

References

- D. Acemoglu, M. Dahleh, I. Lobel, A. Ozdaglar, Bayesian learning in social networks. *Econ. Stud.* **78**(4), 1201–1236 (2011)
- D. Adelman, Dynamic bid-prices in revenue management. *Oper. Res.* **55**(4), 647–661 (2007)
- E. Adida, O. Ozer, Why markdown as a pricing modality? *Manag. Sci.* **65**(5), 2161–2178 (2019)
- E. Adida, G. Perakis, A robust optimization approach to dynamic pricing and inventory control with no backorders. *Math. Program.* **107**(1–2), 97–129 (2006)
- E. Adida, G. Perakis, A nonlinear continuous time optimal control model of dynamic pricing and inventory control with no backorders. *Nav. Res. Logist.* **54**(7), 767–795 (2007)
- E. Adida, G. Perakis, Dynamic pricing and inventory control with no backorders: uncertainty and competition. *Oper. Res.* **58**(2), 289–302 (2010a)
- E. Adida, G. Perakis, Dynamic pricing and inventory control: robust vs. stochastic uncertainty models – a computational study. *Ann. Oper. Res.* **181**(1), 125–157 (2010b)
- P. Afeche, B. Ata, Bayesian dynamic pricing in queueing systems with unknown delay cost characteristics. *Manuf. Serv. Oper. Manag.* **15**(2), 292–304 (2013)
- P. Afeche, M. Hu, Y. Li, The downside of reorder flexibility under price competition. Technical report, University of Toronto, Toronto, ON (2014)
- S. Agrawal, Z. Wang, Y. Ye, A dynamic near-optimal algorithm for online linear programming. *Oper. Res.* **62**(4), 876–890 (2014)
- S. Agrawal, V. Avadhanula, V. Goyal, A. Zeevi, MNL-Bandit: a dynamic learning approach to assortment selection. Technical report, Columbia University, New York, NY (2018)
- S.D. Ahipasaoglu, X. Li, K. Natarajan, A convex optimization approach for computing correlated choice probabilities with many alternatives. *IEEE Trans. Autom. Control* **64**(1), 190–205 (2019)
- M. Akan, B. Ata, Bid-price controls for network revenue management: martingale characterization of optimal bid prices. *Math. Oper. Res.* **64**(4), 912–936 (2009)
- M. Akan, B. Ata, R.C. Savaskan-Ebert, Dynamic pricing of remanufacturable products under demand substitution: a product life cycle model. *Ann. Oper. Res.* **211**(1), 1–25 (2013)
- M. Akan, B. Ata, J.D. Dana, Revenue management by sequential screening. *J. Econ. Theory* **159**(B), 728–774 (2015)
- A. Alptekinoglu, A. Grasas, When to carry eccentric products? Optimal retail assortment under consumer returns. *Prod. Oper. Manag.* **23**(5), 877–892 (2014)
- A. Alptekinoglu, J.H. Semple, The exponential choice model: a new alternative for assortment and price optimization. *Oper. Res.* **64**(1), 79–93 (2016)

- K. Amaruchkul, W.L. Cooper, D. Gupta, Single-leg air-cargo revenue management. *Transp. Sci.* **41**(4), 457–469 (2007)
- K. Amaruchkul, W.L. Cooper, D. Gupta, A note on air-cargo capacity contracts. *Prod. Oper. Manag.* **20**(1), 152–162 (2011)
- T. Amornpetchkul, H.-S. Ahn, O. Sahin, Conditional promotions and consumer overspending. *Prod. Oper. Manag.* **27**(8), 1455–1475 (2018)
- S.P. Anderson, A. de Palma, Multiproduct firms: a nested logit approach. *J. Ind. Econ.* **40**(3), 261–276 (1992)
- S.P. Anderson, A. de Palma, J.G. Thisse, *Discrete Choice Theory of Product Differentiation* (MIT Press, Cambridge, 1992)
- A. Aouad, D. Segev, Display optimization for vertically differentiated locations under multinomial logit preferences. Technical report, London School of Business, London, UK (2018)
- A. Aouad, V.F. Farias, R. Levi, Assortment optimization under consider-then-choose choice models. Technical report, MIT, Cambridge, MA (2016)
- A. Aouad, V.F. Farias, R. Levi, D. Segev, The approximability of assortment planning under ranking preferences. *Oper. Res.* **66**(6), 1661–1669 (2018a)
- A. Aouad, J.B. Feldman, D. Segev, The exponential choice model: assortment optimization and application to public transit choice prediction in San Francisco. Technical report, Washington University, St. Louis, MO (2018b)
- A. Aouad, R. Levi, D. Segev, Greedy-like algorithms for dynamic assortment planning under multinomial logit preferences. *Oper. Res.* **66**(5), 1321–1345 (2018c)
- A. Aouad, R. Levi, D. Segev, Approximation algorithms for dynamic assortment optimization models. *Math. Oper. Res.* **44**(2), 487–511 (2019)
- V.F. Araman, R. Caldentey, Dynamic pricing for nonperishable products with demand learning. *Oper. Res.* **57**(5), 1169–1188 (2009)
- V.F. Araman, R. Caldentey, Revenue management with incomplete demand information, in *Wiley Encyclopedia of Operations Research and Management Science*, ed. by J.J. Cochran, L.A. Cox Jr., P. Keskinocak, J.P. Kharoufeh, J.C. Smith (Wiley, New York, 2011)
- B. Ata, M. Akan, On bid-price controls for network revenue management. *Stoch. Syst.* **5**(2), 268–323 (2015)
- B. Ata, J.D. Dana, Price discrimination on booking time. *Int. J. Ind. Organ.* **43**(November), 175–181 (2015)
- Y. Aviv, A. Pazgal, A partially observed Markov decision process for dynamic pricing. *Manag. Sci.* **51**(9), 1400–1416 (2005)
- Y. Aviv, Y. Levin, M. Nediak, Counteracting strategic consumer behavior in dynamic pricing systems, in *Consumer-Driven Demand and Operations Management Models*, ed. by S. Netessine, C.S. Tang (Springer, New York, 2009)
- Y. Aviv, A. Bazhanov, Y. Levin, M. Nediak, Quantity competition when most-favored customers are strategic. *Prod. Oper. Manag.* **26**(11), 2107–2121 (2017)
- Y. Aviv, A. Bazhanov, Y. Levin, M. Nediak, Price-matching competition in the presence of strategic consumers and retail price maintenance. Technical report, Queen's University, Kingston, Canada (2018)
- G. Aydin, S. Ziya, Pricing promotional products under upselling. *Manuf. Serv. Oper. Manag.* **10**(3), 360–376 (2008)
- G. Aydin, S. Ziya, Technical note – personalized dynamic pricing of limited inventories. *Oper. Res.* **57**(6), 1523–1531 (2009)
- N. Aydin, S.I. Birbil, J.B.G. Frenk, N. Noyan, Single-leg airline revenue management with overbooking. *Transp. Sci.* **47**(4), 560–583 (2013)
- L. Baardman, M.C. Cohen, K. Panchangam, G. Perakis, D. Segev, Scheduling promotion vehicles to boost profits. *Manag. Sci.* **65**(1), 55–70 (2019)
- M.O. Ball, M. Queyranne, Toward robust revenue management: competitive analysis of online booking. *Oper. Res.* **57**(4), 950–963 (2009)

- S. Balseiro, C. Gocmen, R. Phillips, G. Gallego, Revenue management of consumer options for tournaments. Technical report, Columbia University, New York, NY (2010)
- G.-Y. Ban, N.B. Keskin, Personalized dynamic pricing with machine learning. Technical report, Duke University, Durham, NC (2017)
- M. Bansal, C. Maglaras, Dynamic pricing when customers strategically time their purchase: asymptotic optimality of a two-price policy. *J. Revenue Pricing Manag.* **8**(1), 42–66 (2009)
- C. Barz, D. Adelman, C. Uckun, Power approximations for network revenue management, in *26th European Conference on Operational Research* (2013)
- A. Bassamboo, S. Kumar, R.S. Randhawa, Dynamics of new product introduction in closed rental systems. *Oper. Res.* **57**(6), 1347–1359 (2009)
- A.V. Bathia, S.C. Prakesh, Optimal allocation of seats by fare, in *AGIFORS Reservations and Yield Management Study Group Annual Meeting Proceedings* (1973)
- A. Bazhanov, Y. Levin, M. Nediak, Quantity competition in the presence of strategic consumers and retail price maintenance. Technical report, Queen's University, Kingston, Canada (2015)
- A. Belkaid, V. Martinez-de-Albeniz, Here comes the sun: fashion goods retailing under weather shocks. Technical report, University of Navarra, Barcelona, Spain (2017)
- P.P. Belobaba, Airline yield management: an overview of seat inventory control. *Transp. Sci.* **21**(2), 63–73 (1987)
- P.P. Belobaba, Application of a probabilistic decision model to airline seat inventory control. *Oper. Res.* **37**(2), 183–197 (1989)
- P.P. Belobaba, A. Farkas, Yield management impacts on airline spill estimation. *Transp. Sci.* **33**(2), 217–232 (1999)
- P.P. Belobaba, L.R. Weatherford, Comparing decision rules that incorporate customer diversion in perishable asset revenue management situations. *Decis. Sci.* **27**(2), 343–363 (1996)
- M. Ben-Akiva, S.R. Lerman, *Discrete Choice Analysis Theory and Application to Travel Demand: Theory and Application to Travel Demand* (MIT Press, Cambridge, 1985)
- G. Berbeglia, Discrete choice models based on random walks. *Oper. Res. Lett.* **44**(2), 234–237 (2016)
- G. Berbeglia, The generalized stochastic preference choice model. Technical report, Melbourne Business School, Melbourne, Australia (2018)
- G. Berbeglia, G. Joret, Assortment optimisation under a general discrete choice model: a tight analysis of revenue-ordered assortments, in *Proceedings of the 2017 ACM Conference on Economics and Computation*, Cambridge, MA (2017), pp. 345–346
- G. Berbeglia, A. Garrassino, G. Vulcano, A comparative empirical study of discrete choice models in retail operations. Technical report, Universidad Torcuato di Tella, Buenos Aires, Argentina (2018)
- F. Bernstein, V. Martinez-de-Albeniz, Dynamic product rotation in the presence of strategic customers. *Manag. Sci.* **63**(7), 2092–2107 (2017)
- F. Bernstein, A.G. Kok, L. Xie, Dynamic assortment customization with limited inventories. *Manuf. Serv. Oper. Manag.* **17**(4), 538–553 (2015)
- D. Bertsimas, S. de Boer, Dynamic pricing and inventory control for multiple products. *J. Revenue Pricing Manag.* **3**(4), 303–319 (2004)
- D. Bertsimas, S. de Boer, Simulation-based booking limits for airline revenue management. *Oper. Res.* **53**(1), 90–106 (2005)
- D. Bertsimas, A. Mersereau, A learning approach for interactive marketing to a customer segment. *Oper. Res.* **55**(6), 1120–1135 (2007)
- D. Bertsimas, V. Misis, Robust product line design. *Oper. Res.* **65**(1), 19–37 (2017)
- D. Bertsimas, V. Misis, Exact first-choice product line optimization. *Oper. Res.* **67**(3), 651–670 (2019)
- D. Bertsimas, G. Perakis, Dynamic pricing: a learning approach, in *Mathematical and Computational Models for Congestion Charging*, ed. by S. Lawphongpanich, D.W. Hearn, M.J. Smith (Springer US, Boston, 2006)
- D. Bertsimas, I. Popescu, Revenue management in a dynamic network environment. *Transp. Sci.* **37**(3), 257–277 (2003)

