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#30260 SUMMARY

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TITLE AND ABSTRACT

Title Penerapan FP-Growth dan Random Forest dalam Analisis Data Penjualan Makanan Ringan

Abstract

Penelitian ini bertujuan untuk menganalisis pola pembelian produk makanan ringan serta memprediksi penjualan produk dengan menggunakan pendekatan *data mining* dan *machine learning*. Dalam industri makanan ringan yang semakin kompetitif pemahaman mendalam tentang pola perilaku konsumen dan tren penjualan produk sangat penting untuk pengambilan keputusan bisnis yang lebih efektif serta peningkatan profitabilitas perusahaan. Tantangan utama dalam penelitian ini adalah mengidentifikasi variabel yang relevan dalam dataset penjualan untuk mengungkap pola asosiasi antar produk dan menghasilkan prediksi penjualan yang akurat. Metodologi yang digunakan dalam penelitian ini melibatkan algoritma *FP-Growth* untuk menemukan asosiasi produk yang sering dibeli bersamaan serta algoritma *Random Forest* untuk memprediksi penjualan berdasarkan data historis. Hasil penelitian dari penerapan algoritma *FP-Growth* mampu mengidentifikasi sembilan aturan asosiasi yang potensial untuk diterapkan dalam sistem rekomendasi produk untuk menyediakan rekomendasi produk yang lebih personal kepada konsumen. Selain itu, model prediksi menggunakan *Random Forest* menunjukkan performa yang baik dengan nilai *Mean Absolute Error* (MAE) sebesar 23,54, *Root Mean Squared Error* (RMSE) sebesar 36,36 dan *R-squared* sebesar 0,86 dengan keseluruhan menunjukkan tingkat akurasi yang cukup baik. Penelitian ini memberikan kontribusi penting dalam optimasi stok dan strategi pemasaran berbasis data. Penelitian lanjutan disarankan menggunakan data yang lebih bervariasi dan periode waktu yang lebih panjang untuk meningkatkan akurasi prediksi.

INDEXING

Keywords FP-Growth; Random Forest; Rekomendasi Produk; Prediksi Penjualan;



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