ABSTRACT

Herlina B. Onuneng, 2 0 2 4. *ANALYSIS OF MODELS IN PERFORMANCE MEASUREMENT OF QUEUING SYSTEMS AND OPTIMIZATION OF WAITING TIME IN THE CREATION OF ELECTRONIC ID CARDS (E-KTP).* Undergraduate Thesis. Gorontalo. Study Program of Mathematics. Department of Mathematics. Faculty of Mathematics and Natural Sciences. Universitas Negeri Gorontalo.

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The Population and Civil Registration Office of Bone Bolango Regency plays a significant role in creating electronic ID cards (E-KTP) by providing one facility for recording and another for printing, with queuing for these services dominating other queues. This issue becomes the focus of the study, specifically regarding the performance of the queuing system. A queue is a group of people or items waiting for service after a certain period, and how an organization can ensure the appropriate number of facilities and timing to provide effective service to visitors. The queuing problem arises due to an imbalance between the number of service facilities and the volume of visitor arrivals. This study aims to improve service levels by applying a queuing model using the multi-channel multi-phase method for the recording counter and the multi-channel single-phase method for printing counter and comparing the performance of the queuing system before and after the application of these methods. The result of this study show a drastic improvement in the queuing system, where the initial performance, which had a negative value (suboptimal), greatly improved due to the addition of two facilities in the printing process. Based on manual calculations and using PQM-QM software, the optimal standard waiting time (W_q) for visitor in the queue is 3,6, minutes, and the waiting time in the system (W_s) is 12,5 minutes with three service facilities.

Keywords: *Queuing system, waiting time, E-KTP*

Skripsi yang berjudul "ANALISIS MODEL DALAM PENGUKURAN KINERJA SISTEM ANTRIAN DAN PENGOPTIMALAN WAKTU TUNGGU PADA PEMBUATAN KARTU TANDA PENDUDUK ELEKTRONIK (KTP-el)"

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