

Bibliography

- [1] A. K. Erlang, “The theory of probabilities and telephone conversations,” *Nyt Tidsskrift for Matematik Ser. B*, vol. 20, pp. 33–39, 1909.
- [2] D. G. Kendall, “Stochastic processes occurring in the theory of queues and their analysis by the method of the imbedded Markov chain,” *The Annals of Mathematical Statistics*, vol. 24, no. 3, pp. 338–354, 1953.
- [3] A. M. Lee, “A problem of standards of service,” in *Applied Queueing Theory*, pp. 180–206, Springer, 1966.
- [4] D. Lucantoni, K. Meier-Hellstern, and M. Neuts, “A single-server queue with server vacations and a class of non-renewal arrival processes,” *Advances in Applied Probability*, vol. 22, no. 3, pp. 676–705, 1990.
- [5] J. Medhi, *Stochastic models in queueing theory*. 2nd edition, Academic Press, 2006.
- [6] N. Bailey, “On queueing processes with bulk service,” *Journal of the Royal Statistical Society. Series B (Methodological)*, vol. 16, no. 1, pp. 80–87, 1954.
- [7] M. F. Neuts, “A general class of bulk queues with Poisson input,” *The Annals of Mathematical Statistics*, vol. 38, no. 3, pp. 759–770, 1967.
- [8] W. Powell and P. Humblet, “The bulk service queue with a general control strategy: theoretical analysis and a new computational procedure,” *Operations Research*, vol. 34, no. 2, pp. 267–275, 1986.
- [9] N. Kim, K. Chae, and M. Chaudhry, “An invariance relation and a unified method to derive stationary queue-length distributions,” *Operations Research*, vol. 52, no. 5, pp. 756–764, 2004.
- [10] K. C. Madan, “An $M/G/1$ queue with second optional service,” *Queueing Systems*, vol. 34, no. 1-4, pp. 37–46, 2000.

-
- [11] Y. Levy and U. Yechiali, "Utilization of idle time in an $M/G/1$ queueing system," *Management Science*, vol. 22, no. 2, pp. 202–211, 1975.
- [12] L. D. Servi and S. G. Finn, " $M/M/1$ queues with working vacations ($M/M/1/WV$)," *Performance Evaluation*, vol. 50, no. 1, pp. 41–52, 2002.
- [13] S. K. Bar-Lev, M. Parlar, D. Perry, W. Stadjé, and F. A. Van der Duyn Schouten, "Applications of bulk queues to group testing models with incomplete identification," *European Journal of Operational Research*, vol. 183, no. 1, pp. 226–237, 2007.
- [14] L. Abolnikov and A. Dukhovny, "Queueing processes and optimization problems in quality control systems with a group-individual testing procedure," *Engineering Simulation*, vol. 16, no. 3, pp. 165–178, 1999.
- [15] L. Abolnikov and A. Dukhovny, "Optimization in HIV screening problems," *Journal of Applied Mathematics and Stochastic Analysis*, vol. 16, no. 4, pp. 361–374, 2003.
- [16] S. K. Bar-Lev, H. Blanc, O. Boxma, G. Janssen, and D. Perry, "Tandem queues with impatient customers for blood screening procedures," *Methodology and Computing in Applied Probability*, vol. 15, no. 2, pp. 423–451, 2013.
- [17] D. Claeys, J. Walraevens, K. Laevens, and H. Bruneel, "A queueing model for general group screening policies and dynamic item arrivals," *European Journal of Operational Research*, vol. 207, no. 2, pp. 827–835, 2010.
- [18] A. Borthakur, "A Poisson queue with a general bulk service rule," *J. Assam Sci. Soc.*, vol. 14, pp. 162–167, 1971.
- [19] J. Medhi, "Waiting time distribution in a Poisson queue with a general bulk service rule," *Management Science*, vol. 21, no. 7, pp. 777–782, 1975.
- [20] G. L. Curry and R. M. Feldman, "An $M/M/1$ queue with a general bulk service rule," *Naval Research Logistics Quarterly*, vol. 32, no. 4, pp. 595–603, 1985.
- [21] M. Jacob and T. Madhusoodanan, "Transient solution for a finite capacity $M/G^{(a,b)}/1$ queueing system with vacations to the server," *Queueing Systems*, vol. 2, no. 4, pp. 381–386, 1987.
- [22] M. Neuts, "Transform-free equations for the stationary waiting time distributions in the queue with Poisson arrivals and bulk services," *Annals of Operations Research*, vol. 8, no. 1, pp. 1–26, 1987.

