

PENATAAN KATEGORI PRODUK SEBAGAI UPAYA PENINGKATAN LAYANAN DI UMJ *MART* MENGGUNAKAN ALGORITMA *FP-GROWTH*

Faradina Gita Vani¹⁾, Agung Nilogiri²⁾, Luluk Handayani³⁾

¹²³Program Studi Teknik Informatika, Fakultas Teknik,
Universitas Muhammadiyah Jember

Email: fgitavani@gmail.com¹⁾, agungnilogiri@unmuhjember.ac.id²⁾,
luluk.handayani@unmuhjember.ac.id³⁾

ABSTRAK

Unggul Mulia Jember (UMJ) *Mart* merupakan unit usaha ritel yang menyediakan berbagai kebutuhan harian mahasiswa, dosen, tenaga kependidikan, dan masyarakat umum. Seiring dengan peningkatan jumlah transaksi setiap harinya, diperlukan analisis untuk memahami pola perilaku belanja pelanggan, termasuk dalam masalah penataan produk yang berbasis data untuk meningkatkan pelayanan. Penelitian ini bertujuan untuk menganalisis keterkaitan antar kategori produk serta menyusun strategi penataan produk menggunakan metode *Association Rule Mining* dengan algoritma *FP-Growth*. Data yang digunakan merupakan data transaksi periode April hingga September 2025 sebanyak 33.862 transaksi, yang setelah *pre-processing* menjadi 19.984 data. Pemodelan dilakukan dengan menetapkan minimum *support* sebesar 1% dan minimum *confidence* 50%. Penelitian ini menghasilkan 11 aturan asosiasi yang memenuhi minimum *confidence*. Hasil tersebut menunjukkan bahwa kategori makanan, minuman, tisu, dan es krim memiliki kecenderungan dibeli bersamaan. Kategori tisu yang masih ditempatkan berjauhan dengan makanan dan minuman disarankan untuk diletakkan berdekatan.

Kata Kunci: *Association Rule Mining*, *FP-Growth*, *Market Basket Analysis*, Penataan Produk

PRODUCT CATEGORY ARRANGEMENT AS AN EFFORT TO IMPROVE SERVICES AT UMJ MART USING THE FP-GROWTH ALGORITHM

Faradina Gita Vani¹⁾, Agung Nilogiri²⁾, Luluk Handayani³⁾

¹²³*Informatics Engineering Study Program, Faculty of Engineering,
University of Muhammadiyah Jember*

Email: fgitavani@gmail.com¹⁾, agungnilogiri@unmuhjember.ac.id²⁾,
luluk.handayani@unmuhjember.ac.id³⁾

ABSTRACT

Unggul Mulia Jember (UMJ) Mart is a retail business unit that provides various daily needs of students, lecturers, education staff, and the general public. Along with the increase in the number of transactions every day, analysis is needed to understand customer shopping behavior patterns, including in the issue of data-based product structuring to improve services. This study aims to analyze the relationship between product categories and develop a product structuring strategy using the Association Rule Mining method with the FP-Growth algorithm. The data used is transaction data for the period April to September 2025 as many as 33,862 transactions, which after pre-processing becomes 19,984 data. Modeling is carried out by setting a minimum support of 1% and a minimum confidence of 50%. This research produced 11 association rules that met the minimum confidence. The results show that the food, beverage, tissue, and ice cream categories have a tendency to be purchased together. Categories in which the tissue is still placed away from food and beverages are recommended to be placed nearby.

Keywords: *Association Rule Mining, FP-Growth, Market Basket Analysis, Product Arrangement*