

Assessment of Organizational Policies in a Retail Store Based on a Simulation Model

Jairo R. Coronado-Hernández; Mayra A. Macías-Jiménez; Joned D.
Chica-Llamas; José I. Zapata-Márquez

Abstract

This paper evaluates three organizational policies in a retail store by a discrete simulation model in Simio®. The policies implemented were using one, two, or three express checkouts, cross-trained workers, and allocating one, two, or three weighing counters in the produce section (fruit and vegetables). These policies were evaluated during days with low, medium, and high demand over critical performance metrics such as the queue length, waiting time, active and idle time rate, the average time in the system, average service time, and sales. Our results demonstrated that all policies are beneficial for the studied system but in days with high demand. In days with low or medium demand, there were good improvements for some indicators, but this conflicted with others. As the simulation model was implemented to evaluate each policy independently, a future direction should include studying the performance simultaneously.

Keywords

Organizational policies; Retail industry; Simulation model; Express checkouts; Cross-trained workers; Weighing counters; Queuing theory