-
- [23] D. Jayaraman, R. Nadarajan, and M. Sitrarasu, "A general bulk service queue with arrival rate dependent on server breakdowns," *Applied Mathematical Modelling*, vol. 18, no. 3, pp. 156–160, 1994.
- [24] H. W. Lee, S. S. Lee, and K. C. Chae, "A fixed-size batch service queue with vacations," *International Journal of Stochastic Analysis*, vol. 9, no. 2, pp. 205–219, 1996.
- [25] G. K. Reddy and R. Anitha, "Markovian bulk service queue with delayed vacations," *Computers & Operations Research*, vol. 25, no. 12, pp. 1159–1166, 1998.
- [26] S. Ho Chang, D. Won Choi, and T.-S. Kim, "Performance analysis of a finite-buffer bulk-arrival and bulk-service queue with variable server capacity," *Stochastic Analysis and Applications*, vol. 22, no. 5, pp. 1151–1173, 2004.
- [27] A. D. Banik, "Queueing analysis and optimal control of $BMAP/G^{(a,b)}/1/N$ and $BMAP/MSP^{(a,b)}/1/N$ systems," *Computers & Industrial Engineering*, vol. 57, no. 3, pp. 748–761, 2009.
- [28] A. Banerjee and U. C. Gupta, "Reducing congestion in bulk-service finite-buffer queueing system using batch-size-dependent service," *Performance Evaluation*, vol. 69, no. 1, pp. 53 – 70, 2012.
- [29] A. Banerjee, U. C. Gupta, and K. Sikdar, "Analysis of finite-buffer bulk-arrival bulk-service queue with variable service capacity and batch-size-dependent service," *International Journal of Mathematics in Operational Research*, vol. 5, no. 3, pp. 358–386, 2013.
- [30] A. D. Banik, "Single server queues with a batch Markovian arrival process and bulk renewal or non-renewal service," *Journal of Systems Science and Systems Engineering*, vol. 24, no. 3, pp. 337–363, 2015.
- [31] U. C. Gupta and S. Pradhan, "Queue length and server content distribution in an infinite-buffer batch-service queue with batch-size-dependent service," *Advances in Operations Research*, vol. 2015, 2015. DOI: 10.1155/2015/102824.
- [32] S. Pradhan, U. C. Gupta, and S. K. Samanta, "Analyzing an infinite buffer batch arrival and batch service queue under batch-size-dependent service policy," *Journal of the Korean Statistical Society*, vol. 45, no. 1, pp. 137 – 148, 2016.

