

Passenger Arrival and Waiting Patterns at Terminal Service Centers at Bandaranaike International Airport

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Optimizing passenger movements through an airport terminal is one of the important accomplishments to reach in efficient functioning of an airport. Minimizing delays at critical service centers within terminal such as ticket counters, immigration, baggage claim and security checks could improve the passenger throughput.

Arrival pattern of passengers at different service centers could vary depending on the airport location and the operating strategy of the terminal. Knowledge on arrival and waiting patterns at the key service centers will help modeling the passenger flow through a terminal. This paper presents passenger arrival and waiting patterns at selected terminal service centers at Bandaranaike International Airport, Katunayake, based on surveys carried out over twelve weeks period.

Data collection was done by observing the various terminal service centers such as ticket counters, immigration, baggage claim, and security checks over around three months period. Based on the flight schedule in each month at BIA, data on rush hours (night shift) and non-rush hours (day shift) of rush days and non-rush days were collected.

It can be seen that arrival pattern at ticket counters follows normal distribution and the passengers' average waiting time at the ticket counters is around 120 seconds with standard deviation of 67.8 seconds. The service time at the check-in-counters follows lognormal distribution with mean 191.7 seconds and standard deviation of 131.3 seconds and the passengers' waiting time at the check-in-counters follows lognormal distribution with mean 1101.7 seconds and standard deviation 1087.3 seconds. A lognormal distribution is a continuous probability distribution of a random variable whose logarithm is normally distributed.

Key words: Normal distribution, lognormal distribution, continuous probability distribution

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