Kwanta Leelakitrungruang 2011: Queuing Analysis of Ticket Selling Service System at Mo Chit BTS Skytrain Station. Master of Economics, Major Field: Economics, Department of Economics. Thesis Advisor:

Associate Professor Darawan Virunhaphol, Ph.D. 100 pages.

The purpose of this study was to analyze the service cost and opportunity cost of waiting that passengers lost for waiting to exchange coin and buy the ticket. Moreover that analyzed the total cost of queuing system for two service points (exchange coin and ticket selling service point e.g.) and adjusted the amount of service channel to minimize the total cost. The analysis used the single-stage queuing model with multiple servers multiple queues or m M/G/1 queuing model. The study collected the amount of arrival passengers per three minutes, service time per passenger and used the questionnaires to evaluate the opportunity cost of waiting, sample size is 380.

From the study, the arrival rate at exchange coin service point per hour during rush hours (07.00-09.00 am.) was 681.85 passengers and service time per passenger was 8 seconds. The arrival rate at ticket selling service point per hour during rush hours (07.00-09.00 am.) and outside rush hours (13.00-15.00 am.) were 414.77 and 272.20 passengers and service time per passenger were 25 and 20 seconds respectively. The analysis used statistical value, service cost and opportunity cost of waiting to calculate the total cost of queuing system. The study concluded that the amount of exchange coin channel during rush hours should be at least 2 channels and the amount of ticket selling channel during rush hours and outside rush hours should be three and two channels respectively

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