- [33] S. Pradhan, U. C. Gupta, and S. K. Samanta, "Queue-length distribution of a batch service queue with random capacity and batch size dependent service: $M/G_r^Y/1$," *OPSEARCH*, vol. 53, no. 2, 2016.
- [34] S. Pradhan and U. C. Gupta, "Analysis of an infinite-buffer batch-size-dependent service queue with Markovian arrival process," *Annals of Operations Research*, vol. 277, no. 2, pp. 161–196, 2019.
- [35] S. Pradhan and U. C. Gupta, "Modeling and analysis of an infinite-buffer batch-arrival queue with batch-size-dependent service: $M^X/G_n^{(a,b)}/1$," *Performance Evaluation*, vol. 108, pp. 16–31, 2017. DOI: 10.1016/j.peva.2016.12.002.
- [36] G. K. Gupta and A. Banerjee, "On finite buffer bulk arrival bulk service queue with queue length and batch size dependent service," *International Journal of Applied and Computational Mathematics*, vol. 5, no. 2, pp. 1–20, 2019.
- [37] S. Pradhan and U. C. Gupta, "Stationary queue and server content distribution of a batch-size-dependent service queue with batch Markovian arrival process: $BMAP/G_n^{(a,b)}/1$," *Communications in Statistics-Theory and Methods*, vol. 51, no. 13, pp. 4330–4357, 2022.
- [38] B. Bank and S. K. Samanta, "Analytical and computational studies of the $BMAP/G^{(a,Y)}/1$ queue," *Communications in Statistics-Theory and Methods*, vol. 50, no. 15, pp. 3586–3614, 2021.
- [39] S. K. Samanta and B. Bank, "Analysis of stationary queue-length distributions of the $BMAP/R^{(a,b)}/1$ queue," *International Journal of Computer Mathematics: Computer Systems Theory*, vol. 5, no. 3, pp. 198–223, 2020.
- [40] V. Goswami, M. Chaudhry, and A. D. Banik, "Sojourn-time distribution for $M/G^a/1$ queue with batch service of fixed size-revisited," *Methodology and Computing in Applied Probability*, pp. 1–16, 2022, DOI: 10.1007/s11009-022-09963-0.
- [41] U. C. Gupta and V. Goswami, "Performance analysis of finite buffer discrete-time queue with bulk service," *Computers & Operations Research*, vol. 29, no. 10, pp. 1331–1341, 2002.
- [42] M. L. Chaudhry and S. H. Chang, "Analysis of the discrete-time bulk-service queue $Geo/G^Y/1/N + B$," *Operations Research Letters*, vol. 32, no. 4, pp. 355–363, 2004.

- [43] A. J. Janssen and J. Van Leeuwen, “Analytic computation schemes for the discrete-time bulk service queue,” *Queueing Systems*, vol. 50, no. 2, pp. 141–163, 2005.
- [44] V. Goswami, J. Mohanty, and S. Samanta, “Discrete-time bulk-service queues with accessible and non-accessible batches,” *Applied Mathematics and Computation*, vol. 182, no. 1, pp. 898 – 906, 2006.
- [45] D. Claeys, B. Steyaert, J. Walraevens, K. Laevens, and H. Bruneel, “Analysis of a versatile batch-service queueing model with correlation in the arrival process,” *Performance Evaluation*, vol. 70, no. 4, pp. 300–316, 2013.
- [46] M. Yu and A. S. Alfa, “Algorithm for computing the queue length distribution at various time epochs in $DMAP/G^{(1,a,b)}/1/N$ queue with batch-size-dependent service time,” *European Journal of Operational Research*, vol. 244, no. 1, pp. 227–239, 2015.
- [47] Y. Lee, “Discrete-time bulk queueing system with variable service capacity depending on previous service time,” *Mathematical Problems in Engineering*, vol. 2015, pp. 1–6, 2015. DOI: 10.1155/2015/482179.
- [48] G. K. Gupta and A. Banerjee, “Analysis of infinite buffer general bulk service queue with state dependent balking,” *International Journal of Operational Research*, vol. 40, no. 2, pp. 137–161, 2021.
- [49] M. L. Chaudhry and J. G. Templeton, *First course in bulk queues*. A Wiley-interscience publication, Wiley, New York, 1983.
- [50] J. Medhi, *Stochastic Models in Queueing Theory*. Academic Press, 2002.
- [51] M. L. Chaudhry and J. Gai, “A simple and extended computational analysis of $M/G_j^{(a,b)}/1$ and $M/G_j^{(a,b)}/1/(B + b)$ queues using roots,” *INFOR: Information Systems and Operational Research*, vol. 50, no. 2, pp. 72–79, 2012.
- [52] R. Germs and N. van Foreest, “Analysis of finite-buffer state-dependent bulk queues,” *OR Spectrum*, vol. 35, no. 3, pp. 563–583, 2013.
- [53] D. Claeys, B. Steyaert, J. Walraevens, K. Laevens, and H. Bruneel, “Tail probabilities of the delay in a batch-service queueing model with batch-size dependent service times and a timer mechanism,” *Computers & Operations Research*, vol. 40, no. 5, pp. 1497–1505, 2013.

