# ABSTRAK

Kota Surakarta merupakan salah satu kota yang terdapat *Bus Rapid Transit* (BRT) atau yang biasa disebut dengan Bus Batik Solo Trans (BST) sebagai salah satu moda transportasi umum. Batik Solo Trans memiliki sistem naik atau turun pada lokasi tertentu yang disebut dengan halte. Akan tetapi, permasalahan yang muncul berupa pelayanan dan ketersediaan halte BST terhadap sekolah dan permukiman. Sehingga perlu dilakukan analisis daerah pelayanan halte bus BST terhadap sekolah dan permukiman yang ada di Kota Surakarta. Bus BST memiliki jumlah koridor sebanyak 6 koridor. Penelitian ini dilakukan dengan menggunakan *service area* dengan jarak sejauh 400 meter untuk mengetahui daerah cakupan layanan dari halte Batik Solo Trans terhadap sekolah dan permukiman yang ada di Kota Surakarta.

Hasil pengolahan *service area* menunjukkan bahwa daerah pelayanan pada *existing* halte bus BST dapat menjangkau 126 SD, 45 SMP dan, dan 21 SMA yang ada di Kota Surakarta. Sedangkan pada permukiman terdapat 43 Kelurahan yang sudah dapat terlayani dengan adanya *existing* halte bus BST yang ada. Adapun jumlah sekolah yang belum dapat terlayani dengan adanya *existing* halte sejumlah 119 SD, 30 SMP, dan 11 SMA. Sedangkan terdapat 8 Kelurahan yang belum terjangkau berada pada Kelurahan Sangkrah, Sewu, Gandekan, Mojosongo, Jagalan, Kadipiro, Banjarsari, dan Joglo. Kemudian dilakukan rekomendasi potensi halte bus BST agar dapat melayani sekoah dan permukiman yang terdapat di Kota Surakarta. Adapun halte bus BST yang diberi rekomendasi sebanyak 11 halte. Sejumlah 3 halte yang direkomendasikan pada lokasi sudah terdapat halte, tetapi digunakan sebagai angkot feeder. Setelah adanya rekomendasi halte baru terdapat 1 SMA, 4 SMP, dan 24 SD yang semulanya tidak terlayani oleh halte bus BST menjadi terlayani. Namun, setelah dilakukan rekomendasi potensi halte masih terdapat sebanyak 99 SD, 27 SMP, dan 10 SMA yang tidak dapat terjangkau oleh halte karena lokasi sekolah yang berada jauh dari jalanan yang dapat dilalui oleh bus.

Berdasarkan rekomendasi potensi halte, maka dilakukan validasi halte baru tersebut dengan *service area* dan disesuaikan jarak *service area* dengan jarak pada Google maps. Hasil menunjukkan bahwa terdapat tiga sekolah yang memiliki jarak tidak sesuai. Adapun tiga sekolah tersebut merupakan SMP Muhammadiyah 4 Surakarta, SD N Nayu Barat 1, dan SD N Nayu Barat II. Perbedaan jarak tersebut dikarenakan perbedaan rute yang dilalui dan terdapat perbedaan akuisisi jaringan jalan pada jalan lingkungan sekunder antara Google Maps dan data yang diperoleh.

**Kata Kunci** : Batik Solo Trans, Daerah Pelayanan, *Network Analysis*, Permukiman, Sekolah

# ABSTRACT

Surakarta City is one of the cities that has a Bus Rapid Transit (BRT) or commonly known as the Batik Solo Trans (BST) Bus as a mode of public transportation. Batik Solo Trans has a system of going up or down at certain locations called bus stops. However, the problems that arise are in the form of services and the availability of BST stops for schools and are worried. So it is necessary to analyze the BST bus stop service areas for schools and ATMs in Surakarta City. The BST bus has a total of 6 corridors. This research was conducted using a service area with a distance of 400 meters to determine the range of services from the Batik Solo Trans bus stop to schools and services in Surakarta City.

The results of service area processing show that the service area at the existing BST bus stop can reach 126 elementary schools, 45 junior high schools and 21 high schools in Surakarta City. Meanwhile, in settlements there are 43 urban villages that can already be served with existing BST bus stops. The number of schools that have not been served by the existing bus stops is 119 elementary schools, 30 junior high schools, and 11 high school. Meanwhile, there are 8 sub-districts that have not been reached in Sangkrah, Sewu, Gandekan, Mojosongo, Jagalan, Kadipiro, Banjarsari, and Joglo sub-districts. Then a recommendation is made for the potential of the BST bus stop so that it can serve schools and settlements in the city of Surakarta. The recommended BST bus stops are 11 stops. A number of 3 recommended bus stops at the location already have bus stops, but are used as feeder angkots. After the recommendation for a new bus stop, there were 1 high school, 4 junior high schools, and 24 elementary schools which were not previously served by the BST bus stop. However, after the recommendations for potential bus stops were made, there were still 99 elementary schools, 27 junior high schools, and 10 high schools that could not be reached by bus stops because the schools were located far from roads where buses could pass.

Based on recommendations for potential bus stops, the new bus stop is validated with the service area and the distance between the service area and the distance on Google maps is adjusted. The results show that there are three schools that have inappropriate distances. The three schools are SMP Muhammadiyah 4 Surakarta, SD N Nayu Barat 1, and SD N Nayu Barat II. The difference in distance is due to the different routes that are traversed and the differences in ownership of the road network on secondary environmental roads between Google Maps and the data obtained.

**Keywords :** Batik Solo Trans, Network Analysis, School, Service Area, Settlement