

EVALUASI KEBUTUHAN HALTE BERDASARKAN RUTE ANGKUTAN KOTA DAN POTENSI PERGERAKAN DI KABUPATEN GARUT MENGGUNAKAN *GEOGRAPHIC INFORMATION SYSTEM*

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ABSTRAK

Angkutan kota (angkot) merupakan salah satu moda transportasi publik yang berperan penting dalam melayani mobilitas harian masyarakat di Kabupaten Garut. Namun demikian, penyediaan halte sebagai fasilitas pendukung belum sepenuhnya direncanakan secara spasial. Penelitian ini bertujuan untuk mengkaji distribusi lokasi halte eksisting pada rute angkutan kota, mengidentifikasi potensi bangkitan dan tarikan pergerakan di sepanjang trayek, serta merumuskan kebutuhan lokasi halte baru guna meningkatkan kualitas pelayanan angkutan kota dengan pendekatan *Geographic Information System* (GIS). Metode yang digunakan berupa analisis spasial dengan memanfaatkan data rute angkot, titik halte eksisting, jumlah keluarga, fasilitas umum, serta peta administrasi dan penggunaan lahan. Potensi bangkitan dihitung berdasarkan jumlah keluarga pada tingkat desa/kelurahan yang diproyeksikan dari data kecamatan dengan mempertimbangkan proporsi luas permukiman, sedangkan potensi tarikan diperoleh dari keberadaan fasilitas umum. Tahapan analisis meliputi *overlay* pergerakan, analisis *buffer*, serta skoring lokasi halte untuk menentukan kebutuhan penambahan titik halte. Hasil penelitian menunjukkan bahwa distribusi halte eksisting belum merata pada seluruh trayek, dimana terdapat satu trayek, yaitu 14, yang tidak memiliki halte sama sekali. Selain itu, zona dengan potensi pergerakan tinggi belum sepenuhnya terlayani oleh halte yang ada. Penelitian ini menghasilkan peta rekomendasi lokasi halte baru sebanyak 343 titik, dengan 15 halte eksisting dipertahankan serta 163 lokasi prioritas pembangunan halte yang ditentukan berdasarkan hasil skoring spasial. Implementasi rekomendasi tersebut berpotensi meningkatkan keteraturan aksesibilitas menuju berbagai tujuan perjalanan serta mengurangi konsentrasi penumpukan kendaraan pada titik-titik tertentu, sehingga mendukung kelancaran lalu lintas dan peningkatan kualitas pelayanan angkutan kota.

Kata kunci: angkutan kota, halte, bangkitan-tarikan, Garut, *Geographic Information System* (GIS)

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EVALUATION OF BUS STOP NEEDS BASED ON URBAN TRANSPORT ROUTES AND MOBILITY POTENTIAL IN GARUT REGENCY USING GEOGRAPHIC INFORMATION SYSTEM (GIS)

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ABSTRACT

Urban public transportation, particularly angkot (public minivans), plays a significant role in serving daily mobility in Garut City. However, the provision of bus stops as supporting infrastructure has not yet been fully planned from a spatial perspective. This study aims to analyze the distribution of existing bus stop locations along angkot routes, assess the potential of trip generation and attraction along these routes, and determine the required locations for new bus stops to optimize service coverage using a Geographic Information System (GIS) approach. The method employed is spatial analysis, utilizing data on angkot routes, existing bus stop locations, household numbers, public facilities, administrative maps, and land use data. Trip generation potential is calculated based on the number of households at the urban village level, projected from subdistrict data using residential area proportions as weighting. Meanwhile, trip attraction potential is derived from the number of available public facilities. The analysis proceeds with overlaying movement patterns, conducting buffer analysis, and scoring bus stop locations to identify areas requiring additional stops. The results show that the distribution of existing bus stops is not yet evenly distributed across all routes, with one route, namely route 14, having no bus stops at all. In addition, zones with high movement potential are not fully served by existing stops. This study produced a proposed bus stop map consisting of 343 proposed locations, with 15 existing stops retained and 163 locations recommended as priority bus stops based on spatial scoring. The implementation of these recommendations has the potential to improve accessibility organization, reduce vehicle concentration at certain points, and support smoother traffic flow as well as enhanced service quality of urban public transport.

Keywords: public transportation, bus stop, trip generation, Garut, Geographic Information System (GIS)

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