- D. Bertsimas, R. Shioda, Restaurant revenue management. *Oper. Res.* **51**(3), 472–486 (2003)
- D. Bertsimas, J. Hawkins, G. Perakis, Optimal bidding in online auctions. *J. Revenue Pricing Manag.* **8**(1), 21–41 (2009)
- O. Besbes, I. Lobel, Intertemporal price discrimination: structure and computation of optimal policies. *Manag. Sci.* **61**(1), 92–110 (2015)
- O. Besbes, C. Maglaras, Revenue optimization for a make-to-order queue in an uncertain market environment. *Oper. Res.* **57**(6), 1438–1450 (2009)
- O. Besbes, C. Maglaras, Dynamic pricing with financial milestones: feedback-form policies. *Manag. Sci.* **58**(9), 1715–1731 (2012)
- O. Besbes, D. Saure, Dynamic pricing in the presence of demand shifts. *Manuf. Serv. Oper. Manag.* **16**(4), 513–528 (2014)
- O. Besbes, D. Saure, Product assortment and price competition under multinomial logit demand. *Prod. Oper. Manag.* **25**(1), 114–127 (2016)
- O. Besbes, A. Zeevi, Dynamic pricing without knowing the demand function: risk bounds and near optimal algorithms. *Oper. Res.* **57**(6), 1407–1420 (2009)
- O. Besbes, A. Zeevi, On the minimax complexity of pricing in a changing environment. *Oper. Res.* **59**(1), 66–79 (2011)
- O. Besbes, A. Zeevi, Blind network revenue management. *Oper. Res.* **60**(6), 1537–1550 (2012)
- O. Besbes, A. Zeevi, On the (surprising) sufficiency of linear models for dynamic pricing with demand learning. *Manag. Sci.* **61**(4), 723–739 (2015)
- O. Besbes, R. Phillips, A. Zeevi, Testing the validity of a demand model: an operations perspective. *Manuf. Serv. Oper. Manag.* **12**(1), 162–183 (2010)
- O. Besbes, Y. Gur, A. Zeevi, Non-stationary stochastic optimization. *Oper. Res.* **63**(5), 1227–1244 (2015)
- O. Besbes, D. Iancu, N. Trichakis, Dynamic pricing under debt: spiraling distortions and efficiency losses. *Manag. Sci.* **64**(10), 4572–4589 (2018)
- G. Bitran, R. Caldentey, An overview of pricing models and revenue management. *Manuf. Serv. Oper. Manag.* **5**(3), 203–229 (2003)
- G. Bitran, R. Caldentey, S. Mondschein, Coordinating clearance markdown sales of seasonal products in retail chains. *Oper. Res.* **46**(5), 609–624 (1998)
- J. Blanchet, G. Gallego, V. Goyal, A Markov chain approximation to choice modeling. *Oper. Res.* **64**(4), 886–905 (2016)
- H.D. Block, Random orderings and stochastic theories of responses, in *Economic Information, Decision, and Prediction* (Springer Netherlands, Dordrecht, 1974), pp. 172–217
- C. Borgs, O. Candogan, J. Chayes, I. Lobel, H. Nazerzadeh, Optimal multiperiod pricing with service guarantees. *Manag. Sci.* **60**(7), 1792–1811 (2014)
- T. Boyaci, Y. Akcay, Pricing when customers have limited attention. *Manag. Sci.* **64**(7), 2995–3014 (2018)
- T. Boyaci, G. Gallego, Coordinating pricing and inventory replenishment policies for one wholesaler and one or more geographically dispersed retailers. *Int. J. Prod. Econ.* **77**(2), 95–111 (2002)
- T. Boyaci, O. Ozer, Information acquisition for capacity planning via pricing and advance selling: when to stop and act? *Oper. Res.* **58**(5), 1328–1349 (2010)
- P. Bremaud, *Point Processes and Queues: Martingale Dynamics* (Springer Verlag, New York, 1980)
- J. Broder, P. Rusmevichientong, Dynamic pricing under a general parametric choice model. *Oper. Res.* **60**(4), 965–980 (2012)
- J.J.M. Bront, I. Mendez Diaz, G. Vulcano, A column generation algorithm for choice-based network revenue management. *Oper. Res.* **57**(3), 769–784 (2009)
- S.L. Brumelle, J.I. McGill, Airline seat allocation with multiple nested fare classes. *Oper. Res.* **41**(1), 127–137 (1993)
- S. Brumelle, D. Walczak, Dynamic airline revenue management with multiple semi-Markov demand. *Oper. Res.* **51**(1), 137–148 (2003)

- S.L. Brumelle, J.I. McGill, T.H. Oum, M.W. Tretheway, K. Sawaki, Allocation of airline seats between stochastically dependent demands. *Transp. Sci.* **24**(3), 183–192 (1990)
- G. Cachon, P. Feldman, Pricing services subject to congestion: charge per-use fees or sell subscriptions. *Manuf. Serv. Oper. Manag.* **13**(2), 244–260 (2011)
- G. Cachon, P. Feldman, Price commitments with strategic consumers: why it can be optimal to discount more frequently... than optimal. *Manuf. Serv. Oper. Manag.* **17**(3), 399–410 (2015)
- G.P. Cachon, P. Feldman, Is advance selling desirable with competition? *Mark. Sci.* **36**(2), 214–231 (2017)
- G. Cachon, A.G. Kok, Implementation of the newsvendor model with clearance pricing: how to (and how not to) estimate a salvage value. *Manuf. Serv. Oper. Manag.* **9**(3), 276–290 (2007a)
- G.P. Cachon, A.G. Kok, Category management and coordination in retail assortment planning in the presence of basket shopping consumers. *Manag. Sci.* **53**(6), 934–951 (2007b)
- G.P. Cachon, R. Swinney, Purchasing, pricing, and quick response in the presence of strategic consumers. *Manag. Sci.* **55**(3), 497–511 (2009)
- G.P. Cachon, R. Swinney, The value of fast fashion: quick response, enhanced design, and strategic consumer behavior. *Manag. Sci.* **57**(4), 778–795 (2011)
- G. Cachon, C. Terwiesch, Y. Xu, Retail assortment planning in the presence of consumer search. *Manuf. Serv. Oper. Manag.* **7**(4), 330–346 (2005)
- G. Cachon, K.M. Daniels, R. Lobel, The role of surge pricing on a service platform with self-scheduling capacity. *Manuf. Serv. Oper. Manag.* **19**(3), 368–384 (2017)
- R. Caldentey, G. Vulcano, Online auction and list price revenue management. *Manag. Sci.* **53**(5), 795–813 (2007)
- R. Caldentey, L.M. Wein, Revenue management of a make-to-stock queue. *Oper. Res.* **54**(5), 859–875 (2006)
- R. Caldentey, Y. Liu, I. Lobel, Intertemporal pricing under minimax regret. *Oper. Res.* **65**(1), 104–129 (2017)
- A. Calmon, D.F. Cioacan, G. Romero, Revenue management with repeated customer interactions. Technical report, University of Toronto, Toronto, ON (2019)
- A. Caplin, B. Nalebuff, Aggregation and imperfect competition: on the existence of equilibrium. *Econometrica* **59**(1), 25–59 (1991)
- A. Caplin, M. Dean, Revealed preference, rational inattention, and costly information acquisition. Working paper, National Bureau of Economic Research, Cambridge, MA (2014)
- F. Caro, J. Gallien, Dynamic assortment with demand learning for seasonal consumer goods. *Manag. Sci.* **53**(2), 276–292 (2007)
- F. Caro, J. Gallien, Inventory management of a fast-fashion retail network. *Oper. Res.* **58**(2), 257–273 (2010)
- F. Caro, J. Gallien, Clearance pricing optimization for a fast-fashion retailer. *Oper. Res.* **60**(6), 1404–1422 (2012)
- F. Caro, V. Martinez-de-Albeniz, The effect of assortment rotation on consumer choice, and its impact on competition, in *Operations Management Models with Consumer-Driven Demand*, ed. by S. Netessine, C. Tang (Springer, New York, 2009)
- F. Caro, V. Martinez-de-Albeniz, Product and price competition with satiation effects. *Manag. Sci.* **58**(7), 1357–1373 (2012)
- F. Caro, V. Martinez-de-Albeniz, How fast fashion works: can it work for you, too? *IIESE Insight Rev.* **21**, 58–65 (2014)
- F. Caro, V. Martinez-de-Albeniz, Fast fashion: business model overview and research opportunities, in *Retail Supply Chain Management: Quantitative Models and Empirical Studies*, ed. by N. Agrawal, S.A. Smith (Springer, New York, 2015)
- F. Caro, J. Gallien, M. Diaz, J. Garcia, J.M. Corredoira, M. Montes, J.A. Ramos, J. Correa, Zara uses operations research to reengineer its global distribution process. *Interfaces* **40**(1), 71–84 (2010)
- F. Caro, V. Martinez-de-Albeniz, P. Rusmevichientong, The assortment packing problem: multiperiod assortment planning for short-lived products. *Manag. Sci.* **60**(11), 2701–2721 (2014)

- J. Carrasco, J. de Ortuzar, Review and assessment of the nested logit model. *Transp. Rev.* **22**(2), 197–218 (2002)
- L.E. Celis, G. Lewis, M. Mobius, H. Nazerzadeh, Buy-it-now or take-a-chance: price discrimination through randomized auctions. *Manag. Sci.* **60**(12), 2927–2948 (2014)
- O. Ceryan, O. Sahin, I. Duenyas, Dynamic pricing of substitutable products in the presence of capacity flexibility. *Manuf. Serv. Oper. Manag.* **15**(1), 86–101 (2013)
- O. Ceryan, I. Duenyas, O. Sahin, Dynamic pricing and replenishment with consumer upgrades. *Prod. Oper. Manag.* **27**(4), 663–679 (2018)
- L.M.A. Chan, D. Simchi-Levi, J. Swann, Pricing, production, and inventory policies for manufacturing with stochastic demand and discretionary sales. *Manuf. Serv. Oper. Manag.* **8**(2), 149–168 (2006)
- S. Chandler, S. Ja, Revenue opportunity modeling at American Airlines, in *AGIFORS Reservations and Yield Management Study Group Annual Meeting Proceedings*, Jeju (2007)
- J. Chaneton, G. Vulcano, Computing bid-prices for revenue management under customer choice behavior. *Manuf. Serv. Oper. Manag.* **13**(4), 452–470 (2011)
- R.E. Chatwin, Multiperiod airline overbooking with a single fare class. *Oper. Res.* **46**(6), 805–819 (1998)
- R.E. Chatwin, Continuous-time airline overbooking with time-dependent fares and refunds. *Transp. Sci.* **33**(2), 182–191 (1999)
- N. Chen, Y.-J. Chen, Duopoly competition with network effects in discrete choice models. Technical report, Hong Kong University of Science and Technology, Hong Kong (2017)
- Y. Chen, V.F. Farias, Simple policies for dynamic pricing with imperfect forecasts. *Oper. Res.* **61**(3), 612–624 (2013)
- Y. Chen, V.F. Farias, On the efficacy of static prices for revenue management in the face of strategic customers. Technical report, MIT, Cambridge, MA (2017)
- Y. Chen, V.F. Farias, Robust dynamic pricing with strategic customers. *Math. Oper. Res.* **43**(4), 1119–1142 (2018)
- N. Chen, G. Gallego, Nonparametric learning and optimization with covariates. Technical report, Hong Kong University of Science and Technology, Hong Kong (2018a)
- N. Chen, G. Gallego, A primal-dual learning algorithm for personalized dynamic pricing with an inventory constraint. Technical report, Hong Kong University of Science and Technology, Hong Kong (2018b)
- N. Chen, G. Gallego, Welfare analysis of dynamic pricing. *Manag. Sci.* **65**(1), 139–151 (2019)
- X. Chen, P. Hu, Joint pricing and inventory management with deterministic demand and costly price adjustment. *Oper. Res. Lett.* **40**(5), 385–389 (2012)
- Y. Chen, S. Jasin, Power of dynamic pricing in revenue management with strategic (forward-looking) customers. Technical report, University of Michigan, Ann Arbor, MI (2018)
- N. Chen, J. Nasiry, Does loss aversion preclude price variation? *Manuf. Serv. Oper. Manag.* (2019, forthcoming)
- Y. Chen, C. Shi, Joint pricing and inventory management with strategic customers. *Oper. Res.* (2019, forthcoming)
- X. Chen, D. Simchi-Levi, Coordinating inventory control and pricing strategies with random demand and fixed ordering cost: the infinite horizon case. *Math. Oper. Res.* **29**(3), 698–723 (2004a)
- X. Chen, D. Simchi-Levi, Coordinating inventory control and pricing strategies with random demand and fixed ordering cost: the finite horizon case. *Oper. Res.* **52**(6), 887–896 (2004b)
- X. Chen, D. Simchi-Levi, Coordinating inventory control and pricing strategies with random demand and fixed ordering cost: the continuous review model. *Oper. Res. Lett.* **34**(3), 323–332 (2006)
- X. Chen, D. Simchi-Levi, Pricing and inventory management, in *The Oxford Handbook of Pricing Management*, ed. by R. Phillips, O. Ozer (Oxford University Press, Oxford, 2012), pp. 784–822
- X. Chen, Y. Wang, A note on tight lower bound for MNL-bandit assortment selection models. *Oper. Res. Lett.* **46**(5), 534–537 (2018)

