completed, at Purdue University)
8. Binling Lu (in Quantitative Methods area): Coordination Strategies for Products with a Short Life Cycle in a Capacitated Channel. Served as a committee member. (completed, at Purdue University)
9. Yanyi Xu (in Operations Management area): Base Stock Policies for Periodic Review Inventory Systems. **Served as a co-advisor.** (completed, at Purdue University)