

QUEUING FIELD OBSERVATIONS: TOLERATING DELAY OR REDUCING WAIT

Willard Price, Eberhardt School of Business, University of the Pacific, 3601 Pacific Avenue, Stockton, CA 95211, 209-946-2638, wprice@pacific.edu

ABSTRACT

Two Research Purposes

The first objective is to evaluate the use of a field experience to enhance learning for an undergraduate offering of Operations Management. Besides applying operations content seen by students in the classroom, field study is hypothesized as a learning improvement to lecture, reading and textbook assignments. The second objective is to evaluate the field data collected by student teams. For this assignment teams observe waiting situations at different service settings, collecting data on arrival and service behavior. Frequency distributions are provided by each team to allow analysis of waiting and service times. In addition, the field site's tolerance for waiting is observed along with any tactics they use to reduce waiting.

Field Study Data Base

Each team is asked to collect data on at least 40 customers and prepare a report with the above analyses. Teams demonstrate their learning about the system's behavior, management decisions and make recommendations for performance improvement. The research aggregates results of about 50 teams over the last three semesters. This document is an initial research statement and does not contain the aggregated data displays and analyses that will follow. The presentation will provide full information in a Table Topic presentation and result in a complete manuscript critiquing the study of field experiences and presenting the evidence from the queuing systems studied.

Research Design

1. An aggregated distribution of the performance of waiting and service times at all field sites.
2. Commentary on the apparent "tolerance for wait" by customers and servers, based on the author's judgment since there will be no analysis of costs or other factors that influenced management choices on system resources.
3. Distributions of IAT and service time allow a conversion to determine the mean and distribution of arrival rate and service rate. These rate distributions can be compared to the common assumption of Poisson arrival and service patterns via a "goodness of fit" test to determine confidence with Poisson or any other theoretical distribution.
4. Summary of managerial actions seen at each site regarding service resources and particularly "flexible capacity" as arrival rates increase and queues expand. The hypothesis is that most site managers want to improve queuing by using tactics to reduce wait. Student recommendations for system change are also highlighted, though they are not tested by this current research effort for practitioner acceptance or credibility to actually improve performance.
5. Implications for student learning from these field experiences are suggested in terms of assessment and recommendations for the evolution of field data collection methods to improve learning. It is possible these student teams can become more viable "consulting teams", conducting more elaborate studies in concert with site managers.

Contact the author at the above email address if you have interest in field experiences or queuing data analysis and/or if you desire a copy of the final manuscript.