- [54] A. Banerjee, K. Sikdar, and U. C. Gupta, "Computing system length distribution of a finite-buffer bulk-arrival bulk-service queue with variable server capacity," *International Journal of Operational Research*, vol. 12, no. 3, pp. 294–317, 2011.
- [55] G. K. Gupta and A. Banerjee, "On $M/G^{(a,b)}/1/N$ queue with batch size-and queue length-dependent service," in *International Conference on Mathematics and Computing*, pp. 249–262, Springer, 2018.
- [56] S. Pradhan, "On the distribution of an infinite-buffer queueing system with versatile bulk-service rule under batch-size-dependent service policy: $M/G_n^{(a,Y)}/1$," *International Journal of Mathematics in Operational Research*, vol. 16, no. 3, pp. 407–434, 2020.
- [57] U. C. Gupta, N. Kumar, S. Pradhan, F. P. Barbhuiya, and M. L. Chaudhry, "Complete analysis of a discrete-time batch service queue with batch-size-dependent service time under correlated arrival process: $D - MAP/G_n^{(a,b)}/1$," *RAIRO-Operations Research*, vol. 55, no. 3, pp. 1231–1256, 2021.
- [58] A. Dudin and S. Chakravarthy, "Optimal hysteretic control for the $BMAP/G/1$ system with single and group service modes," *Annals of Operations Research*, vol. 112, no. 1-4, pp. 153–169, 2002.
- [59] U. C. Gupta and P. V. Laxmi, "Analysis of the $MAP/G^{(a,b)}/1/N$ queue," *Queueing Systems*, vol. 38, no. 2, pp. 109–124, 2001.
- [60] G. Singh, U. C. Gupta, and M. L. Chaudhry, "Computational analysis of bulk service queue with Markovian arrival process: $MAP/R^{(a,b)}/1$ queue," *OPSEARCH*, vol. 50, no. 4, pp. 582–603, 2013.
- [61] A. Banerjee, U. C. Gupta, and S. R. Chakravarthy, "Analysis of a finite-buffer bulk-service queue under Markovian arrival process with batch-size-dependent service," *Computers & Operations Research*, vol. 60, pp. 138 – 149, 2015.
- [62] M. L. Chaudhry and U. C. Gupta, "Analysis of a finite-buffer bulk-service queue with discrete-Markovian arrival process: $D - MAP/G^{(a,b)}/1/N$," *Naval Research Logistics (NRL)*, vol. 50, no. 4, pp. 345–363, 2003.
- [63] G. Briere and M. L. Chaudhry, "Computational analysis of single-server bulk-arrival queues $M^X/G/1$," *Computers & Operations Research*, vol. 15, no. 3, pp. 283–292, 1988.

