

ABSTRAK

Semakin bertambahnya jumlah pengguna sepeda motor, maka kebutuhan pengguna sepeda motor dalam memenuhi akan bahan bakar secara otomatis akan mengalami peningkatan sehingga mengakibatkan panjangnya antrian ditempat pengisian bahan bakar yaitu di Stasiun Pengisian Bahan Bakar Umum (SPBU). Tujuan dari penelitian ini untuk mengoptimalkan antrian dengan analisis terkait sistem antrian dan pelayanan pengguna sepeda motor di SPBU 34.422.03 Labuan, Banten. Jenis data yang digunakan data primer dengan melakukan observasi serta wawancara dan data sekunder diambil dari studi literatur. Populasi yang diambil adalah pelanggan pengendara sepeda motor. Sampel yang digunakan waktu pengambilan data selama 14 hari antara jam 07.00 – 09.00, 12.00 – 14.00, 15.00 – 17.00 dan 19.00 – 20.00 WIB. Metode analisis menggunakan sistem antrian model *multiple channel query system* atau sistem antrian jalur berganda. Hasil dari penelitian pada SPBU 34.422.03 Labuan menggunakan analisis teori antrian model *multiple channel query system*, dengan 3 jalur fasilitas pelayanan antrian terpanjang dalam sistem terjadi pada pukul 07:00-08:00 dengan rata-rata tingkat kedatangan 220 dan waktu pelayanan dalam antrian selama 0,366 menit, usulan penambahan 2 jalur fasilitas pelayanan sehingga menjadi 5 jalur fasilitas pelayanan didapatkan waktu pelayanan pada jam antrian tertinggi pukul 07:00 - 08:00 berkurang menjadi 0,338 menit. Penambahan 2 jalur dapat mengoptimalkan kinerja antrian sehingga terjadi pengurangan waktu pelayanan.

Kata Kunci: sistem antrian, *multiple channel query system*, sepeda motor, spbu 34.422.03, pengoptimalan.

ABSTRACT

As the number of motorcycle users increases, the needs of motorcycle users in meeting fuel will automatically increase, resulting in long queues at the refueling place, namely at the Public Fuel Filling Station (SPBU). The purpose of this study is to optimize the queue with an analysis related to the queuing system and motorcycle user services at gas stations 34.422.03 Labuan, Banten. The type of data used is primary data by conducting observations and interviews and secondary data taken from the study of literature. The population taken was motorcycle rider customers. The sample was used for data collection for 14 days between the hours of 07.00 – 09.00, 12.00 – 14.00, 15.00 – 17.00, and 19.00 – 20.00 WIB. The analysis method used the queuing system of the model multiple channel query system or the multiple-line queuing system. The results of the research at the gas station 34.422.03 Labuan using queuing theory analysis of the multiple channel query system model, with 3 lines of service facilities the longest queue in the system occurred at 07:00-08:00 with an average arrival rate of 220 and service time in the queue for 0.366 minutes, the proposed addition of 2 lines of service facilities so that it became 5 lines of service facilities obtained the service time at the highest queuing hour at 07:00-08:00 was reduced to 0.338 minutes. The addition of 2 lines could optimize queue performance so that there was a reduction in service time.

Keyword: queue system, multiple channel query system, motorcycle, gas station 34.422.03, optimization.

