

INTISARI

Sejak pertama kali dioperasikan, *Light Rail Transit* (LRT) Jakarta masih menghadapi kesulitan dalam mencapai target jumlah penumpang yang direncanakan, yang mencerminkan tantangan dalam menarik pengguna serta menyediakan aksesibilitas yang memadai. Meskipun demikian, hingga saat ini belum terdapat penelitian yang secara khusus menelaah kondisi aksesibilitas pengguna dalam mengakses layanan dan pengaruhnya terhadap jumlah penumpang (*ridership*), padahal beberapa studi terkait aksesibilitas sebelumnya menunjukkan bahwa aksesibilitas stasiun berpengaruh signifikan terhadap *ridership*. Untuk mengisi kesenjangan penelitian tersebut, penelitian ini dilakukan untuk menginvestigasi dan mengevaluasi kondisi aksesibilitas layanan berdasarkan analisis jarak akses berjalan kaki pengguna dari titik transit moda transportasi terakhir terhadap faktor sosio-demografis pengguna serta persepsi kenyamanan terhadap kondisi infrastruktur berjalan kaki di sekitar stasiun LRT Jakarta. Penelitian ini dilaksanakan untuk menilai kondisi aksesibilitas dari dan menuju stasiun LRT Jakarta serta kesesuaiannya dengan standar nasional dan internasional yang berlaku, dengan tujuan menghasilkan rekomendasi strategis guna meningkatkan jumlah penumpang melalui perbaikan aksesibilitas.

Data penumpang dikumpulkan melalui survei pergerakan asal-tujuan (OD) untuk merekam rangkaian perjalanan secara lengkap dari 1.460 sampel pengguna LRT Jakarta. Data perjalanan dianalisis menggunakan perangkat lunak *GIS* dan *polygon delineation method*, sedangkan data persepsi penumpang diolah melalui analisis deskriptif kuantitatif. Jarak akses berjalan kaki yang terukur kemudian divalidasi silang dengan faktor sosio-demografis dan persepsi kenyamanan setiap responden.

Hasil penelitian menunjukkan bahwa 98% penumpang berjalan kaki kurang dari 1.000 m dari titik transit moda transportasi terakhir sebelum dan setelah menggunakan layanan LRT Jakarta, dengan jarak rata-rata sebesar 268,5 m. Distribusi jarak akses berjalan kaki pada berbagai kelompok mayoritas terkonsentrasi pada jarak hingga 400 m. Namun, perbandingan antara *catchment area* aktual dan standar menunjukkan bahwa seluruh stasiun memiliki cakupan yang lebih kecil dari ketentuan yang disyaratkan. Berdasarkan persepsi, penumpang ditemukan merasa sangat nyaman terhadap infrastruktur akses berjalan kaki yang ada, dengan skor kenyamanan sebesar 80,1%, dan persepsi positif tersebut tetap konsisten ketika didistribusikan pada setiap kelompok faktor sosio-demografis. Rekomendasi strategis diusulkan menggunakan kerangka *Safety, Comfort, Attractiveness, and Quality (SCAQ)*, di mana stasiun Pegangsaan Dua, Boulevard Utara, dan Boulevard Selatan difokuskan pada peningkatan aksesibilitas pedestrian melalui penyediaan jalur pejalan kaki, sedangkan stasiun Pulomas, Equestrian, dan Velodrome diarahkan pada intervensi yang lebih spesifik dengan penekanan pada aspek *attractiveness* dan *comfort*.

Kata kunci: Area tangkapan stasiun, *GIS*, jarak akses berjalan kaki, LRT Jakarta, titik transit moda transportasi

ABSTRACT

Since its initial operation, the Jakarta Light Rail Transit (LRT) system has continued to face difficulties in achieving its planned ridership targets, reflecting challenges in both passenger attraction and the provision of adequate accessibility. Despite this condition, no previous research has specifically examined user accessibility conditions in relation to LRT usage and their influence on ridership, even though existing accessibility-related studies have indicated that station accessibility significantly affects ridership levels. To address this research gap, this study was conducted to investigate and evaluate service accessibility conditions through an analysis of users' walking access distances from final multimodal transit points, in relation to socio-demographic characteristics and perceptions of comfort regarding pedestrian infrastructure surrounding Jakarta LRT stations. The study aimed to assess accessibility conditions to and from Jakarta LRT stations and their compliance with applicable national and international standards, with the aim of formulating strategic recommendations to enhance ridership through improved accessibility.

Passenger data were collected through an origin–destination (OD) survey to capture complete travel chains from 1,460 Jakarta LRT users. Travel data were analysed using Geographic Information System (GIS) software, while passenger perception data were examined using quantitative descriptive analysis. The measured walking access distances were subsequently cross-validated against socio-demographic factors and individual comfort perceptions.

The results indicate that 98% of passengers walked less than 1,000 m from final multimodal transit points before and after accessing the Jakarta LRT service, with an average walking distance of 268.5 m. The distribution of walking access distances across user groups were largely concentrated within 400 m. However, a comparison between actual and standardised catchment areas reveals that all stations exhibit coverage areas below the prescribed standards. Conversely, passengers were found to experience a high level of comfort with existing pedestrian access infrastructure, achieving a comfort score of 80.1%, which remained consistent across all socio-demographic groups. Strategic recommendations were formulated using the Safety, Comfort, Attractiveness, and Quality (SCAQ) framework, whereby Pegangsaan Dua, Boulevard Utara, and Boulevard Selatan stations were prioritised for pedestrian accessibility improvements through enhanced walkway provision, while Pulomas, Equestrian, and Velodrome stations were directed towards more targeted interventions focusing on attractiveness and comfort.

Keywords: Catchment area, GIS, Jakarta LRT, multimodal transit points, walking access distance