- X. Chen, S. Zhou, F. Chen, Integration of inventory and pricing decisions with costly price adjustments. *Oper. Res.* **59**(5), 1144–1158 (2011)
- X. Chen, Z. Pang, L. Pan, Coordinating inventory control and pricing strategies for perishable products. *Oper. Res.* **62**(2), 284–300 (2014)
- B. Chen, X. Chao, C. Shi, Nonparametric algorithms for joint pricing and inventory control with lost-sales and censored demand. Technical report, University of Michigan, Ann Arbor, MI (2016a)
- Q. Chen, S. Jasin, I. Duenyas, Real-time dynamic pricing with minimal and flexible price adjustments. *Manag. Sci.* **62**(8), 2437–2455 (2016b)
- X. Chen, P. Hu, S. Shum, Y. Zhang, Dynamic stochastic inventory management with reference price effects. *Oper. Res.* **64**(6), 1529–1536 (2016c)
- X. Chen, W. Ma, D. Simchi-Levi, L. Xin, Assortment planning for recommendations at checkout under inventory constraints. Technical report, MIT, Cambridge, MA (2016d)
- H. Chen, M. Hu, G. Perakis, Distribution-free pricing. Technical report, University of Toronto, Toronto, ON (2017a)
- X. Chen, P. Hu, Z. Hu, Efficient algorithms for dynamic pricing problem with reference price effect. *Manag. Sci.* **63**(12), 4389–4408 (2017b)
- Y. Chen, R. Levi, C. Shi, Revenue management of reusable resources with advanced reservations. *Prod. Oper. Manag.* **26**(5), 836–859 (2017c)
- H. Chen, M. Hu, J. Wu, Intertemporal price discrimination via randomized pricing. Technical report, University of Toronto, Toronto, ON (2018a)
- X. Chen, Y. Wang, Y. Zhou, Dynamic assortment optimization with changing contextual information. Technical report, New York University, New York, NY (2018b)
- X. Chen, Y. Wang, Y. Zhou, Dynamic assortment selection under the nested logit models. Technical report, New York University, New York, NY (2018c)
- Q.G. Chen, S. Jasin, I. Duenyas, Nonparametric self-adjusting control for joint learning and optimization of multiproduct pricing with finite resource capacity. *Math. Oper. Res.* **44**(2), 601–631 (2019a)
- B. Chen, X. Chao, H.-S. Ahn, Coordinating pricing and inventory replenishment with nonparametric demand learning. *Oper. Res.* (2019b, forthcoming)
- W.C. Cheung, D. Simchi-Levi, Technical note – dynamic pricing and demand learning with limited price experimentation. *Oper. Res.* **65**(6), 1722–1731 (2017)
- S.-H. Cho, C.S. Tang, Technical note – capacity allocation under retail competition: uniform and competitive allocations. *Oper. Res.* **62**(1), 72–80 (2014)
- J.-K. Chong, T.-H. Ho, C.S. Tang, A modeling framework for category assortment planning. *Manuf. Serv. Oper. Manag.* **3**(3), 191–210 (2001)
- H. Chung, H.-S. Ahn, S. Jasin, (Rescaled) multi-attempt approximation of choice model and its application to assortment optimization. *Prod. Oper. Manag.* **8**(2), 341–353 (2019)
- E. Cinar, V. Martinez-de-Albeniz, A closed-loop approach to dynamic assortment planning. Technical report, University of Navarra, Barcelona (2014)
- D.F. Ciocan, V. Farias, Model predictive control for dynamic resource allocation. *Math. Oper. Res.* **37**(3), 501–525 (2012a)
- D.F. Ciocan, V.F. Farias, Dynamic allocation problems with volatile demand. *Math. Oper. Res.* **37**(3), 501–525 (2012b)
- D.F. Ciocan, V.F. Farias, Fast demand learning for display advertising revenue management. Technical report, MIT, Boston, MA (2014)
- M. Cohen, S. Gupta, J. Kalas, G. Perakis, An efficient algorithm for dynamic pricing using a graphical representation. Technical report, MIT, Cambridge, MA (2016)
- M. Cohen, J. Kalas, G. Perakis, Optimizing promotions for multiple items in supermarkets. Technical report, MIT, Cambridge, MA (2017a)
- M. Cohen, R.S. Pindyck, G. Perakis, Pricing with limited knowledge of demand. Technical report, MIT, Cambridge, MA (2017b)
- M.C. Cohen, N.-H.Z. Leung, K. Panhangam, G. Perakis, A. Smith, The impact of linear optimization on promotion planning. *Oper. Res.* **65**(2), 446–468 (2017c)

- M. Cohen, I. Lobel, R.P. Leme, Feature-based dynamic pricing. Technical report, New York University, New York, NY (2018a)
- M. Cohen, R. Lobel, G. Perakis, Dynamic pricing through data sampling. *Prod. Oper. Manag.* **27**(6), 1074–1088 (2018b)
- P.B. Collado, V. Martínez-de-Albeniz, Estimating and optimizing the impact of inventory on consumer choices in a fashion retail setting. Technical report, University of Navarra, Barcelona (2017)
- W. Cooper, Asymptotic behavior of an allocation policy for revenue management. *Oper. Res.* **50**(4), 720–727 (2002)
- W.L. Cooper, D. Gupta, Stochastic comparisons in airline revenue management. *Manuf. Serv. Oper. Manag.* **8**(3), 221–234 (2006)
- W.L. Cooper, T. Homem de Mello, Some decomposition methods for revenue management. *Transp. Sci.* **41**(3), 332–353 (2007)
- W.L. Cooper, L. Li, On the use of buy up as a model of customer choice in revenue management. *Prod. Oper. Manag.* **21**(5), 833–850 (2012)
- W. Cooper, T. Homem de Mello, A. Kleywegt, Models of the spiral-down effect in revenue management. *Oper. Res.* **54**(5), 968–987 (2006)
- W.L. Cooper, T. Homem de Mello, A.J. Kleywegt, Learning and pricing with models that do not explicitly incorporate competition. *Oper. Res.* **63**(1), 86–103 (2015)
- P. Courty, J. Nasiry, Loss aversion and the uniform pricing puzzle for media and entertainment products. *Econ. Theory* **66**(1), 105–140 (2018)
- D. Crapis, B. Ifrach, C. Maglaras, M. Scarsini, Monopoly pricing in the presence of social learning. *Manag. Sci.* **63**(11), 3531–3997 (2017)
- Y. Cui, I. Duenyas, O. Sahin, Unbundling of ancillary service: how does price discrimination of main service matter? *Manuf. Serv. Oper. Manag.* **20**(3), 455–466 (2018)
- R.E. Curry, Optimal airline seat allocation with fare nested by origins and destinations. *Transp. Sci.* **24**(3), 193–204 (1990)
- C. Daganzo, *Multinomial Probit: The Theory and Its Application to Demand Forecasting* (Academic, London, 1979)
- J. Dai, W. Ding, A. Kleywegt, X. Wang, Y. Zhang, Choice based revenue management for parallel flights. Technical report, Georgia Institute of Technology, Atlanta, GA (2015)
- J. Dai, A. Kleywegt, Y. Xiao, Network revenue management with cancellations and no-shows. *Prod. Oper. Manag.* **8**(2), 292–318 (2019)
- J. Davis, G. Gallego, H. Topaloglu, Assortment planning under the multinomial logit model with totally unimodular constraint structures. Technical report, Cornell University, School of Operations Research and Information Engineering (2013)
- J.M. Davis, G. Gallego, H. Topaloglu, Assortment optimization under variants of the nested logit model. *Oper. Res.* **62**(2), 250–273 (2014)
- S.V. de Boer, R. Freling, N. Piersma, Mathematical programming for network revenue management revisited. *Eur. J. Oper. Res.* **137**(1), 72–92 (2002)
- A.V. den Boer, Dynamic pricing and learning: historical origins, current research, and new directions. *Surv. Oper. Res. Manag. Sci.* **20**(1), 1–18 (2015)
- A. den Boer, N.B. Keskin, Discontinuous demand functions: estimation and pricing. Technical report, Duke University, Durham, NC (2017a)
- A. den Boer and N.B. Keskin, Dynamic pricing with demand learning and reference effects. Technical report, Duke University, Durham, NC (2017b)
- A. Desir, V. Goyal, An FPTAS for capacity constrained assortment optimization. Technical report, Columbia University, New York, NY (2013)
- A. Desir, V. Goyal, D. Segev, C. Ye, Capacity constrained assortment optimization under the Markov chain based choice model. Technical report, Columbia University, New York, NY (2015)
- A. Desir, V. Goyal, S. Jagabathula, D. Segev, A Mallows-smoothed distribution over rankings approach for modeling choice. Technical report, Columbia University, New York, NY (2018)

- S. Diwan. Performance of dynamic programming methods in airline revenue management. Master's thesis, Massachusetts Institute of Technology, Cambridge, MA (2010)
- T.A. Domencich, D. McFadden, *Urban Travel Demand : A Behavioral Analysis* (North Holland Publishing, Amsterdam, 1975)
- C. Du, W.L. Cooper, Z. Wang, Optimal pricing for a multinomial logit choice model with network effects. *Oper. Res.* **64**(2), 2016 (2016)
- C. Du, W.L. Cooper, Z. Wang, Optimal worst-case pricing for a logit demand model with network effects. *Oper. Res. Lett.* **46**(3), 2018 (2018)
- D. Dzyabura, S. Jagabathula, Offline assortment optimization in the presence of an online channel. *Manag. Sci.* **64**(6), 2767–2786 (2018)
- A.N. Elmachtoub, M.L. Hamilton, The power of opaque products in pricing. Technical report, Columbia University, New York, NY (2017)
- A.N. Elmachtoub, Y. Wei, Retailing with opaque products. Technical report, Columbia University, New York, NY (2015)
- A.N. Elmachtoub, V. Gupta, M.L. Hamilton, The value of personalized pricing. Technical report, Columbia University, New York, NY (2018)
- W. Elmahry, P. Keskinocak, Dynamic pricing in the presence of inventory considerations: research overview, current practices, and future directions. *Manag. Sci.* **49**(10), 1287–1309 (2003)
- A. Erdelyi, H. Topaloglu, Separable approximations for joint capacity control and overbooking decisions in network revenue management. *J. Revenue Pricing Manag.* **8**(1), 3–20 (2009)
- A. Erdelyi, H. Topaloglu, A dynamic programming decomposition method for making overbooking decisions over an airline network. *INFORMS J. Comput.* **22**(3), 443–456 (2010)
- S.S. Eren, C. Maglaras, Monopoly pricing with limited demand information. *J. Revenue Pricing Manag.* **9**(1–2), 23–48 (2010)
- A. Farahat, G. Perakis, Profit loss in differentiated oligopolies. *Oper. Res. Lett.* **37**(1), 43–46 (2009)
- A. Farahat, G. Perakis, A nonnegative extension of the affine demand function and equilibrium analysis for multiproduct price competition. *Oper. Res. Lett.* **38**(4), 280–286 (2010)
- V.F. Farias, B. Van Roy, An approximate dynamic programming approach to network revenue management. Technical report, MIT, Cambridge, MA (2007)
- V. Farias, B. Van Roy, Dynamic pricing with a prior on market response. *Oper. Res.* **58**(1), 16–29 (2010)
- V.F. Farias, S. Jagabathula, D. Shah, A non-parametric approach to modeling choice with limited data. *Manag. Sci.* **59**(2), 305–322 (2013)
- V.F. Farias, S. Jagabathula, D. Shah, Building optimized and hyperlocal product assortments: a nonparametric choice approach. Technical report, MIT, Cambridge, MA (2016)
- A. Federgruen, A. Heching, Combined pricing and inventory control under uncertainty. *Oper. Res.* **47**(3), 454–475 (1999)
- A. Federgruen, M. Hu, Multi-product price and assortment competition. *Oper. Res.* **63**(3), 572–584 (2015)
- A. Federgruen, M. Hu, Global and robust stability in a general price and assortment competition model. Technical report, University of Toronto, Toronto, ON (2018)
- J. Feldman, Space constrained assortment optimization under the paired combinatorial model. Technical report, Washington University, St. Louis, MO (2018)
- J. Feldman, A. Paul, Relating the approximability of the fixed cost and space constrained assortment problems. *Prod. Oper. Manag.* **8**(5), 1238–1255 (2019)
- J. Feldman, H. Topaloglu, Bounding optimal expected revenues for assortment optimization under mixtures of multinomial logits. *Prod. Oper. Manag.* **24**(10), 1598–1620 (2015a)
- J.B. Feldman, H. Topaloglu, Technical note – capacity constraints across nests in assortment optimization under the nested logit model. *Oper. Res.* **63**(4), 812–822 (2015b)
- J.B. Feldman, H. Topaloglu, Revenue management under the Markov chain choice model. *Oper. Res.* **65**(5), 1322–1342 (2017)