-
- [64] K. C. Madan and E. Malalla, “On a batch arrival queue with second optional service, random breakdowns, delay time for repairs to start and restricted availability of arrivals during breakdown periods,” *Journal of Mathematical and Computational Science*, vol. 7, no. 1, pp. 175–188, 2016.
- [65] A. Banik, “The infinite-buffer single server queue with a variant of multiple vacation policy and batch Markovian arrival process,” *Applied Mathematical Modelling*, vol. 33, no. 7, pp. 3025–3039, 2009.
- [66] F. van der Duyn Schouten, “An $M/G/1$ queueing model with vacation times,” *Zeitschrift für Operations Research*, vol. 22, no. 1, pp. 95–105, 1978.
- [67] M. Scholl and L. Kleinrock, “On the $M/G/1$ queue with rest periods and certain service-independent queueing disciplines,” *Operations Research*, vol. 31, no. 4, pp. 705–719, 1983.
- [68] C. M. Harris and W. G. Marchal, “State dependence in $M/G/1$ server-vacation models,” *Operations Research*, vol. 36, no. 4, pp. 560–565, 1988.
- [69] H. Takagi, “Time-dependent analysis of $M/G/1$ vacation models with exhaustive service,” *Queueing Systems*, vol. 6, no. 1, pp. 369–389, 1990.
- [70] H. Li and Y. Zhu, “Analysis of $M/G/1$ queues with delayed vacations and exhaustive service discipline,” *European Journal of Operational Research*, vol. 92, no. 1, pp. 125–134, 1996.
- [71] E. Altman and P. Nain, “Optimality of a threshold policy in the $M/M/1$ queue with repeated vacations,” *Mathematical Methods of Operations Research*, vol. 44, no. 1, pp. 75–96, 1996.
- [72] F. Karaesmen and S. Gupta, “The finite capacity $GI/M/1$ queue with server vacations,” *Journal of the Operational Research Society*, vol. 47, no. 6, pp. 817–828, 1996.
- [73] A. Frey and Y. Takahashi, “An explicit solution for an $M/GI/1/N$ queue with vacation time and exhaustive service discipline,” *Journal of the Operations Research Society of Japan*, vol. 41, no. 3, pp. 430–441, 1998.
- [74] Y. W. Shin and C. E. Pearce, “The $BMAP/G/1$ vacation queue with queue-length dependent vacation schedule,” *The ANZIAM Journal*, vol. 40, no. 2, pp. 207–221, 1998.

- [75] T. Cong, "Application of the method of collective marks to some $M/G/1$ vacation models with exhaustive service," *Queueing Systems*, vol. 16, no. 1-2, pp. 67–81, 1994.
- [76] U. C. Gupta, A. D. Banik, and S. S. Pathak, "Complete analysis of $MAP/G/1/N$ queue with single (multiple) vacation(s) under limited service discipline," *International Journal of Stochastic Analysis*, vol. 2005, no. 3, pp. 353–373, 2005.
- [77] U. C. Gupta and K. Sikdar, "Computing queue length distributions in $MAP/G/1/N$ queue under single and multiple vacation," *Applied Mathematics and Computation*, vol. 174, no. 2, pp. 1498–1525, 2006.
- [78] B. Mao, F. Wang, and N. Tian, "Fluid model driven by an $M/M/1$ queue with multiple vacations and N -policy," *Journal of Applied Mathematics and Computing*, vol. 38, no. 1-2, pp. 119–131, 2012.
- [79] K. Kalidass, J. Gnanaraj, S. Gopinath, and R. Kasturi, "Transient analysis of an $M/M/1$ queue with a repairable server and multiple vacations," *International Journal of Mathematics in Operational Research*, vol. 6, no. 2, pp. 193–216, 2014.
- [80] D. Yang and J. Ke, "Cost optimization of a repairable $M/G/1$ queue with a randomized policy and single vacation," *Applied Mathematical Modelling*, vol. 38, no. 21-22, pp. 5113–5125, 2014.
- [81] W. Wu, Y. Tang, and M. Yu, "Analysis of an $M/G/1$ queue with N -policy, single vacation, unreliable service station and replaceable repair facility," *OPSEARCH*, vol. 52, no. 4, pp. 670–691, 2015.
- [82] W. Kempa, "Transient workload distribution in the $M/G/1$ finite-buffer queue with single and multiple vacations," *Annals of Operations Research*, vol. 239, no. 2, pp. 381–400, 2016.
- [83] W. M. Kempa and R. Marjasz, "Distribution of the time to buffer overflow in the $M/G/1/N$ -type queueing model with batch arrivals and multiple vacation policy," *Journal of the Operational Research Society*, vol. 71, no. 3, pp. 447–455, 2020.
- [84] H. W. Lee, S. S. Lee, K. C. Chae, and R. Nadarajan, "On a batch service queue with single vacation," *Applied Mathematical Modelling*, vol. 16, no. 1, pp. 36–42, 1992.
- [85] U. C. Gupta and K. Sikdar, "A finite capacity bulk service queue with single vacation and Markovian arrival process," *International Journal of Stochastic Analysis*, vol. 2004, no. 4, pp. 337–357, 1990.

