Wimalai Rungsiyopat 2009: Simulation-Based Approaches for Optimal Staff Allocation in a Restaurant. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Assistant Professor Juta Pichitlamken, Ph.D. 81 pages.

We develop a simulation model for restaurant service so that waiting time to serve the first order of food and drink can be estimated when the customer arrival rates and the number of staff vary. The goal is for customers to have the first order of food within 3 minutes and the first order of drink within 4 minutes. We consider only the restaurant rush hours: 11.00 - 13.30 and 17.30 - 20.30. The simulation results show that the average time until receiving the first food order is 5.91 ± 0.13 minutes and the average time until receiving the first drink order is 6.90 ± 0.25 minute, which are sufficiently close to the empirical data. We also develop an Excel user interface where users can change the customer arrival rates and the number of staffs, and the times until receiving orders are estimated from the Arena model that we developed.

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