- J. Feldman, H. Topaloglu, Technical note – capacitated assortment optimization under the multinomial logit model with nested consideration sets. *Oper. Res.* **66**(2), 380–391 (2018)
- J. Feldman, D. Zhang, X. Liu, N. Zhang, Taking assortment optimization from theory to practice: evidence from large field experiments on alibaba. Technical report, Washington University, St. Louis, MO (2018)
- J. Feldman, A. Paul, H. Topaloglu, Technical note – assortment optimization with small consideration sets. *Oper. Res.* (2019, forthcoming)
- Y. Feng, G. Gallego, Optimal starting times of end-of-season sales and optimal stopping times for promotional fares. *Manag. Sci.* **41**(8), 1371–1391 (1995)
- Y. Feng, G. Gallego, Perishable asset revenue management with Markovian time-dependent demand intensities. *Manag. Sci.* **46**(7), 941–956 (2000)
- Y. Feng, M. Hu, Blockbuster or niche? Competitive strategy under network effects. Technical report, University of Toronto, Toronto, ON (2017)
- Y. Feng, B. Xiao, Optimal policies of yield management with multiple predetermined prices. *Oper. Res.* **48**(2), 332–343 (2000)
- B. Feng, Y. Li, Z.-J.M. Shen, Air cargo operations: literature review and comparison with practices. *Transp. Res. C Emerg. Technol.* **56**(July), 263–280 (2015)
- G. Feng, X. Li, Z. Wang, Technical note – on the relationship between several discrete choice models. *Oper. Res.* **65**(6), 1516–1525 (2017)
- G. Feng, X. Li, Z. Wang, On the substitutability and complementarity in discrete choice models. *Oper. Res. Lett.* **46**(1), 141–146 (2018)
- K. Ferreira, J. Goh, Assortment rotation and the value of concealment. Technical report, Harvard Business School, Cambridge, MA (2018)
- K.J. Ferreira, B.H.A. Lee, D. Simchi-Levi, Analytics for an online retailer: demand forecasting and price optimization. *Manuf. Serv. Oper. Manag.* **18**(1), 69–88 (2016)
- K.J. Ferreira, D. Simchi-Levi, H. Wang, Online network revenue management using Thompson sampling. *Oper. Res.* **66**(6), 1586–1602 (2018)
- T. Fiig, K. Isler, C. Hopperstad, P. Belobaba, Optimization of mixed fare structures: theory and applications. *J. Revenue Pricing Manag.* **9**(1–2), 152–170 (2010)
- G. Gallego, A min-max distribution-free procedure for the (Q, r) inventory model. *Oper. Res. Lett.* **11**(1), 55–60 (1992)
- G. Gallego, M. Hu, Dynamic pricing of perishable assets under competition. *Manag. Sci.* **60**(5), 1241–1259 (2014)
- G. Gallego, A. Li, Attention, consideration then selection choice model. Technical report, Hong Kong University of Science and Technology, Hong Kong (2016)
- G. Gallego, I. Moon, The distribution free newsboy problem: review and extensions. *J. Oper. Res. Soc.* **44**(8), 824–834 (1993)
- G. Gallego, O. Sahin, Revenue management with partially refundable fares. *Oper. Res.* **58**(4), 817–833 (2010)
- G. Gallego, C. Stefanescu, Upgrades, upsells and pricing in revenue management. Technical report, Columbia University, New York, NY (2009)
- G. Gallego, C. Stefanescu, Services engineering: design and pricing of service features, in *The Oxford Handbook of Pricing Management*, ed. by R. Phillips, Ö. Özer (Oxford University Press, Oxford, 2012), pp. 711–733
- G. Gallego, H. Topaloglu, Constrained assortment optimization for the nested logit model. *Manag. Sci.* **60**(10), 2583–2601 (2014)
- G. Gallego, G. van Ryzin, Optimal dynamic pricing of inventories with stochastic demand over finite horizons. *Manag. Sci.* **40**(8), 999–1020 (1994)
- G. Gallego, G.J. van Ryzin, A multiple product dynamic pricing problem and its applications to network yield management. *Oper. Res.* **45**(1), 24–41 (1997)
- G. Gallego, R. Wang, Multiproduct price optimization and competition under the nested logit model with product-differentiated price sensitivities. *Oper. Res.* **62**(2), 450–461 (2014)
- G. Gallego, R. Wang, Reservation value choice models. Technical report, Hong Kong University of Science and Technology (2019)

- G. Gallego, G. Iyengar, R. Phillips, A. Dubey, Managing flexible products on a network. Computational Optimization Research Center Technical Report TR-2004-01, Columbia University (2004)
- G. Gallego, W.T. Huh, W. Kang, R. Phillips, Price competition with the attraction demand model: existence of unique equilibrium and its stability. *Manuf. Serv. Oper. Manag.* **8**(4), 359–375 (2006a)
- G. Gallego, S. Krishnamoorthy, R. Phillips, Dynamic revenue management games with forward and spot markets. *J. Revenue Pricing Manag.* **5**(1), 10–31 (2006b)
- G. Gallego, S. Kou, R. Phillips, Revenue management of callable products. *Manag. Sci.* **54**(3), 550–564 (2008a)
- G. Gallego, R. Phillips, O. Sahin, Strategic management of distressed inventories. *Prod. Oper. Manag.* **17**(4), 402–415 (2008b)
- G. Gallego, L. Lin, R. Ratliff, Choice based EMSR methods for single-resource revenue management with demand dependencies. *J. Revenue Pricing Manag.* **8**(2–3), 207–240 (2009a)
- G. Gallego, L. Lin, R. Ratliff, Demand arrival order and revenue management controls, in *AGIFORS Cargo and RM Study Group* (2009b)
- G. Gallego, R. Ratliff, S. Shebalov, A general attraction model and sales-based linear program for network revenue management under consumer choice. *Oper. Res.* **63**(1), 212–232 (2015)
- G. Gallego, A. Li, V.A. Truong, X. Wang, Approximation algorithms for product framing and pricing. Technical report, Columbia University, New York, NY (2016a)
- G. Gallego, A. Li, V.A. Truong, X. Wang, Online bipartite matching with customer choice. Technical report, Columbia University, New York, NY (2016b)
- G. Gallego, A. Li, V.A. Truong, X. Wang, Online personalized resource allocation with customer choice. Technical report, Columbia University, New York, NY (2016c)
- G. Gallego, M.Z.F. Li, Y. Liu, Dynamic nonlinear pricing of inventories over finite sales horizons. Technical report, Hong Kong University of Science and Technology, Hong Kong (2018)
- J. Gallien, Dynamic mechanism design for online commerce. *Manag. Sci.* **54**(2), 291–310 (2006)
- V. Gaur, D. Honhon, Assortment planning and inventory decisions under a locational choice model. *Manag. Sci.* **52**(10), 1528–1543 (2006)
- Y. Ge, C. Pan, Study on overbooking management with a choice model of consumer behavior, in *2010 International Conference on Management and Service Science* (2010), pp. 1–4
- I.I. Gihman, A.V. Skorohod, *Controlled Stochastic Processes* (Springer Verlag, New York, 1979)
- N. Golrezaei, H. Nazerzadeh, Auctions with dynamic costly information acquisition. *Oper. Res.* **65**(1), 130–144 (2017)
- N. Golrezaei, H. Nazerzadeh, P. Rusmevichientong, Real-time optimization of personalized assortments. *Manag. Sci.* **60**(6), 1532–1551 (2014)
- N. Golrezaei, H. Nazerzadeh, R. Randhawa, Dynamic pricing for heterogeneous time-sensitive customers. Technical report, University of Southern California, Los Angeles, CA (2017)
- V. Goyal, R. Levi, D. Segev, Near-optimal algorithms for the assortment planning problem under dynamic substitution and stochastic demand. *Oper. Res.* **64**(1), 219–235 (2016)
- D. Gupta, W.L. Cooper, Stochastic comparisons in product yield management. *Oper. Res.* **53**(2), 377–384 (2005)
- J.M. Harrison, B.N. Keskin, A. Zeevi, Bayesian dynamic pricing policies: learning and earning under a binary prior distribution. *Manag. Sci.* **58**(3), 570–586 (2012)
- A. Heching, G. Gallego, G.J. van Ryzin, Markdown pricing: an empirical analysis of policies and revenue potential at one apparel retailer. *J. Pricing Revenue Manag.* **1**(2), 139–160 (2002)
- H.S. Heese, V. Martinez-de-Albeniz, Effects of assortment breadth announcements on manufacturer competition. *Manuf. Serv. Oper. Manag.* **20**(2), 302–316 (2018)
- T.-H. Ho, C.S. Tang, D.R. Bell, Rational shopping behavior and the option value of variable pricing. *Manag. Sci.* **44**(12–2), S145–S160 (1998)
- D. Honhon, S. Seshadri, Fixed vs. random proportions demand models for the assortment planning problem under stockout-based substitution. *Manuf. Serv. Oper. Manag.* **15**(3), 378–386 (2013)
- D. Honhon, V. Gaur, S. Seshadri, Assortment planning and inventory decisions under stockout-based substitution. *Oper. Res.* **58**(5), 1364–1379 (2010)

