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Data Article

Survey dataset on analysis of queues in some selected banks in Ogun State, Nigeria

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ABSTRACT

Queuing theory is the mathematical study of waiting queues (or lines). The theory enables the mathematical analysis of several related processes such as arriving at the queue, waiting in line and being served by a server. This data article contains the analysis of queuing systems obtained from queues from the observed data of some selected banks in Ogun State. One of the gains expected from this survey, is to help review the efficiency of the models used by banks in such geographical locations in sub-Saharan countries. The Survey attempts to estimate the average waiting time and length of queue(s).

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Specifications Table

Subject area	Decision sciences
More specific subject area	Queuing analysis, operations research, statistics
Type of data	Tables
How data was acquired	Field Survey and with the aid of stop watch and a recorder.
Data format	Analyzed
Experimental factors	Simple random sampling of some selected Banks in Urban areas of Ogun State, Nigeria.

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Experimental features	Analysis of the waiting and service times of selected customers.
Data source location	Covenant University Ota, Ogun State, Nigeria
Data accessibility	All the data are in this data article

Value of the data

- The data could be useful in detecting the causes and proffering solutions to the problem of queues.
- Queues are necessary if order is to be maintained in the society, but most queues in sub-Saharan countries constitute a menace and sometimes end in riot and mob actions. Hence the data can be useful for security agents responsible for maintaining law and order [1,2].
- The data could be used by banking regulatory bodies in Nigeria.
- The analysis of the data could be helpful in time management especially at peak periods [3].
- The data can also help the banks to improve on their services [4–6].
- The data can also help to rate the banks in terms of customers services satisfaction.

1. Data

The data was collected from three banks in three different urban areas of Ogun State. The Data was generated using a stop watch and a recorder to note the arrival time, the time spent on the queue (waiting time) before being attended to and the time used to serve a customer (Service time).

The notations used for the presentation of data are X_1, X_2, X_3 , and N_1 for the first bank Y_1, Y_2, Y_3 , and N_2 for the second bank and Z_1, Z_2, Z_3 , and N_3 for the third bank respectively. They denote the following:

X_1, Y_1 and Z_1 represents the time range when a customer arrives at the bank and the time his/her cheque or withdrawal booklet was collected for the first, second and third bank respectively.

X_2, Y_2 and Z_2 represents the time used to process the cheque or withdrawal booklet in the first, second, and third banks respectively.

X_3, Y_3 and Z_3 represents the total time in the system in the first, second, and third banks respectively.

N_1, N_2 and N_3 represents the number of people who came to the first, second and third banks and were attended to.

The data taken covers only twelve weeks. Four weeks for each bank and the time is measured in minutes.

2. Experimental design, materials and methods

The study of queues is the study of waiting times which often results to models that predicts queue length and waiting time. The models are also used to make decisions on how to increase servers, optimize queue length and waiting time. Queue is often characterized by the following presented in Table 1.

Table 1
Features of queue.

1	Queue is a linear data structure.
2	In queues insertion can take place at only one end called rear.
3	In queues deletions can takes place at the other end called front.
4	Queues are called FIFO (first in first out). The element first into the queue is the element deleted first from the queue.
5	Queues are also called LIFO (last in last out).The element entered last into the queue is the element deleted last from the queue.

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