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Analisis Pemilihan Moda Becak Listrik, Becak Motor, Bajaj Maxride, dan Ojek Online Sebagai Moda Paratransit Di Yogyakarta
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INTISARI

Transportasi di perkotaan negara berkembang seperti Yogyakarta sering menghadapi keterbatasan kualitas layanan angkutan umum formal, sehingga muncul moda paratransit, yaitu kendaraan yang melayani rute sesuai permintaan penumpang. Berbagai moda paratransit di Yogyakarta, antara lain becak listrik, becak motor, bajaj Maxride, dan ojek *online*. Kehadiran keempat moda paratransit menambah ragam pilihan transportasi dalam mendukung mobilitas perkotaan, namun kualitas layanan belum terukur secara kuantitatif, sehingga penelitian ini bertujuan untuk menganalisis pengaruh atribut moda, sosiodemografi melalui laten variabel, dan karakteristik perjalanan terhadap pemilihan moda paratransit di Yogyakarta.

Lokasi penelitian dilakukan di Yogyakarta. Responden penelitian sebanyak 560 dengan ketentuan pernah menggunakan salah satu moda paratransit meliputi becak listrik, becak motor, bajaj Maxride, dan ojek *online*. Data dikumpulkan selama bulan Januari - Februari 2026 melalui *offline survey*. Metode yang digunakan dalam penelitian ini adalah *Hybrid Choice Model* (HCM) untuk mengestimasi utilitas pemilihan moda paratransit berdasarkan sosiodemografi, karakteristik perjalanan, atribut moda, dan laten variabel (LV).

Hasil penelitian menunjukkan kesesuaian model sangat baik. Atribut moda meliputi biaya, waktu tunggu, dan waktu tempuh signifikan serta bernilai negatif yang menandakan bahwa peningkatan biaya, waktu tempuh, dan waktu tunggu menurunkan utilitas pemilihan moda. Kenyamanan dan keamanan layanan (LV3) meningkatkan utilitas semua moda alternatif terhadap ojek *online*. Dari seluruh variabel karakteristik perjalanan, jarak dekat merupakan faktor yang paling meningkatkan utilitas becak listrik, becak motor, dan bajaj Maxride, sedangkan perjalanan yang dilakukan sendiri dan kepemilikan sepeda motor menurunkan utilitas becak listrik, becak motor, dan bajaj Maxride terhadap ojek *online*. Peningkatan kualitas layanan yang meliputi pelayanan, informasi, dan integrasi (LV1), keandalan (LV2), kenyamanan dan keamanan layanan (LV3), manfaat yang diterima dan ketersediaan layanan (LV4), legalitas (LV5), dan kepastian harga (LV6) berpotensi menggeser preferensi pengguna moda dominan saat ini menuju moda paratransit lain. Oleh karena itu perlu peningkatan kualitas layanan moda paratransit di Yogyakarta guna menciptakan sistem transportasi *first mile–last mile* yang berkelanjutan.

Kata Kunci: Moda paratransit; *First mile-last mile;* Probabilitas pemilihan moda; *Hybrid Choice Model* (HCM)

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ABSTRACT

Urban transportation in developing countries such as Yogyakarta often faces limitations in the quality of formal public transportation services, leading to the emergence of paratransit modes vehicles that serve routes based on passenger demand. Various paratransit modes in Yogyakarta include electric pedicab, motorized pedicab, bajaj Maxride, and motorcycle-based ride-hailing. The presence of these four paratransit modes expands transportation options to support urban mobility; however, service quality has not yet been quantitatively measured. Therefore, this study aims to analyze the influence of mode attributes, sociodemographic factors via latent variables, and trip characteristics on the choice of paratransit modes in Yogyakarta.

The study was conducted in Yogyakarta. The sample consisted of 560 respondents who had previously used at least one of the paratransit modes, including electric pedicab, motorized pedicab, bajaj Maxride, and motorcycle-based ride-hailing. Data were collected from January to February 2026 via an offline survey. The method used in this study was the Hybrid Choice Model (HCM) to estimate the utility of paratransit mode choice based on sociodemographic factors, trip characteristics, mode attributes, and latent variables (LV).

The results show that the model fits the data very well. Mode attributes including cost, waiting time, and travel time are significant and have negative values, indicating that increases in cost, travel time, and waiting time reduce mode choice utility. Service comfort and safety (LV3) increase the utility of all alternative modes relative to motorcycle-based ride-hailing. Among all trip characteristic variables, short distance is the factor that most increases the utility of electric pedicab, motorized pedicab, and bajaj Maxride, whereas traveling alone and owning a motorcycle decrease the utility of electric pedicab, motorized pedicab, and bajaj Maxride relative to motorcycle-based ride-hailing. Improvements in service quality including service delivery, information, and integration (LV1); reliability (LV2); comfort and safety of service (LV3); perceived benefits and service availability (LV4); legality (LV5); and price certainty (LV6) have the potential to shift users' preferences away from the currently dominant mode toward other paratransit modes. Therefore, it is necessary to improve the quality of paratransit services in Yogyakarta to create a sustainable first mile–last mile transportation system.

Keywords: Paratransit mode; First mile-last mile; Mode selection probability; Hybrid Choice Model (HCM)