- D. Honhon, S. Jonnalagedda, X.A. Pan, Optimal algorithms for assortment selection under ranking-based consumer choice models. *Manuf. Serv. Oper. Manag.* **14**(2), 279–289 (2012)
- W.J. Hopp, X. Xu, A static approximation for dynamic demand substitution with applications in a competitive market. *Oper. Res.* **56**(3), 630–645 (2008)
- X. Hu, W.J. Hopp, Price trends in a dynamic pricing model with heterogeneous customers: a martingale perspective. *Oper. Res.* **57**(5), 1298–1302 (2009)
- Z. Hu, J. Nasiry, Are markets with loss-averse consumers more sensitive to losses? *Manag. Sci.* **64**(3), 1384–1395 (2018)
- M. Hu, M. Pavlin, M. Shi, When gray markets have silver linings: all-unit discounts, gray markets, and channel management. *Manuf. Serv. Oper. Manag.* **15**(2), 250–262 (2013a)
- X. Hu, R. Caldentey, G. Vulcano, Revenue sharing in airline alliances. *Manag. Sci.* **59**(5), 1177–1195 (2013b)
- M. Hu, J. Milner, J. Wu, Liking and following and the newsvendor: operations and marketing policies under social influence. *Manag. Sci.* **62**(3), 867–879 (2016a)
- Z. Hu, X. Chen, P. Hu, Technical note – dynamic pricing with gain-seeking reference price effects. *Oper. Res.* **64**(1), 150–157 (2016b)
- F. Huettner, T. Boyaci, Y. Akcay, Consumer choice under limited attention when options have different information costs. Technical report, ESMT, Berlin (2018)
- W.T. Huh, H. Li, Technical note – pricing under the nested attraction model with a multi-stage choice structure. *Oper. Res.* **63**(4), 840–850 (2015)
- B. Ifrach, C. Maglaras, M. Scarsini, Bayesian social learning from consumer reviews. Technical report, Columbia University, New York, NY (2018)
- S. Jagabathula, Assortment optimization under general choice. Technical report, New York University, New York, NY (2016)
- S. Jagabathula, P. Rusmevichientong, A nonparametric joint assortment and price choice model. *Manag. Sci.* **63**(9), 3128–3145 (2017)
- S. Jagabathula, P. Rusmevichientong, The limit of rationality in choice modeling: formulation, computation, and implications. *Manag. Sci.* **65**(5), 2196–2215 (2019)
- S. Jagabathula, G. Vulcano, A partial-order-based model to estimation individual preferences using panel data. *Manag. Sci.* **64**(4), 1609–1628 (2018)
- S. Jagabathula, L. Subramanian, A. Venkataraman, A conditional gradient approach for nonparametric estimation of mixtures of choice models. Technical report, New York University, New York, NY (2018)
- S. Jasin, Re-optimization and self-adjusting price control for network revenue management. *Oper. Res.* **62**(5), 1168–1178 (2014)
- S. Jasin, Performance of an LP-based control for revenue management with unknown demand parameters. *Oper. Res.* **63**(4), 909–915 (2015)
- S. Jasin, S. Kumar, A re-solving heuristic with bounded revenue loss for network revenue management with customer choice. *Math. Oper. Res.* **37**(2), 313–345 (2012)
- S. Jasin, S. Kumar, Analysis of deterministic LP-based heuristics for network revenue management. *Oper. Res.* **61**(6), 1312–1320 (2013)
- A. Javanmard, H. Nazerzadeh, Dynamic pricing in high dimensions. Technical report, University of Southern California, Los Angeles, CA (2018)
- C.R. Johnson, Positive definite matrices. *Am. Math. Mon.* **77**(3), 259–264 (1970)
- S. Kachani, G. Perakis, C. Simon, Modeling the transient nature of dynamic pricing with demand learning in a competitive environment, in *Network Science, Nonlinear Science and Infrastructure Science*, ed. by T. Friesz (Springer, Boston, 2007)
- S.M. Kakade, I. Lobel, H. Nazerzadeh, Optimal dynamic mechanism design and the virtual-pivot mechanism. *Oper. Res.* **61**(4), 837–854 (2013)
- Y. Kanoria, H. Nazerzadeh, Dynamic reserve prices for repeated auctions: learning from bids, in *Web and Internet Economics*, ed. by T.-Y. Lie, Q. Qi (Springer International Publishing, Beijing, 2014), pp. 232–232
- I. Karaesmen, G. van Ryzin, Overbooking with substitutable inventory classes. *Oper. Res.* **52**(1), 83–104 (2004a)

- I. Karaesmen, G. van Ryzin, Coordinating overbooking and capacity control decisions on a network. Technical report, Columbia Business School (2004b)
- P.W. Keller, R. Levi, G. Perakis, Efficient formulations for pricing under attraction demand models. *Math. Program.* **14**(1–2), 223–261 (2014)
- N.B. Keskin, J. Birge, Dynamic selling mechanisms for product differentiation and learning. *Oper. Res.* (2019, forthcoming)
- N.B. Keskin, A. Zeevi, Dynamic pricing with an unknown demand model: asymptotically optimal semi-myopic policies. *Oper. Res.* **62**(5), 1142–1167 (2014)
- N.B. Keskin, A. Zeevi, Chasing demand: learning and earning in a changing environment. *Math. Oper. Res.* **42**(2), 277–307 (2017)
- W.K. Kincaid, D.A. Darling, An inventory pricing problem. *J. Math. Anal. Appl.* **7**(2), 183–208 (1963)
- S.N. Kirshner, M. Nediak, Scalable dynamic bid prices for network revenue management in continuous time. *Prod. Oper. Manag.* **24**(10), 1621–1635 (2015)
- S. Kirshner, Y. Levin, M. Nediak, Quantity competition in C2C exchange markets with strategic consumers and dynamic preferences. Technical report, Queen’s University, Kingston (2018)
- R. Kleinberg, T. Leighton, The value of knowing a demand curve: bounds on regret for online posted-price auctions, in *44th Annual IEEE Symposium on Foundations of Computer Science*, Cambridge, MA (2003), pp. 594–605
- A. Kleywegt, An optimal control problem of dynamic pricing. Technical report, Georgia Institute of Technology, Atlanta, GA (2001)
- A.J. Kleywegt, J.D. Papastavrou, The dynamic and stochastic knapsack problem. *Oper. Res.* **46**(1), 17–35 (1998)
- A.G. Kok, M. Fisher, Demand estimation and assortment optimization under substitution: methodology and application. *Oper. Res.* **55**(6), 1001–1021 (2007)
- A.G. Kok, Y. Xu, Optimal and competitive assortments with endogenous pricing under hierarchical consumer choice models. *Manag. Sci.* **57**(9), 1546–1563 (2011)
- A.G. Kok, M. Fisher, R. Vaidyanathan, Assortment planning: review of literature and industry practice, in *Retail Supply Chain Management*, ed. by N. Agrawal, S.A. Smith (Springer, New York, 2008)
- F.S. Koppelman, C.-H. Wen, The paired combinatorial logit model: properties, estimation and application. *Transp. Res. B* **34**(2), 75–89 (2000)
- V. Kostami, D. Kostamis, S. Ziya, Pricing and capacity allocation for shared services. *Manuf. Serv. Oper. Manag.* **19**(2), 230–245 (2017)
- S. Kunnumkal, Randomization approaches for network revenue management with customer choice behavior. *Prod. Oper. Manag.* **23**(9), 1617–1633 (2014)
- S. Kunnumkal, On upper bounds for assortment optimization under the mixture of multinomial logit models. *Oper. Res. Lett.* **43**(2), 189–194 (2015)
- S. Kunnumkal, V. Martinez-de-Albeniz, Tractable approximations for assortment planning with product costs. *Oper. Res.* **67**(2), 436–452 (2019)
- S. Kunnumkal, K. Talluri, A strong Lagrangian relaxation for general discrete-choice network revenue management. Technical report, Indian School of Business, Hyderabad (2015a)
- S. Kunnumkal, K. Talluri, Choice network revenue management based on new compact formulations. Technical report, Indian School of Business, Hyderabad (2015b)
- S. Kunnumkal, K. Talluri, Technical note – a note on relaxations of the choice network revenue management dynamic program. *Oper. Res.* **64**(1), 158–166 (2016a)
- S. Kunnumkal, K. Talluri, On a piecewise-linear approximation for network revenue management. *Math. Oper. Res.* **41**(1), 72–91 (2016b)
- S. Kunnumkal, H. Topaloglu, A refined deterministic linear program for the network revenue management problem with customer choice behavior. *Nav. Res. Logist.* **55**(6), 563–580 (2008)
- S. Kunnumkal, H. Topaloglu, A stochastic approximation method for the revenue management problem on a single flight leg with discrete demand distributions. *Math. Meth. Oper. Res.* **70**(3), 477–504 (2009)

- S. Kunnumkal, H. Topaloglu, A new dynamic programming decomposition method for the network revenue management problem with customer choice behavior. *Prod. Oper. Manag.* **19**(5), 575–590 (2010a)
- S. Kunnumkal, H. Topaloglu, A stochastic approximation algorithm for making pricing decisions in network revenue management problems. *J. Revenue Pricing Manag.* **9**(5), 419–442 (2010b)
- S. Kunnumkal, H. Topaloglu, Computing time-dependent bid prices in network revenue management problems. *Transp. Sci.* **44**(1), 38–62 (2010c)
- S. Kunnumkal, H. Topaloglu, A randomized linear program for the network revenue management problem with customer choice behavior. *J. Revenue Pricing Manag.* **10**(5), 455–470 (2011a)
- S. Kunnumkal, H. Topaloglu, A stochastic approximation algorithm to compute bid prices for joint capacity allocation and overbooking over an airline network. *Nav. Res. Logist.* **58**(4), 323–343 (2011b)
- S. Kunnumkal, K. Talluri, H. Topaloglu, A randomized linear programming method for network revenue management with product-specific no-shows. *Transp. Sci.* **46**(1), 90–108 (2012)
- C.W. Kuo, H.S. Ahn, G. Aydin, Dynamic pricing of limited inventories when customers negotiate. *Oper. Res.* **59**(4), 882–897 (2011)
- H.D. Kwon, S.A. Lippman, C.S. Tang, Optimal markdown pricing strategy with demand learning. *Probab. Eng. Inf. Sci.* **26**(1), 77–104 (2012)
- T.L. Lai, H. Robbins, Maximally dependent random variables. *Proc. Natl. Acad. Sci.* **73**(2), 286–288 (1976)
- M.A. Larriviere, E.L. Porteus, Selling to the newsvendor: an analysis of price-only contracts. *Manuf. Serv. Oper. Manag.* **3**(4), 293–305 (2001)
- C.J. Lautenbacher, S. Stidham, The underlying Markov decision process in the single-leg airline yield management problem. *Transp. Sci.* **33**(2), 136–146 (1999)
- C.T. Lee, M. Hersh, A model for dynamic airline seat inventory control with multiple seat bookings. *Transp. Sci.* **27**(3), 252–265 (1993)
- Y. Lei, S. Jasin, Real-time dynamic pricing for revenue management with reusable resources, advance reservation, and deterministic service time requirements. Technical report, University of Michigan, Ann Arbor, MI (2018)
- Y. Lei, S. Jasin, A. Sinha, Joint dynamic pricing and order fulfillment for e-commerce retailers. *Manuf. Serv. Oper. Manag.* **20**(2), 269–284 (2018)
- R. Levi, A. Radovanovic, Provably near-optimal LP-based policies for revenue management of reusable resources. *Oper. Res.* **58**(2), 503–507 (2010)
- R. Levi, G. Perakis, J. Uichanco, The data-driven newsvendor problem: new bounds and insights. *Oper. Res.* **63**(6), 1294–1306 (2015)
- Y. Levin, J. McGill, M. Nediak, Price guarantees in dynamic pricing and revenue management. *Oper. Res.* **55**(1), 75–97 (2007)
- Y. Levin, J. McGill, M. Nediak, Risk in revenue management and dynamic pricing. *Oper. Res.* **56**(2), 326–343 (2008)
- Y. Levin, J. McGill, M. Nediak, Dynamic pricing in the presence of strategic consumers and oligopolistic competition. *Manag. Sci.* **55**(1), 32–46 (2009)
- Y. Levin, J. McGill, M. Nediak, Optimal dynamic pricing of perishable items by a monopolist facing strategic consumers. *Prod. Oper. Manag.* **19**(1), 40–60 (2010)
- Y. Levin, M. Nediak, H. Topaloglu, Cargo capacity management with allotments and spot market demand. *Oper. Res.* **60**(2), 351–365 (2012)
- Y. Levin, M. Nediak, A. Bazhanov, Quantity premiums and discounts in dynamic pricing. *Oper. Res.* **62**(4), 846–863 (2014)
- T. Levina, Y. Levin, J. McGill, M. Nediak, Dynamic pricing with online learning and strategic consumers: an application of the aggregating algorithm. *Oper. Res.* **57**(2), 327–341 (2009a)
- T. Levina, Y. Levin, J. McGill, M. Nediak, Dynamic pricing with online learning and strategic consumers: an application of the aggregating algorithm. *Oper. Res.* **57**(2), 327–341 (2009b)
- T. Levina, Y. Levin, J. McGill, M. Nediak, Network cargo capacity management. *Oper. Res.* **59**(4), 1008–1023 (2011)

