

## ABSTRAK

### ANALISIS SENTIMEN TERHADAP KINERJA PELAYANAN DI PT. BANK RAKYAT INDONESIA (PERSERO) TBK. MENGGUNAKAN METODE *SUPPORT VECTOR MACHINE*, *NAÏVE BAYES*, DAN *K-NEAREST NEIGHBORS*

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Penelitian ini mengenai analisis sentimen terhadap kinerja pelayanan di PT. Bank Rakyat Indonesia (Persero) Tbk. Dataset yang digunakan sebanyak 1652 data Xs yang dikumpulkan sejak bulan Maret 2022 sampai dengan Februari 2023 yang diklasifikasikan menjadi dua kelas, yaitu sentimen positif dan sentimen negatif. Dalam memberikan pelayanan kepada nasabah antrian yang panjang kerap terjadi PT. Bank Rakyat Indonesia (Persero) Tbk. sehingga dapat menyebabkan komentar-komentar mengenai pelayanan. PT. Bank Rakyat Indonesia (Persero) Tbk. belum terdapat dalam menanggapi komentar nasabah seharusnya dibuatkan secara rutin analisis sentimen terhadap kinerja pelayanan. Analisis sentimen dalam penelitian ini menggunakan metode *Support Vector Machine (SVM)*, *Naïve Bayes*, dan *K-Nearest Neighbors*. Penelitian ini menerapkan penyeimbangan data pada *dataset imbalanced* menggunakan *Synthetic Minority Over-sampling Technique (SMOTE)* untuk mendapatkan performa yang terbaik. Hasil evaluasi menggunakan algoritma *Support Vector Machine (SVM)* pada *dataset balanced* yang menghasilkan kinerja yang lebih baik dibandingkan dengan metode lainnya akurasi sebesar 94,30%, algoritma *Naïve Bayes* sebesar 93,68% pada *dataset balanced*, sementara algoritma *K-Nearest Neighbors (KNN)* sebesar 88,31% pada *dataset balanced*. Perbandingan hasil kinerja berdasarkan ketiga metode yang telah digunakan menunjukkan bahwa algoritma *Support Vector Machine (SVM)* lebih baik dibandingkan *Naïve Bayes*, dan *K-Nearest Neighbors (KNN)* untuk analisis sentimen terhadap kinerja pelayanan di PT. Bank Rakyat Indonesia (Persero) Tbk.

**Kata Kunci:** Analisis Sentimen, *Support Vector Machine*, *Naïve Bayes*, *K-Nearest Neighbors*, Pelayanan PT. Bank Rakyat Indonesia (Persero) Tbk.

## ABSTRACT

### SENTIMENT ANALYSIS OF SERVICE PERFORMANCE AT PT. BANK RAKYAT INDONESIA (PERSERO) TBK. USING SUPPORT VECTOR MACHINE, NAÏVE BAYES, AND K-NEAREST NEIGHBORS METHODS

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This research is about sentiment analysis of the service performance at PT. Bank Rakyat Indonesia (Persero) Tbk. The dataset used is 1652 data Xs collected from March 2022 to February 2023, classified into two classes, namely positive and negative sentiment. In providing services to customers, long queues often occur, PT. Bank Rakyat Indonesia (Persero) Tbk. so that it can lead to comments about the service. PT. Bank Rakyat Indonesia (Persero) Tbk. Yet to be available in response to customer comments, we should routinely make sentiment analysis on service performance. Sentiment analysis in this study uses the Support Vector Machine (SVM), Naïve Bayes, and K-Nearest Neighbors methods. This study applies data balancing to *imbalanced* datasets using the Synthetic Minority Over-sampling Technique (SMOTE) for the best performance. The evaluation results use the Support Vector Machine (SVM) algorithm on a balanced dataset, producing better performance than other methods with an accuracy of 94,30%. The Naïve Bayes algorithm is 93,68% on a balanced dataset, while the K-Nearest Neighbors (KNN) algorithm is 88,31%. The performance comparison results based on the three methods used show that the Support Vector Machine (SVM) algorithm is better than the Naïve Bayes and K-Nearest Neighbors (KNN) algorithms for sentiment analysis of service performance at PT. Bank Rakyat Indonesia (Persero) Tbk.

**Keywords:** Sentiment Analysis, Support Vector Machine, Naïve Bayes, K-Nearest Neighbors, service of PT. Bank Rakyat Indonesia (Persero) Tbk.