

## ***Forecasting Bed Requirements Using the Triple Exponential Smoothing***

***Method at RSUD Dr. Saiful Anwar, East Java***

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### ***ABSTRACT***

*The efficiency of bed utilization is an important aspect of hospital services, as it represents the core of patient care. Dr. Saiful Anwar Hospital has a low Bed Occupancy Rate (BOR) in several installations, which is one of the indicators used to assess bed utilization efficiency. Patient stagnation also occurs, with 1,370 patients out of 8,094 visits experiencing delays. This study aims to analyze the ideal number of hospital beds by forecasting inpatient days. The Triple Exponential Smoothing method is used to support bed utilization planning with the assistance of R Studio software. This research adopts a quantitative descriptive approach using monthly recapitulation data from inpatient daily census reports, including inpatient days and bed capacity. The results indicate that differences in installation characteristics affect the length of stay and bed utilization, resulting in data patterns that exhibit both trend and seasonal components. Forecasting is conducted by comparing the Triple Exponential Smoothing Additive and Multiplicative models, which use parameters alpha, beta, and gamma within the range of 0 to 1. The forecasting results for inpatient days in each installation are fluctuating, following the rise and fall of actual data. The smallest Mean Absolute Percentage Error (MAPE) is produced by the Triple Exponential Smoothing Additive model, with a value of less than 20%, indicating that the model is in the “good” category for application. The forecasting results are then used as the basis for estimating the required number of beds using the Barber-Johnson approach with a BOR standard of 75%. The findings suggest the need for both addition and reduction of beds in several installations to better match service demand. Bed capacity equalization is recommended through relocation over a three-year period to achieve efficient utilization, thereby serving as a reference for decision-making.*

***Keywords:*** *Bed needs, BOR, Forecasting, Triple Exponential Smoothing*