- T. Levina, Y. Levin, J. McGill, M. Nediak, Strategic consumer cooperation in a name-your-own-price channel. *Prod. Oper. Manag.* **24**(12), 1883–1900 (2015)
- H. Li, W.T. Huh, Pricing multiple products with the multinomial logit and nested logit models: concavity and implications. *Manuf. Serv. Oper. Manag.* **13**(4), 546–563 (2011)
- H. Li, W.T. Huh, Optimal pricing for short life-cycle products when customer price sensitivity varies over time. *Nav. Res. Logist.* **59**(7), 552–576 (2012)
- G. Li, P. Rusmevichientong, H. Topaloglu, The d -level nested logit model: assortment and price optimization problems. *Oper. Res.* **62**(2), 325–342 (2015)
- W.S. Lim, C.S. Tang, An auction model arising from an internet search service provider. *Eur. J. Oper. Res.* **172**(3), 956–970 (2006)
- W.S. Lim, C.S. Tang, Optimal dynamic pricing strategies in the presence of speculators and forward looking consumers: are speculators friends or foes? *Prod. Oper. Manag.* **22**(3), 571–587 (2013)
- K. Littlewood, Forecasting and control of passenger bookings, in *AGIFORS Reservations and Yield Management Study Group Annual Meeting Proceedings*, Nathanya (1972)
- Y. Liu, W.L. Cooper, Optimal dynamic pricing with patient customers. *Oper. Res.* **63**(6), 1307–1319 (2015)
- Q. Liu, G. van Ryzin, On the choice-based linear programming model for network revenue management. *Manuf. Serv. Oper. Manag.* **10**(2), 288–310 (2008a)
- Q. Liu, G.J. van Ryzin, Strategic capacity rationing to induce early purchases. *Manag. Sci.* **54**(6), 1115–1131 (2008b)
- Q. Liu, G.J. van Ryzin, Strategic capacity rationing when customers learn. *Manuf. Serv. Oper. Manag.* **13**(1), 89–107 (2011)
- I. Lobel, Dynamic pricing with heterogeneous patience levels. Technical report, New York University, New York, NY (2017)
- Y. Lu, D. Simchi-Levi, On the unimodality of the profit function of the pricing newsvendor. *Prod. Oper. Manag.* **22**(3), 615–625 (2013)
- R.D. Luce, *Individual Choice Behavior: A Theoretical Analysis* (Wiley, New York, 1959)
- R.D. Luce, The choice axiom after twenty years. *J. Math. Psychol.* **15**(3), 215–233 (1977)
- W. Ma, D. Simchi-Levi, Online resource allocation under arbitrary arrivals: optimal algorithms and tight competitive ratios. Technical report, MIT, Cambridge, MA (2017)
- W. Ma, D. Simchi-Levi, Learning valuation distributions from bundle sales. Technical report, MIT, Cambridge, MA (2018)
- W. Ma, D. Simchi-Levi, C.-P. Teo, On policies for single-leg revenue management with limited demand information. Technical report, MIT, Cambridge, MA (2018)
- C. Maglaras, J. Meissner, Dynamic pricing strategies for multiproduct revenue management problems. *Manuf. Serv. Oper. Manag.* **8**(2), 135–148 (2006)
- C. Maglaras, A. Zeevi, Pricing and design of differentiated services: approximate analysis and structural insights. *Oper. Res.* **53**(2), 242–262 (2005)
- S. Mahajan, G.J. van Ryzin, Stocking retail assortments under dynamic consumer substitution. *Oper. Res.* **49**(3), 334–351 (2001)
- P. Manzini, M. Mariotti, Stochastic choice and consideration sets. *Econometrica* **82**(3), 1153–1176 (2014)
- V. Martinez-de-Albeniz, G. Roels, Competing for shelf space. *Prod. Oper. Manag.* **20**(1), 32–46 (2011)
- V. Martinez-de-Albeniz, A. Saez-de-Tejada, Dynamic attraction models for cultural choice. Technical report, University of Navarra, Barcelona (2014)
- V. Martinez-de-Albeniz, K. Talluri, Dynamic price competition with fixed capacities. *Manag. Sci.* **27**(6), 1078–1093 (2011)
- F. Matejka, A. McKay, Rational inattention to discrete choices: a new foundation for the multinomial logit model. *Am. Econ. Rev.* **105**(1), 272–298 (2015)
- P.R. McAfee, Coarse matching. *Econometrica* **75**(5), 2025–2034 (2004)
- P.R. McAfee, V. te Velde, Dynamic pricing with constant demand elasticity. *Prod. Oper. Manag.* **17**(4), 432–438 (2008)

- D. McFadden, Conditional logit analysis of qualitative choice behavior, in *Frontiers in Econometrics*, ed. by P. Zarembka (Academic, New York, 1974), pp. 105–142
- D. McFadden, Modeling the choice of residential location, in *Spatial Interaction Theory and Planning Models*, ed. by A. Karlqvist, L. Lundqvist, F. Snickars, J. Weibull (Amsterdam, North-Holland, 1978), pp. 75–96
- D. McFadden, Econometric models for probabilistic choice among products. *J. Bus.* **53**(3), 13–29 (1980)
- D. McFadden, K. Train, Mixed MNL models for discrete response. *J. Appl. Econ.* **15**, 447–470 (2000)
- J.I. McGill, G.J. van Ryzin, Revenue management: research overview and prospects. *Transp. Sci.* **33**(2), 233–256 (1999)
- J. Meissner, A. Strauss, Network revenue management with inventory-sensitive bid prices and customer choice. *Eur. J. Oper. Res.* **216**(2), 459–468 (2012)
- J. Meissner, A. Strauss, K. Talluri, An enhanced concave program relaxation for choice network revenue management. *Prod. Oper. Manag.* **22**(1), 71–87 (2013)
- I. Mendez-Diaz, J.M. Bront, G. Vulcano, P. Zabala, A branch-and-cut algorithm for the latent-class logit assortment problem. *Discrete Appl. Math.* **164**(1), 246–263 (2014)
- A. Mersereau, D. Zhang, Markdown pricing with unknown fraction of strategic customers. *Manuf. Serv. Oper. Manag.* **14**(3), 355–370 (2012)
- V.K. Mishra, K. Natarajan, H. Tao, C.-P. Teo, Choice prediction with semidefinite optimization when utilities are correlated. *IEEE Trans. Autom. Control* **57**(10), 2450–2463 (2012)
- V.K. Mishra, K. Natarajan, D. Padmanabhan, C.-P. Teo, X. Li, On theoretical and empirical aspects of marginal distribution choice models. *Manag. Sci.* **60**(4), 1511–1531 (2014)
- A. Nalca, T. Boyaci, S. Ray, Competitive price-matching guarantees under imperfect store availability. *Quant. Mark. Econ.* **8**(3), 275–300 (2010)
- A. Nalca, T. Boyaci, S. Ray, Competitive price-matching guarantees: equilibrium analysis of the availability verification clause under demand uncertainty. *Manag. Sci.* **59**(4), 971–986 (2013)
- M. Nambiar, D. Simchi-Levi, H. Wang, Dynamic learning and pricing with model misspecification. *Manag. Sci.* (2019, forthcoming)
- J. Nasiry, I. Popescu, Advance selling when consumers regret. *Manag. Sci.* **58**(6), 1160–1177 (2012)
- K. Natarajan, M. Song, C.-P. Teo, Persistency model and its applications in choice modeling. *Manag. Sci.* **55**(3), 453–469 (2009)
- H. Nazerzadeh, G. Perakis, Technical note – nonlinear pricing competition with private capacity information. *Oper. Res.* **64**(2), 329–340 (2016)
- S. Netessine, R.A. Shumsky, Revenue management games: horizontal and vertical competition. *Manag. Sci.* **51**(5), 813–831 (2005)
- N. Osadchiy, G. Vulcano, Selling with binding reservations in the presence of strategic consumers. *Manag. Sci.* **56**(12), 2173–2190 (2010)
- O. Ozer, R. Phillips (eds.), *The Oxford Handbook of Pricing Management* (Oxford University Press, Oxford, 2012)
- O. Ozer, Y. Zheng, Markdown or everyday low price: the role of behavioral motives. *Manag. Sci.* **62**(2), 326–346 (2016)
- X.A. Pan, D. Honhon, Assortment planning for vertically differentiated products. *Prod. Oper. Manag.* **21**(2), 253–275 (2012)
- Z. Pang, O. Berman, M. Hu, Up then down: bid-price trends in revenue management. *Prod. Oper. Manag.* **24**(7), 1135–1147 (2014)
- A. Paul, J. Feldman, J.M. Davis, Assortment optimization and pricing under a nonparametric tree choice model. *Manuf. Serv. Oper. Manag.* **20**(3), 550–565 (2018)
- G. Perakis, G. Roels, Regret in the newsvendor problem with partial information. *Oper. Res.* **56**(1), 188–203 (2008)
- G. Perakis, G. Roels, Robust controls for network revenue management. *Manuf. Serv. Oper. Manag.* **12**(1), 56–76 (2010)

- G. Perakis, A. Sood, Competitive multi-period pricing for perishable products: a robust optimization approach. *Math. Program.* **107**(1–2), 295–335 (2006)
- N.C. Petruzzi, M. Dada, Pricing and the newsvendor problem: a review with extensions. *Oper. Res.* **47**(2), 183–194 (1999)
- R.L. Phillips, *Pricing and Revenue Optimization* (Stanford University Press, Stanford, 2005)
- R. Phillips, Optimizing prices for consumer credit. *J. Revenue Pricing Manag.* **12**(4), 360–377 (2013)
- R. Phillips, A.S. Simsek, G.J. van Ryzin, The effectiveness of field price discretion: empirical evidence from auto lending. *Manag. Sci.* **61**(8), 1741–4759 (2015)
- R. Phillips, A.S. Simsek, G. van Ryzin, Estimating buyer willingness-to-pay and seller reserve prices from negotiation data and the implications for pricing. Technical report, University of Texas at Dallas, Dallas, TX (2016)
- I.P.L. Png, Reservations: customer insurance in the marketing of capacity. *Mark. Sci.* **8**(3), 248–264 (1989)
- R. Ratliff, Revenue management demand distributions, in *AGIFORS Reservations and Yield Management Study Group Annual Meeting Proceedings*, Cape Town, South Africa (2005)
- W.Z. Rayfield, P. Rusmevichientong, H. Topaloglu, Approximation methods for pricing problems under the nested logit model with price bounds. *INFORMS J. Comput.* **27**(2), 335–357 (2015)
- M.I. Reiman, Q. Wang, An asymptotically optimal policy for a quantity-based network revenue management problem. *Math. Oper. Res.* **33**(2), 257–282 (2008)
- H. Richter, The differential revenue method to determine optimal seat allotments by fare type, in *Proceedings 22nd AGIFORS Symposium*, Lagonissi (1982), pp. 339–362
- L.W. Robinson, Optimal and approximate control policies for airline booking with sequential nonmonotonic fare classes. *Oper. Res.* **43**(3), 252–263 (1995)
- G. Roels, K. Fridgeirsdottir, Dynamic revenue management for online display advertising. *J. Revenue Pricing Manag.* **8**(5), 452–466 (2009)
- M. Rothstein, An airline overbooking model. *Transp. Sci.* **5**(2), 180–192 (1971)
- P. Rusmevichientong, H. Topaloglu, Robust assortment optimization under the multinomial logit choice model. *Oper. Res.* **60**(4), 865–882 (2012)
- P. Rusmevichientong, B. Van Roy, P.W. Glynn, A nonparametric approach to multiproduct pricing. *Oper. Res.* **54**(1), 82–98 (2006)
- P. Rusmevichientong, Z.-J.M. Shen, D.B. Shmoys, A PTAS for capacitated sum-of-ratios optimization. *Oper. Res. Lett.* **37**(4), 230–238 (2009)
- P. Rusmevichientong, Z.-J.M. Shen, D.B. Shmoys, Dynamic assortment optimization with a multinomial logit choice model and capacity constraint. *Oper. Res.* **58**(6), 1666–1680 (2010)
- P. Rusmevichientong, D.B. Shmoys, C. Tong, H. Topaloglu, Assortment optimization under the multinomial logit model with random choice parameters. *Prod. Oper. Manag.* **23**(11), 2023–2039 (2014)
- D. Saure, A. Zeevi, Optimal dynamic assortment planning with demand learning. *Manuf. Serv. Oper. Manag.* **15**(3), 387–404 (2013)
- D. Segev, Assortment planning with nested preferences: dynamic programming with distributions as states? *Algorithmica* **81**(1), 393–417 (2019)
- A. Sen, A.X. Zhang, Style goods pricing with demand learning. *Eur. J. Oper. Res.* **196**(3), 1058–1075 (2009)
- S. Shugan, J. Xie, Advance pricing of services and other implications of separating purchase and consumption. *J. Serv. Res.* **2**(3), 227–239 (2000)
- R. Shumsky, The Southwest effect, airline alliances and revenue management. *J. Revenue Pricing Manag.* **5**(1), 83–89 (2006)
- R.A. Shumsky, F. Zhang, Dynamic capacity management with substitution. *Oper. Res.* **57**(3), 671–684 (2009)
- D.D. Sierag, G.M. Koole, R.D. van der Mei, J.I. van der Rest, B. Zwart, Revenue management under customer choice behaviour with cancellations and overbooking. *Eur. J. Oper. Res.* **246**(1), 170–185 (2015)