-
- [86] U. C. Gupta and K. Sikdar, "The finite-buffer $M/G/1$ queue with general bulk-service rule and single vacation," *Performance Evaluation*, vol. 57, no. 2, pp. 199–219, 2004.
- [87] K. Sikdar and U. C. Gupta, "Analytic and numerical aspects of batch service queues with single vacation," *Computers & Operations Research*, vol. 32, no. 4, pp. 943–966, 2005.
- [88] M. Haridass and R. Arumuganathan, "Analysis of a $M^X/G(a,b)/1$ queueing system with vacation interruption," *RAIRO-Operations Research*, vol. 46, no. 4, pp. 305–334, 2012.
- [89] G. Ayyappan and S. Karpagam, "An $M^{[X]}/G^{(a,b)}/1$ queueing system with server breakdown and repair, stand-by server and single vacation," *International Journal of Mathematics in Operational Research*, vol. 14, no. 2, pp. 221–235, 2019.
- [90] R. Nadarajan and A. Subramanian, "A general bulk service queue with server's vacation," *Operational Research in Management Systems*, pp. 127–135, 1984.
- [91] B. D. Choi and D. H. Han, " $G/M^{(a,b)}/1$ queues with server vacations," *Journal of the Operations Research Society of Japan*, vol. 37, no. 3, pp. 171–181, 1994.
- [92] M. Jain and P. Singh, "State dependent bulk service queue with delayed vacations," *Engineering Sciences*, vol. 16, no. 1, pp. 3–15, 2005.
- [93] S. Jeyakumar and B. Senthilnathan, "Modelling and analysis of a $M^X/G^{(a,b)}/1$ queue with multiple vacations, setup time, closedown time and server breakdown without interruption," *International Journal of Operational Research*, vol. 19, no. 1, pp. 114–139, 2014.
- [94] S. Jeyakumar and R. Arumuganathan, "A non-Markovian bulk queue with multiple vacations and control policy on request for re-service," *Quality Technology & Quantitative Management*, vol. 8, no. 3, pp. 253–269, 2011.
- [95] M. Haridass and R. Arumuganathan, "A batch service queueing system with multiple vacations, setup time and servers choice of admitting reservice," *International Journal of Operational Research*, vol. 14, no. 2, pp. 156–186, 2012.
- [96] O. Ibe, "M/G/1 vacation queueing systems with server timeout," *American Journal of Operations Research*, vol. 5, no. 2, pp. 77–88, 2015.

