

***Classification of Pneumonia Using the Naive Bayes Algorithm in the
Inpatient Unit of RSUD Blambangan Banyuwangi***

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ABSTRACT

Pneumonia is an acute infection of the lung tissue that remains a health problem with high morbidity and mortality rates. Based on the top 10 inpatient diseases at Blambangan Regional General Hospital, Banyuwangi, in 2025, there were 483 cases of pneumonia, including 40 deaths. The symptoms of pneumonia are similar to those of other pulmonary diseases, particularly pulmonary tuberculosis, which accounted for 268 cases. Both diseases are treated in the same unit, namely the Pulmonary Center, which may create difficulties in achieving rapid and accurate diagnosis and increase the risk of misdiagnosis. Therefore, an approach that can support disease classification is needed. The utilization of medical record data through data mining techniques can be used as an alternative to support disease classification. This study aimed to classify Pneumonia and Pulmonary Tuberculosis using the Naive Bayes algorithm in the Inpatient Unit of Blambangan Regional General Hospital, Banyuwangi. This quantitative study used RapidMiner as the data processing tool. The sample consisted of 262 medical records, comprising 131 Pneumonia patients and 131 Pulmonary Tuberculosis patients. The study variables included age, sex, comorbidities, cough, sputum production, fever, shortness of breath, signs of pulmonary consolidation, leukocyte count, fatigue, nausea, and vomiting. The results showed that the 80%:20% training and testing ratio achieved an accuracy of 90.38%, precision of 86.21%, and recall of 96.15%. This study also developed a classification system based on Microsoft Excel using VBA to automatically determine the Pneumonia and Non-Pneumonia classes.

Keywords: *Naive Bayes, Pneumonia, Pulmonary Tuberculosis, RapidMiner.*