INTISARI

Kemacetan lalu lintas yang semakin parah di Kota Bandung tercermin dari laporan *TomTom Traffic Index* 2024 yang menempatkan kota ini pada peringkat ke-12 kota termacet di dunia serta rendahnya tingkat penggunaan angkutan umum, sebagaimana terlihat pada *load factor* rata-rata harian BRT Jabar Metro Trans koridor 1D sebesar 44,87%, menunjukkan adanya inefisiensi dalam sistem transportasi perkotaan. Salah satu alternatif yang potensial adalah penerapan *Autonomous Rail Rapid Transit* (ART) pada koridor 1D. Permasalahan yang diangkat dalam penelitian ini adalah rendahnya daya tarik angkutan umum eksisting dan belum optimalnya integrasi antarmoda. *Autonomous Rail Rapid Transit* (ART) muncul sebagai solusi inovatif yang dapat meningkatkan daya tarik masyarakat terhadap transportasi umum. ART menawarkan sistem transportasi cerdas berbasis teknologi otonom yang lebih efisien, fleksibel, dan modern dibandingkan moda transportasi konvensional. Penelitian ini bertujuan untuk mengukur tingkat penerimaan pengguna BRT terhadap ART, menganalisis pengaruh konstruk dalam model UTAUT2 yang dimodifikasi terhadap niat menggunakan (*Behavioral Intention*) dan merumuskan rekomendasi peningkatan aksesibilitas dan integrasi antarmoda untuk mendukung keberhasilan implementasi ART di Kota Bandung.

Penelitian ini menggunakan analisis *Structural Equation Modeling–Partial Least Squares* (SEM-PLS) dengan pengumpulan data primer melalui survei kuesioner yang disebarkan secara langsung dan daring (*Google Form*) kepada pengguna Jabar Metro Trans koridor 1D kepada 400 responden. Instrumen penelitian disusun berdasarkan model UTAUT2 (PE, EE, SI, FC, HM, PV, HA, BI) dengan penambahan variabel *Perceived Risk* (PR) dan *Novelty Seeking* (NS).

Hasil analisis SEM-PLS menunjukkan bahwa model UTAUT2 memiliki nilai R^2 sebesar 0,835, artinya 83,5% variasi niat penggunaan dijelaskan oleh konstruk dalam model. Faktor yang berpengaruh positif dan signifikan terhadap *Behavioral Intention* adalah *Price Value* (pengaruh paling dominan), *Social Influence*, *Habit*, dan *Performance Expectancy*. Sebaliknya, *Effort Expectancy* dan *Facilitating Conditions* berpengaruh negatif dan signifikan, sedangkan *Hedonic Motivation*, *Novelty Seeking*, dan *Perceived Risk* tidak berpengaruh signifikan. Temuan ini menegaskan bahwa persepsi kesesuaian tarif dengan manfaat menjadi pendorong utama adopsi ART, sementara hambatan pada aspek kemudahan dan kondisi pendukung perlu diminimalkan.

Kata Kunci: *Autonomous Rail Rapid Transit* (ART), UTAUT2, penerimaan masyarakat.

ABSTRACT

The worsening traffic congestion in Bandung is reflected in the 2024 TomTom Traffic Index, which ranks the city as the 12th most congested in the world. This is coupled with the low utilization of public transportation, as indicated by the average daily load factor of the Jabar Metro Trans BRT for the K1D corridor, which stands at only 44.87%, signaling inefficiency within the urban transportation system. A potential alternative is the implementation of Autonomous Rail Rapid Transit (ART) on the 1D corridor. This research addresses the low appeal of existing public transport and the suboptimal intermodal integration. Autonomous Rail Rapid Transit (ART) emerges as an innovative solution to increase public interest in mass transit by offering a smart, autonomous technology-based system that is more efficient, flexible, and modern than conventional modes. This study aims to measure the acceptance level of BRT users towards ART, analyze the influence of constructs within a modified UTAUT2 model on Behavioral Intention, and formulate recommendations to enhance accessibility and intermodal integration to support the successful implementation of ART in Bandung.

This research employs Structural Equation Modeling–Partial Least Squares (SEM-PLS) for its analysis, with primary data collected through questionnaire surveys distributed both in-person and online (via Google Form) to 400 users of the Jabar Metro Trans K1D corridor. The research instrument was developed based on the UTAUT2 model (PE, EE, SI, FC, HM, PV, HA, BI), with the addition of the Perceived Risk (PR) and Novelty Seeking (NS) variables.

The SEM-PLS analysis results indicate that the UTAUT2 model has an R^2 value of 0.835, signifying that 83.5% of the variance in Behavioral Intention is explained by the constructs within the model. Factors that have a positive and significant influence on Behavioral Intention are Price Value (the most dominant factor), Social Influence, Habit, and Performance Expectancy. Conversely, Effort Expectancy and Facilitating Conditions were found to have a negative and significant influence, while Hedonic Motivation, Novelty Seeking, and Perceived Risk did not have a significant effect. These findings confirm that the perception of fare value in relation to the benefits is the primary driver for ART adoption, while barriers related to ease of use and supporting conditions need to be minimized.

Keywords: *Autonomous Rail Rapid Transit (ART), UTAUT2, Public Acceptance*