- [97] G. Ayyappan and T. Deepa, "Analysis of batch arrival bulk service queue with additional optional service multiple vacation and setup time," *International Journal of Mathematics in Operational Research*, vol. 15, no. 1, pp. 1–25, 2019.
- [98] S. K. Samanta, M. L. Chaudhry, and U. C. Gupta, "Discrete-time $Geo^X/G^{(a,b)}/1/N$ queues with single and multiple vacations," *Mathematical and Computer Modelling*, vol. 45, no. 1-2, pp. 93–108, 2007.
- [99] K. Sikdar and U. C. Gupta, "On the batch arrival batch service queue with finite buffer under servers vacation: $M^X/G^Y/1/N$ queue," *Computers & Mathematics with Applications*, vol. 56, no. 11, pp. 2861–2873, 2008.
- [100] K. Sikdar and S. K. Samanta, "Analysis of a finite buffer variable batch service queue with batch Markovian arrival process and servers vacation," *OPSEARCH*, vol. 53, no. 3, pp. 553–583, 2016.
- [101] G. K. Gupta, A. Banerjee, and U. C. Gupta, "On finite-buffer batch-size-dependent bulk service queue with queue-length dependent vacation," *Quality Technology & Quantitative Management*, vol. 17, no. 5, pp. 501–527, 2020.
- [102] S. H. Chang and D. W. Choi, "Performance analysis of a finite-buffer discrete-time queue with bulk arrival, bulk service and vacations," *Computers & Operations Research*, vol. 32, no. 9, pp. 2213–2234, 2005.
- [103] N. Nandy and S. Pradhan, "On the joint distribution of an infinite-buffer discrete-time batch-size-dependent service queue with single and multiple vacations," *Quality Technology & Quantitative Management*, vol. 18, no. 4, pp. 432–467, 2021.
- [104] B. T. Doshi, "Queueing systems with vacations – a survey," *Queueing Systems*, vol. 1, no. 1, pp. 29–66, 1986.
- [105] J. C. Ke, C. H. Wu, and Z. G. Zhang, "Recent developments in vacation queueing models: a short survey," *International Journal of Operations Research*, vol. 7, no. 4, pp. 3–8, 2010.
- [106] H. Takagi, "Queueing analysis: A foundation of performance evaluation," *Vol. 1, Vacation and Priority*, North-Holland, New York, 1991.
- [107] N. Tian and Z. G. Zhang, *Vacation Queueing Models: Theory and Applications*, vol. 93. Springer Science & Business Media, 2006.

- [108] M. Thangaraj and P. Rajendran, “Analysis of batch arrival queueing system with two types of service and two types of vacation,” *International Journal of Pure and Applied Mathematics*, vol. 117, no. 11, pp. 263–272, 2017.
- [109] A. D. Banik, “Analysis of queue-length dependent vacations and P-limited service in $BMAP/G/1/N$ systems: Stationary distributions and optimal control.,” *International Journal of Stochastic Analysis*, vol. 2013, 2013, DOI: 10.1155/2013/196372.
- [110] B. Lavanya, R. Vennila, M. Sankoh, *et al.*, “Mathematical modelling of $M^X/G^{(a,b)}/1$ bulk service queue model with two vacations and setup time in ceramic technology,” *Mathematical Problems in Engineering*, vol. 2022, 2022, DOI: 10.1155/2022/2771494.
- [111] J. Medhi, “A single server Poisson input queue with a second optional channel,” *Queueing Systems*, vol. 42, no. 3, pp. 239–242, 2002.
- [112] J. Al-Jararha and K. C. Madan, “An $M/G/1$ queue with second optional service with general service time distribution,” *International Journal of Information and Management Sciences*, vol. 14, no. 2, pp. 47–56, 2003.
- [113] J. Wang, “An $M/G/1$ queue with second optional service and server breakdowns,” *Computers & Mathematics with Applications*, vol. 47, no. 10-11, pp. 1713–1723, 2004.
- [114] G. Choudhury and L. Tadj, “An $M/G/1$ queue with two phases of service subject to the server breakdown and delayed repair,” *Applied Mathematical Modelling*, vol. 33, no. 6, pp. 2699–2709, 2009.
- [115] G. Choudhury and M. Paul, “A batch arrival queue with a second optional service channel under N-policy,” *Stochastic Analysis and Applications*, vol. 24, no. 1, pp. 1–21, 2006.
- [116] F. A. Maraghi, K. C. Madan, and K. Darby-Dowman, “Batch arrival vacation queue with second optional service and random system breakdowns,” *Journal of Statistical Theory and Practice*, vol. 4, no. 1, pp. 137–153, 2010.
- [117] G. Ayyappan and S. Shyamala, “Transient solution of $M^{[X]}/G/1$ with second optional service, Bernoulli schedule server vacation and random break downs,” *International Journal of Management & Information Technology*, vol. 3, no. 3, pp. 45–55, 2013.
- [118] G. Ayyappan, G. Devipriya, and A. M. Ganapathi, “Analysis of single server batch service queueing system under multiple vacations with second optional service,” *International Journal of Mathematical Archive*, vol. 5, no. 2, pp. 126–144, 2014.

