**A SIMULATION-BASED ANALYSIS OF CUSTOMER QUEUES AT THE VEHICLE REVENUE LICENSE DIVISION- DIVISIONAL SECRETARIAT MATALE**

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**EEX5362 – Performance Modeling**

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# **Identified Scenario – High Level**

The Divisional Secretariat provides many services to the public. Among them, issuing vehicle revenue licenses is one of the top priority services. However, this service is offered between 8.30 AM to 3.00 PM in the divisional secretary's offices in Sri Lanka.

More than 300 people come to get services in one day at the Divisional Secretariat, Matale, which results in a long queue. There are two counters, but one queue. Services are provided based on a First-Come-First-Served manner. Observation noticed that counters sometimes will be closed, sometimes will be open, regardless of the queue. This long queue and longer waiting time, and service time result in frustration, dissatisfaction, and queue jumping, which leads to wasting more time. Moreover, power cuts during the service time also increase the customer waiting time and the service duration due to a lack of a power backup facility within the premises.

Administrators observed it and added additional counters, but they can consider and analyze the customer waiting time, service bottlenecks, or service durations to improve efficiency, hence customer satisfaction.

This study will help to identify the customer waiting time, service duration, and system bottlenecks by simulating with the assistance of real data, and will be able to provide meaningful outcomes for both the public and the administration of the Divisional Secretariat Matale.

# **Performance Objectives**

This study will analyze and simulate,

* Minimizing response time: Cut down the total time a customer waits and spends getting service.
* Optimizing resource allocation: Use the available counters and the staff most efficiently.
* Identifying bottlenecks: finding the specific part of the service that causes delays.
* Increasing throughput: Serve more customers per hour.

# **Dataset**

I observed the queue during 8.30 AM-10.30 consecutive working days 5 days of with the permission of the Administrative Officer of the Divisional Secretariat Matale and got a total of 186 samples.

GitHub link

<https://github.com/tilshanR/queue-analysis-eex5363-mp.git>

# **Appendix**

A group of people standing in a hallway

AI-generated content may be incorrect.

Figure 1: Queue building up

A computer screen with a yellow and white line

AI-generated content may be incorrect.

Figure 2: Observation & data gathering