

**EVALUATE THE RELATIONSHIP OF PARKING
VOLUME WITH LAND USE, URBAN DENSITY,
CAPACITY OF THE ROADS AND ACCESSIBILITY IN
KURUNEGALA MC AREA.**

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Sri Lanka

January 2026

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**Thesis submitted in partial fulfillment of the requirements for the
Master of Spatial Planning Management and**

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January 2026

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ACKNOWLEDGMENT

I consider myself extremely fortunate to have received this support and advice during the course of my research because it was essential to the success and result of the project. I owe everyone my sincere appreciation for their support, principles, and suggestions, as well as for their support and, most importantly, for their dedication to this research's success.

It is my primary responsibility to pay profound gratitude to my supervisor Dr. Chameera De Silva for his gentle guidance, advice, and encouragement that contributed to the successful completion of this research.

Further, I pay my gratitude to all the lecturers at the Department for their outstanding assistance provided to undertake this Research with appropriate direction.

I also place on record, my sense of gratitude to my family members, and classmates for giving me exceptional guidance and supports to complete the study appropriately as well as one and all, who directly or indirectly, have given their support in this venture

ABSTRACT

Countries like Sri Lanka is having a well urbanized were having huge traffic congestion even at the off-peak time. As per the City of Kurunegala Development Plan Prepared for 2021-2030, road density in Kurunegala city is similar to the road density of other developed countries. Since the public transportation system in the city is weak, many people tend to use their vehicles for daily traveling purposes and it causes high traffic in the peak time.

As knowledge was investigated, build-up form has a direct impact on the making of trips and mobility. However, most of the literature also found that making a new trip depends on factors of travel behavior such as travel demand and travel supply. However, there is a lack of empirical evidence using parking-based indicators in medium-sized Sri Lankan cities. According to the theory of accessibility, a trip is not normally an end in itself but more of a means to make another trip for the activity. Hence, it is clear that travel behavior in a particular area represents the real relationship between urban factors.

The study examines the level of accessibility in the selected research study area by analyzing parking volume as a proxy indicator of vehicle-based spatial attraction, rather than as a direct measure of trip generation. Parking volume represents the concentration of vehicle arrivals attracted to a location due to its accessibility characteristics. To assess this relationship, key urban form factors namely capacity of road, land-use mix, and urban density are quantified for the selected sample locations. The analysis focuses on identifying how variations in this accessibility related urban parameters are associated with differences in measured parking volumes within the specific urban area.

Based on the regression analysis, the accessibility index is the main factor that affects the parking volume and other measured indices like Capacity of Road index, Density index, and land use mix index have lower significance when compared to Accessibility. However, those independent factors and dependent factor were also related by 59.8% in regression model. Hence, the accessibility is the one of major factors to be considered in the urban planning and transport planning as a tool for their decision-making process as well as molding process.

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