- [119] G. Ayyappan and R. Supraja, “Batch arrival bulk service queue with unreliable server, second optional service, two different vacations and restricted admissibility policy,” *Applications and Applied Mathematics: An International Journal (AAM)*, vol. 13, no. 2, pp. 600–627, 2018.
- [120] C. J. Singh, S. Kaur, and M. Jain, “Analysis of bulk queue with additional optional service, vacation and unreliable server,” *International Journal of Mathematics in Operational Research*, vol. 14, no. 4, pp. 517–540, 2019.
- [121] P. V. Laxmi and A. A. George, “Transient and steady state analysis of $M/M^{(b)}/1$ queue with second optional service,” *Journal of Industrial and Production Engineering*, vol. 39, no. 4, pp. 306–316, 2022.
- [122] T. Deepa and A. Azhagappan, “Analysis of state dependent $M^{[X]}/G^{(a,b)}/1$ queue with multiple vacation second optional service and optional re-service,” *International Journal of Operational Research*, vol. 44, no. 2, pp. 254–278, 2022.
- [123] G. K. Gupta, *Studies on some state dependent bulk service queues with balking or queue length dependent vacation*. PhD thesis, IIT (BHU), Varanasi, 2018.
- [124] I. Yelin, N. Aharony, E. S. Tamar, A. Argoetti, E. Messer, D. Berenbaum, E. Shafran, A. Kuzli, N. Gandali, O. Shkedi, *et al.*, “Evaluation of covid-19 rt-qpcr test in multi sample pools,” *Clinical Infectious Diseases*, vol. 71, no. 16, pp. 2073–2078, 2020.
- [125] “Pool testing of SARS-CoV-2 samples increases worldwide test capacities many times over.” Retrieved from <https://aktuelles.uni-frankfurt.de/englisch/pool-testing-of-sars-cov-02-samples-increases-worldwide-test-capacities-many-times-over/>.
- [126] W. K. Chow and C. L. Chow, “A discussion on implementing pooling detection tests of novel coronavirus (sars-cov-2) for a large population,” *Epidemiology & Infection*, vol. 149, no. e17, pp. 1–6, 2021.
- [127] G. Ayyappan and S. Karpagam, “Analysis of a bulk service queue with unreliable server, multiple vacation, overloading and stand-by server,” *International Journal of Mathematics in Operational Research*, vol. 16, no. 3, pp. 291–315, 2020.
- [128] G. Ayyappan and T. Deepa, “Analysis of batch arrival bulk service queue with multiple vacation closedown essential and optional repair,” *Applications and Applied Mathematics: An International Journal (AAM)*, vol. 13, no. 2, pp. 578–598, 2018.

- [129] L. Abolnikov and A. Dukhovny, “Markov chains with transition delta-matrix: ergodicity conditions, invariant probability measures and applications,” *Journal of Applied Mathematics and Stochastic Analysis*, vol. 4, no. 4, pp. 333–355, 1991.

List of Publications

(Published)

1. G. K. Tamrakar and A. Banerjee, “On steady-state joint distribution of an infinite buffer batch service Poisson queue with single and multiple vacation”, *OPSEARCH*, vol. 57, no. 4, pp 1337–1373, 2020.
2. G. K. Tamrakar and A. Banerjee, “Study on Infinite Buffer Batch Size Dependent Bulk Service Queue with Queue Length Dependent Vacation”, *International Journal of Applied and Computational Mathematics*, vol. 7, no. 6, pp 1–25, 2021.
3. G. K. Tamrakar and A. Banerjee, “On steady state analysis of an infinite capacity $M^X/G^{(a,Y)}/1$ queue with optional service and queue length dependent single (multiple) vacation”, *Queueing Models and Service Management*, vol. 6, no. 1, pp 27–61, 2023.

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1. G. K. Tamrakar and A. Banerjee, “On state dependent batch service queue with single and multiple vacation under Markovian arrival process”, *International Journal of Operational Research*, 2022.