- J.L. Simon, An almost practical solution to airline overbooking. *J. Trans. Econ. Policy* **2**(2), 201–202 (1968)
- R. Simpson, Theoretical concepts for capacity/yield management, in *Proceedings 25th AGIFORS Symposium* (1985), pp. 281–293
- A.S. Simsek, H. Topaloglu, Technical note – an expectation-maximization algorithm to estimate the parameters of the Markov chain choice model. *Oper. Res.* **66**(3), 748–760 (2018)
- A.G. Sogomonian, C.S. Tang, A modeling framework for coordinating promotion and production decisions within a firm. *Manag. Sci.* **39**(2), 191–203 (1993)
- Y. Song, S. Ray, T. Boyaci, Technical note: optimal dynamic joint inventory-pricing control for multiplicative demand with fixed order costs and lost sales. *Oper. Res.* **57**(1), 245–250 (2009)
- C. Stein, V.A. Truong, X. Wang, Advance reservations with heterogeneous customers. *Manag. Sci.* (2019, forthcoming)
- A.K. Strauss, K. Talluri, Tractable consideration set structures for assortment optimization and network revenue management. *Prod. Oper. Manag.* **26**(7), 1359–1368 (2017)
- N. Surasvadi, C. Tang, G. Vulcano, Using contingent markdown with reservation to profit from strategic consumer behavior. *Prod. Oper. Manag.* **26**(12), 2226–2246 (2017)
- K. Talluri, New formulations for choice network revenue management. *INFORMS J. Comput.* **26**(2), 401–413 (2014)
- K. Talluri, G. van Ryzin, An analysis of bid-price controls for network revenue management. *Manag. Sci.* **44**(11), 1577–1593 (1998)
- K. Talluri, G. van Ryzin, A randomized linear programming method for computing network bid prices. *Transp. Sci.* **33**(2), 207–216 (1999)
- K. Talluri, G. van Ryzin, Revenue management under a general discrete choice model of consumer behavior. *Manag. Sci.* **50**(1), 15–33 (2004a)
- K. Talluri, G. van Ryzin, *The Theory and Practice of Revenue Management* (Springer Science+Business Media, New York, 2004b)
- K. Talluri, F. Castejon, B. Codina, J. Magaz, Proving the performance of a new revenue management system. *J. Revenue Pricing Manag.* **9**(4), 300–312 (2010)
- C.S. Tang, R. Yin, Joint ordering and pricing strategies for managing substitutable products. *Prod. Oper. Manag.* **16**(1), 138–153 (2007)
- C.S. Tang, K. Rajaram, A. Alptekinoglu, J. Ou, The benefits of advance booking discount programs: model and analysis. *Manag. Sci.* **50**(4), 465–478 (2004)
- C. Temath, S. Polt, L. Suhi, On the robustness of the network-based revenue opportunity model. *J. Revenue Pricing Manag.* **9**(4), 341–355 (2010)
- C. Tong, H. Topaloglu, On approximate linear programming approaches for network revenue management problems. *INFORMS J. Comput.* **26**(1), 121–134 (2014)
- H. Topaloglu, A stochastic approximation method to compute bid prices in network revenue management problems. *INFORMS J. Comput.* **20**(4), 596–610 (2008)
- H. Topaloglu, On the asymptotic optimality of the randomized linear program for network revenue management. *Eur. J. Oper. Res.* **197**(3), 884–896 (2009a)
- H. Topaloglu, Using Lagrangian relaxation to compute capacity-dependent bid prices in network revenue management. *Oper. Res.* **57**(3), 637–649 (2009b)
- H. Topaloglu, Joint stocking and product offer decisions under the multinomial logit model. *Prod. Oper. Manag.* **22**(5), 1182–1199 (2013)
- K. Train, *Discrete Choice Methods with Simulation* (Cambridge University Press, New York, 2002)
- V.-A. Truong, Optimal selection of medical formularies. *J. Revenue Pricing Manag.* **13**(2), 113–132 (2014)
- C. Ulu, D. Honhon, A. Alptekinoglu, Learning consumer tastes through dynamic assortments. *Oper. Res.* **60**(4), 833–849 (2012)
- G.J. van den Berg, On the uniqueness of optimal prices set by monopolistic sellers. *J. Econ.* **141**(2), 482–491 (2007)
- G.J. van Ryzin, Models of demand. *J. Revenue Pricing Manag.* **4**(2), 204–210 (2005)

- G.J. van Ryzin, S. Mahajan, On the relationship between inventory costs and variety benefits in retail assortments. *Manag. Sci.* **45**(11), 1496–1509 (1999)
- G.J. van Ryzin, J. McGill, Yield management without forecasting or optimization: an adaptive algorithm for protection level optimization. *Manag. Sci.* **46**(6), 568–573 (2000)
- G.J. van Ryzin, K.T. Talluri, Revenue management, in *Handbook of Transportation*, ed. by R. Hall (Springer, New York, 2003)
- G.J. van Ryzin, K.T. Talluri, An introduction to revenue management, in *Tutorials in Operations Research* (INFORMS, New Orleans, 2005)
- G.J. van Ryzin, G. Vulcano, Optimal auctioning and ordering in an infinite horizon inventory-pricing system. *Oper. Res.* **52**(3), 346–367 (2004)
- G.J. van Ryzin, G. Vulcano, Simulation-based optimization of virtual nesting controls for network revenue management. *Oper. Res.* **56**(4), 865–880 (2008a)
- G.J. van Ryzin, G. Vulcano, Computing virtual nesting controls for network revenue management under customer choice behavior. *Manuf. Serv. Oper. Manag.* **10**(3), 448–467 (2008b)
- G. van Ryzin, G. Vulcano, A market discovery algorithm to estimate a general class of non-parametric choice models. *Manag. Sci.* **61**(2), 281–300 (2015)
- X. Vives, *Oligopoly Pricing: Old Ideas and New Tools* (MIT Press, Cambridge, 2001)
- T. Vossen, D. Zhang, A dynamic disaggregation approach to approximate linear programs for network revenue management. *Prod. Oper. Manag.* **24**(3), 469–487 (2015)
- G. Vulcano, G.J. van Ryzin, Estimating primary demand for substitutable products from sales transaction data. *Oper. Res.* **60**(2), 313–334 (2012)
- G. Vulcano, G.J. van Ryzin, C. Maglaras, Optimal dynamic auctions for revenue management. *Manag. Sci.* **48**(11), 1388–1407 (2002)
- G. Vulcano, G.J. van Ryzin, W. Char, Choice-based revenue management: an empirical study of estimation and optimization. *Manuf. Serv. Oper. Manag.* **12**(3), 371–392 (2010)
- D. Walczak, S. Mardan, R. Kalleisen, Customer choice, fare adjustments and the marginal expected revenue data transformation: a note on using old yield management techniques in the brave new world of pricing. *J. Revenue Pricing Manag.* **9**, 94–109 (2010)
- R. Wang, Capacitated assortment and price optimization under the multinomial logit choice model. *Oper. Res. Lett.* **40**(6), 492–497 (2012)
- R. Wang, Assortment management under the generalized attraction model with a capacity constraint. *J. Revenue Pricing Manag.* **12**(3), 254–270 (2013)
- Z. Wang, Technical note – intertemporal price discrimination via reference price effects. *Oper. Res.* **64**(2), 290–296 (2016)
- R. Wang, Consumer choice and market expansion: modeling, optimization and implementation. Technical report, Johns Hopkins University, Baltimore, MD (2018a)
- R. Wang, When prospect theory meets consumer choice models: assortment and pricing management with reference prices. *Manuf. Serv. Oper. Manag.* **20**(3), 583–600 (2018b)
- Z. Wang, M. Hu, Committed versus contingent pricing under competition. *Prod. Oper. Manag.* **23**(11), 1919–1936 (2014)
- R. Wang, O. Sahin, The impact of consumer search cost on assortment planning and pricing. *Manag. Sci.* **64**(8), 3649–3666 (2018)
- Y. Wang, Z.-J.M. Shen, Joint optimization of capacitated assortment and pricing problem under the tree logit model. Technical report, University of California, Berkeley, CA (2017)
- R. Wang, Z. Wang, Consumer choice models with endogenous network effects. *Manag. Sci.* **63**(11), 3944–3960 (2017)
- Z. Wang, Y. Ye, Hidden-city ticketing: the cause and impact. *Transp. Sci.* **50**(1), 288–305 (2016)
- Z. Wang, S. Deng, Y. Ye, Close the gaps: a learning-while-doing algorithm for single-product revenue management problems. *Oper. Res.* **62**(2), 318–331 (2014)
- J. Wang, Y. Levin, M. Nediak, Selling passes to strategic customers. Technical report, Queen's University, Kingston (2015)
- X. Wang, V.A. Truong, D. Bank, Online advance admission scheduling for services with customer preferences. Technical report, Columbia University, New York, NY (2018)

