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CONTROL CHART FOR RANDOM WAITING TIME USING POWER TRANSFORMATION FOR $(M/M/1)$: $(\infty$/FCFS) MODEL

M. V. KHAPARDE[1] AND S. D. DHABE[2]

[1] Department of Statistics, PGTD,
R.T.M. Nagpur University Campus,
Amravati Road, Nagpur (M.S.), India
[2] Department of Statistics,
Govt. Institute Of Science, Nagpur (M.S.), India

Abstract

To monitor the waiting time of the queuing model, in this paper control chart for the random waiting time is constructed using Nelson's power transformation. The average run length for this chart is obtained. The control limits so obtained tells about the out of control condition of the queuing system from the signal generated by the control chart. Whenever the system goes out of control, it indicates the change in input parameters i.e. arrival rate, service rate or both. By the display of these control limits, the performance of the system can be improved.

Key Words : *False alarm rate, Power Transformation, Average queue length, Average run length, Average waiting time, Geometric distribution, Weibull distribution.*

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