UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

MEASURING SERVICE PERFORMANCES: AN IMPROVISE OF M/M/S QUEUING THEORY MODEL USING SIMULATION WITH ARENA

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TABLE OF CONTENTS

ABSTRACT

Mathematical study of queuing time and waiting lines is part of queuing system. It is widely considered as branch of operation research because the results are usually used for making business decisions in providing a good service. Queuing system is an analyzing for mathematical method in providing a quantitative basis for a better decision making. This study is about how to measure a service performance at fast food restaurant in improvise an M/M/S queuing theory model using a simulation with ARENA. This research is based on actual observed data of customers by collecting it manually at Texas Chicken Gerbang Seremban, Negeri Sembilan. The objectives of this case are to apply Queing theory model by using multichannel queuing model, M/M/S and to determine the utilization rate and average waiting time a customer spent in queue. Apart for that, to build and verify result using simulation with ARENA software. The result shows that there is a queue in Texas Chicken's system based on observation. The result obtained in this research paper will be obliging for fast food manager to make the right decision on how to increase their performance at the fast food restaurant and also customer's satisfactory.