ABSTRAK

Monica Aellycia Pramitha Aldika, 2024. Analisa Klasifikasi Penerimaan Peserta Didik Baru SMA Negeri 1 Godean Sleman Tahun 2023 Menggunakan Metode *Support Vector Machine*. Skripsi. Program Studi Pendidikan Matematika, Jurusan Pendidikan Matematika dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Sanata Dharma.

Penelitian ini bertujuan untuk memprediksi PPDB SMA Negeri 1 Godean dari empat Jalur pendaftaran berdasarkan ketentuan PPDB 2023 serta efektivitas penggunaan algoritma *Support Vector Machine.* Jenis penelitian yang digunakan adalah studi kasus dari data PPDB 2023.

Teknik pengumpulan data adalah studi dokumen PPDB 2023 dari Dinas Pendidikan, Pemuda dan Olahraga Daerah Istimewa Yogyakarta. Subjek penelitian adalah peserta didik yang mendaftar di SMA Negeri 1 Godean Sleman Yogyakarta melalui SIAP-PPDB. Teknik analisis data yang digunakan adalah teknik penambangan data dengan menerapkan metode *Support Vector Machine (SVM)* dengan *feature selection Pearson Correlation, Select K-Best,* dan *RFE.* Langkah-Langkah penambangan data meliputi: (1) menyeleksi data, (2) pra-pemprosesan data, (3) transformasi data, (4) penambangan data, dan (5) interpretasi/evaluasi.

Model prediksi *Support Vector Machine* pada setiap jalur pendaftaran PPDB menunjukkan hasil yang efektif yang dapat dilihat dari tingkat akurasi yang tinggi. Pada Jalur Zonasi di SMA Negeri 1 Godean model prediksi *Support Vector Machine* tanpa *feature selection* mencapai akurasi 96%. Jalur Afirmasi di SMA Negeri 1 Godean, model *Support Vector Machine* mencapai akurasi stabil baik tanpa seleksi fitur maupun dengan seleksi fitur menggunakan *Pearson Correlation*, *Select K-Best*, atau *RFE*. Hasil evaluasi *Support Vector Machine* tanpa *feature selection* mencapai akurasi 89%. Pada Jalur Prestasi di SMA Negeri 1 Godean, model *Support Vector Machine* dengan *Select K-Best* dan *RFE* mencapai akurasi sempurna sebesar 100%. Pada Jalur Perpindahan Tugas Orang Tua/Wali SMA Negeri 1 Godean, model *Support Vector Machine* mencapai akurasi stabil baik tanpa seleksi fitur maupun dengan seleksi fitur menggunakan *Pearson Correlation*, *Select K-Best*, atau *RFE* masing-masing sebesar 75%. Berdasarkan hasil akurasi tersebut, algoritma *Support Vector Machine* terbukti efektif dalam memodelkan prediksi PPDB SMA Negeri 1 Godean. Nilai Asesmen Standarisasi Pendidikan Daerah, Rata-rata Nilai Raport serta Pilihan Sekolah ditemukan sebagai faktor yang paling berpengaruh, diikuti oleh Nilai Prestasi, Akreditasi Sekolah Asal, sementara Zona berpengaruh pada Jalur pendaftaran Zonasi. Bagi calon peserta didik baru, pemahaman tentang faktor-faktor ini dapat membantu mempersiapkan diri lebih baik.

Kata kunci: *PPDB, SVM, Jalur Pendaftaran, Feature Selection.*

ABSTRACT

Monica Aellycia Pramitha Aldika, 2024. Classification Analysis of New Student Admission of SMA Negeri 1 Godean Sleman in 2023 Using Support Vector Machine Method. Thesis. Mathematics Education Study Program, Department of Mathematics and Natural Sciences Education, Faculty of Teacher Training and Education, Sanata Dharma University.

This research aims to predict the PPDB of SMA Negeri 1 Godean from four registration paths based on the provisions of PPDB 2023 and the effectiveness of using the Support Vector Machine algorithm. The type of research used is a case study of the 2023 PPDB data.

The data collection technique was a document study of PPDB 2023 from the Education, Youth and Sports Office of Yogyakarta Special Region. The research subjects were students who registered at SMA Negeri 1 Godean Sleman Yogyakarta through SIAP-PPDB. The data analysis technique used is the data mining technique by using the Support Vector Machine (SVM) method with feature selection Pearson Correlation, Select K-Best, and RFE. Data mining steps include: (1) data selection, (2) data pre-processing, (3) data transformation, (4) data mining, and (5) interpretation/evaluation.

The Support Vector Machine prediction model on each PPDB registration path shows effective results that can be seen from the high accuracy rate. In the Zoning Pathway at SMA Negeri 1 Godean, the Support Vector Machine prediction model without feature selection achieved 96% accuracy. In the Affirmation Pathway at SMA Negeri 1 Godean, the Support Vector Machine model achieved stable accuracy both without feature selection and with feature selection using Pearson Correlation, Select K-Best, or RFE. The evaluation results of Support Vector Machine without feature selection reached 89% accuracy. In the Achievement Pathway at SMA Negeri 1 Godean, the Support Vector Machine model with Select K-Best and RFE achieved perfect accuracy of 100%. In the Transfer Pathway at SMA Negeri 1 Godean, the Support Vector Machine model achieved stable accuracy both without feature selection and with feature selection using Pearson Correlation, Select K-Best, or RFE of 75% each. Based on these accuracy results, the Support Vector Machine algorithm proved to be effective in modeling the prediction of PPDB of SMA Negeri 1 Godean. Regional Education Standardization Assessment Score, Average Report Card Score and School Choice were found to be the most influential factors, followed by Achievement Score, Accreditation of School of Origin, while Zone influenced the Zoning registration path. For prospective new students, understanding these factors can help them prepare better.

Keywords*: admission of new students, SVM, Registration Pathway, Feature Selection.*