- R. Wang, M. Dada, O. Sahin, Pricing ancillary service subscriptions. *Manag. Sci.* (2019, forthcoming)
- L.R. Weatherford, S.E. Boldy, A taxonomy and research overview of perishable-asset revenue management: yield management, overbooking, and pricing. *Oper. Res.* **40**(5), 831–844 (1992)
- L.R. Weatherford, S.E. Boldy, P.E. Pfeifer, Modeling the customer arrival process and comparing decision rules in perishable asset revenue management situations. *Transp. Sci.* **27**(3), 239–251 (1993)
- C.-H. Wen, F.S. Koppelman, The generalized nested logit model. *Transp. Res. B* **35**, 627–641 (2001)
- E.L. Williamson, Airline network seat inventory control: Methodologies and revenue impacts. PhD thesis, Flight Transportation Laboratory, Massachusetts Institute of Technology, Cambridge, MA, 1992
- R.D. Wollmer, An airline seat management model for a single leg route when lower fare classes book first. *Oper. Res.* **40**(1), 26–37 (1992)
- C.P. Wright, H. Groenevelt, R.A. Shumsky, Dynamic revenue management in airline alliances. *Transp. Sci.* **44**(1), 15–37 (2010)
- J. Xie, S. Shugan, Electronic tickets, smart cards, and online prepayments: when and how to advance sell. *Mark. Sci.* **20**, 219–243 (2001)
- X. Xu, W.J. Hopp, A monopolistic and oligopolistic stochastic flow revenue management model. *Oper. Res.* **54**(6), 1098–1109 (2006)
- Z. Yan, C. Cheng, K. Natarajan, C.-P. Teo, Marginal estimation price optimization: data driven multi-product pricing problem. Technical report, Singapore University of Technology and Design, Singapore (2017)
- R. Yin, Y. Aviv, A. Pazgal, and C.S. Tang, Optimal markdown pricing: implications of inventory display formats in the presence of strategic customers. *Manag. Sci.* **55**(8), 1391–1422 (2009)
- Y. Yu, X. Chen, F. Zhang, Dynamic capacity management with general upgrading. *Oper. Res.* **63**(6), 1372–1389 (2015)
- D. Zhang, An improved dynamic programming decomposition approach for network revenue management. *Manuf. Serv. Oper. Manag.* **13**(1), 35–52 (2011)
- D. Zhang, D. Adelman, An approximate dynamic programming approach to network revenue management with customer choice. *Transp. Sci.* **43**(3), 381–394 (2009)
- D. Zhang, W. Cooper, Revenue management for parallel flights with customer choice behavior. *Oper. Res.* **53**(3), 415–431 (2005)
- D. Zhang, W.L. Cooper, Managing clearance sales in the presence of strategic customers. *Prod. Oper. Manag.* **17**(4), 416–431 (2008)
- D. Zhang, W. Cooper, Pricing substitutable flights in airline revenue management. *Eur. J. Oper. Res.* **197**(3), 848–861 (2009)
- D. Zhang, R. Kalllesen, Incorporating competitive price information in revenue management. *J. Revenue Pricing Manag.* **7**, 17–26 (2008)
- D. Zhang, Z. Lu, Assessing the value of dynamic pricing in network revenue management. *INFORMS J. Comput.* **25**(1), 102–115 (2013)
- D. Zhang, T. Vossen, Reductions of approximate linear programs for network revenue management. *Oper. Res.* **63**(6), 1352–1371 (2015)
- D. Zhang, L. Weatherford, Dynamic pricing for network revenue management: a new approach and application in the hotel industry. *INFORMS J. Comput.* **29**(1), 18–35 (2017)
- H. Zhang, C. Shi, C. Qin, C. Hua, Stochastic regret minimization for revenue management problems with nonstationary demands. *Nav. Res. Logist.* **63**(6), 433–448 (2016)
- H. Zhang, P. Rusmevichientong, H. Topaloglu, Assortment optimization under the paired combinatorial logit model. Technical report, Cornell University, Ithaca, NY (2017)
- H. Zhang, P. Rusmevichientong, H. Topaloglu, Technical note – multiproduct pricing under the generalized extreme value models with homogeneous price sensitivity parameters. *Oper. Res.* **66**(6), 1559–1570 (2018)

- W. Zhao, Y.-S. Zheng, A dynamic model for airline seat allocation with passenger diversion and no-shows. *Transp. Sci.* **35**(1), 80–98 (2001)
- W. Zhuang, M. Gumus, D. Zhang, A single-resource revenue management problem with random resource consumptions. *J. Oper. Res. Soc.* **63**, 1213–1227 (2012)
- P. Zipkin, *Foundations of Inventory Management* (McGraw-Hill/Irwin, Boston, 2000)
- S. Ziya, H. Ayhan, R.D. Folley, Relationships among three assumptions in revenue management. *Oper. Res.* **52**(5), 804–809 (2004)

Index

A

- Active set, 25
- Affine value function approximation, 71, 165
- Approximate dynamic programming, 71, 77, 199
- Arrival pattern
 - general, 23
 - low-before-high, 5
- Assortment optimization, 110, 130, 163, 208
 - competition, 292, 304
 - constrained, 142
 - dynamic, 155, 199
 - field study, 155
 - product framing, 155
 - robust, 155
- Asymptotic optimality
 - competition, 301
 - dynamic pricing, 256, 260, 268
 - network revenue management, 58
 - randomized linear program, 77
 - resolving, 77
- Attraction value, 112, 116, 132, 133
 - shadow, 114, 133

B

- Bargaining
 - Nash equilibrium, 220, 252
 - power, 220, 252
- Basic attraction model, 112
 - assortment optimization, 132, 142
- Bayesian learning, 288

Best response

- assortment optimization, 292
 - monotonicity, 294
- ## Bid-price heuristic
- dependent demand, 165, 189
 - dynamic pricing, 258
 - network revenue management, 56
 - stochastic approximation, 78, 199
 - time-dependent bid-prices, 60
- ## Booking limit, 5
- low-before-high class model, 5
 - overbooking, 84, 87

C

- Callable products, 7
- Call option, 219
- Cancellation, 88, 98
- Cannibalization, 113, 120
- Cargo revenue management, 78
- Choice based deterministic linear program, 185
- Choke-off price, 208, 246
- Column generation, 185, 199
- Competition
 - assortment optimization, 292, 304
 - dynamic pricing, 296
 - fluid approximation, 304
 - network revenue management, 304
- Competitive analysis, 38
- Compound Poisson, 30
- Consideration set, 119, 139, 155
- Constant elasticity of substitution demand, 212

D

- Dead weight loss, 218
- Dependent demand
 - field study, 199
 - heuristics, 172, 175
- Deterministic linear program, 20, 54, 60, 194
 - choice based, 184
 - overbooking, 90
- Discrete choice model, 110
- Displacement adjusted virtual nesting (DAVN), 70
- Dissimilarity parameter, 116, 118, 135
- Dynamic pricing
 - competition, 296
 - discounting, 251
 - field study, 268
 - fixed price, 256
 - holding cost, 251
 - multiple market segments, 252
 - multiple resources, 268
 - negotiation, 252
 - nonlinear pricing, 254
 - patient customers, 267
 - price guarantees, 267
 - quantity discounts, 267
 - replenishment, 251
 - risk, 267
 - single product, 246
 - strategic customer, 268
- Dynamic program
 - compound Poisson, 30, 254
 - compound Poisson process, 53
 - dependent demand, 162, 182
 - doubly stochastic Poisson process, 53
 - general arrival pattern, 23
 - monotonic fares, 27
 - monotonic prices, 256
 - multi-fare class model, 9
 - multi-product pricing, 263
 - network revenue management, 48, 182
 - overbooking, 85
 - overbooking over a network, 89
 - single product pricing, 246
- Dynamic programming decomposition, 62, 190, 199
 - overbooking, 94, 98
 - upper bound, 64, 67, 192, 193
 - via deterministic linear program, 63, 190
 - via fare allocation, 192
 - via Lagrangian relaxation, 65

E

- Efficient set, 148, 154, 163
 - EMSR, 164
 - transformation to independent demand model, 164
- EMSR
 - EMSR-a, 15, 38
 - EMSR-b, 15, 38, 179
 - network revenue management, 69
- Euler constant, 113
- Expected marginal seat revenue, 15
 - network revenue management, 69
- Exponential demand, 212
- Exponential model, 118
 - assortment optimization, 155

F

- Fare adjusted ratio, 172
- Fare allocation, 192
- Fare class, 3, 4, 9, 85
- Fare ratio, 5, 172
- Fluid approximation, 20, 54, 60, 90, 184, 194, 258, 268
- Fractional program, 136, 145

G

- Generalized attraction model, 113
 - assortment optimization, 133
- Generalized extreme value, 117
- Gumbel, 113, 231

H

- Hazard rate, 216, 221
- Heuristic, 15

I

- Independence of irrelevant alternatives (IIA), 115
- Independent demand model, 114
 - assortment optimization, 132
- Inverse demand function, 216

J

- Jensen's inequality, 209
- Joint assortment and pricing, 208
- Joint pricing and assortment optimization, 144
- Joint pricing and inventory control, 267

K

Knapsack, 20, 147

L

Lagrangian relaxation, 65, 213
 Lambert equation, 231
 Learning and earning
 ample inventory, 275
 constrained inventory, 283
 multi-product, 289
 network revenue management, 289
 pricing, 288
 social networks, 289
 Least squares, 288
 Linear demand model, 230
 pricing, 230
 Linear programming-based upper bound, 20,
 54, 60, 90, 184, 194
 Littlewood's rule, 4, 6–8, 10, 13, 15, 16, 41,
 85, 164, 170, 172, 173
 dependent demand, 172
 Log-super-modular, 235
 Luce axioms, 112, 114

M

Markov chain choice model, 120
 assortment optimization, 140
 dynamic program, 140
 equivalence to basic attraction model, 122
 Martingale
 sub-martingale, 77, 267
 super-martingale, 77, 267
 Matching, 78
 Maximum likelihood, 288
 Maximum utility model, 111
 assortment optimization, 131
 Mixture of multinomial logit models, 118
 assortment optimization, 134
 NP-hardness, 134, 154
 Monotonic fares
 dependent demand, 168
 single resource, 27
 Multi-fare class model, 9
 overbooking, 85
 Multinomial logit model, 112
 assortment optimization, 132, 142
 competition, 292, 304
 pricing, 231
 random utility maximization, 113

N

Nash equilibrium
 assortment optimization, 293
 existence, 293, 298
 feedback loop, 298
 open loop, 298
 Nest, 116, 135
 Nested-by-revenue, 132, 138
 proof, 133
 Nested logit model, 116
 assortment optimization, 135, 145
 competition, 304
 pricing, 233
 Nesting
 standard, 174
 theft, 174
 Network revenue management
 alliances, 78
 dependent demand, 182
 field study, 78
 heuristics, 69
 independent demand, 48
 robust, 78
 Newsvendor, 38
 generalized, 13
 pricing, 238
 Nonmonotonic fares, 12–13
 single resource, 12
 No-purchase, 110
 No-show, 88

O

Online display advertising, 78
 Opaque product, 238
 Optimal policy
 arbitrary arrival pattern, 26
 dependent demand, 163
 monotonic fares, 28, 169
 network revenue management, 51
 overbooking, 87
 single product pricing, 249
 single resource, 11
 Origin-destination-fare (ODF) class
 combination, 48, 182
 Outside alternative, 110
 Overbooking
 multi-fare class model, 85
 network revenue management, 89
 single fare class model, 84

P

- Pareto dominance, 295
- Parsimonious generalized attraction model, 114
- Perfect foresight, 54, 59
- Preference list, 119, 120, 154
- Price elasticity of demand, 216, 237
- Pricing, 144, 208
 - bundling, 238
 - closed-form examples, 247
 - direct discrimination, 222
 - existence and uniqueness, 215
 - finite capacity, 212
 - finite sale horizon, 214
 - generalized extreme value models, 237
 - Lagrangian relaxation, 213
 - multiple market segments, 222
 - newsvendor, 238
 - opaque product, 238
 - partial information, 238
 - personalized pricing, 222
 - reference price, 238
 - single product, 215
 - static versus dynamic, 209
- Probabilistic admission policy, 56
- Probit model, 113
- Promotion, 267
- Protection level, 5, 8, 15, 16
 - dependent demand, 170, 172
 - monotonicity, 10
 - multiple-fare class model, 10
 - stochastic approximation, 78

Q

- Quality of service, 7
- Quasi-concavity, 216, 217, 222

R

- Random consideration set model, 119
 - assortment optimization, 139
- Random costs, 209
- Randomized linear program, 59, 77
- Random utility maximization, 112, 117
- Random utility model, 111
- Reference price, 238
- Refund, 88

Regret, 276

- Representative consumer's problem, 210
- Resolving, 59, 190, 199, 259, 298
- Restaurant revenue management, 78
- Revenue management
 - upgrades, 52
 - upsells, 52
- Revenue opportunity, 22
- Root-linear demand, 212

S

- Sales-based linear program
 - basic attraction model, 144, 186
 - Markov chain choice model, 188
- Salvage value, 7
- Search cost, 155
- Shadow attraction value, 114, 133
- Social welfare, 218
- Spill rate, 7, 113
- Standard nesting, 33, 174
- Stochastic approximation, 78
 - bid-price, 78, 199
 - protection level, 78, 199
- Strategic consumer, 155
- Strategic customers, 268
- Super-modular, 228, 230
- Surplus, 123, 210
 - dynamic pricing, 262

T

- Tatonnement, 294, 295, 306, 307
 - assortment optimization, 294
- Theft nesting, 33, 174
- Totally unimodular, 142
- Transition probability, 120
- Two-fare class model, 4
 - dependent demand, 170

U

- Upgrades, 78
- Upper semi-continuous, 213, 215

W

- Williams-Daly-Zachary theorem, 123