



QUEUING ANALYSIS OF AUTOMATIC TELLER MACHINE (ATM) SERVICES IN INDIA

Prabha Rohatgi* and Nidhi Shrivastava¹

School of Studies in Statistics, Pt. Ravishankar Shukla University, Raipur – 492 010, India.

¹Rungta College of Engineering & Technology, Bhilai, India.

E-mail : rohatgi.prabha@gmail.com

Abstract

In this paper, we have attempt to determine the customer service standards for the ATMs of Nationalized and Private banks of India by using queuing theory. The arrival of customers is assumed to be Poisson but the service time distribution is non-Exponential because the time taken by customers is varying and random. Under this situation, $M/G/1/\infty$ queuing model with unlimited queue length is applied to compute the waiting time and queue length to set the customer service standards at ATMs and to determine which ATM locations are overloaded or congested? Waiting time is considered as customer's cost associated with getting service by ATM, the total cost is the sum of the waiting time and 'travelling time associated with to and fro journey to the ATM booth'. A numerical example is given for illustration. The model suggests that the percentage of lost customers can be adopted as the service standard instead of line wait.

Key words : $M/G/1/\infty$ queue, ATM service delay, Simulation method.