

Project: [Deficiencies in Public Transit Accessibility of Healthcare Facilities in Chicago](#)

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### Summary

Public transportation has the potential to impact the accessibility of individuals to healthcare facilities and affect the quality of life and the livability of a community. It is critical, therefore, to understand the service efficiency of public transportation as a mode of access to healthcare facilities. In this study, we develop performance measures/indices that will reflect on both the supply (availability) and the demand side (accessibility). The indices are then applied in the Chicago area.

While there are different indicators for measuring availability, for the purposes of this research we focus on three indicators - the frequency of service, hours of service, and the service coverage. These measures are aggregated into an index for transit availability. The index is a measurement of the percent of person-minutes served. For a given geographic area, the index multiplies the percent of area served by transit by the percent of an hour that a station or stop is served (assuming a five-minute wait time) by the percent of a day that the area is served by transit. The index range is between zero and one for each census block group.

The public transit accessibility serves as a proxy for the travel demand at (or near) the locations of healthcare facilities using public transit. Among the several approaches to measuring transportation accessibility this research uses the generalized gravity model framework with public data in the Chicago region to develop a public transit accessibility index. The index measures the aggregate peak-period public transit accessibility potential to the locations of healthcare facilities for each residential zone in the Chicago area. The neighborhood with the highest such accessibility measure is the one with best public transit access, as measured by friction factors to all healthcare facilities in the region.

Both the indices ranging from zero to 100% are then split into four groups using the median values of the two indices: high-high group, high-low group, low-high group, and low-low group. Census Block groups in the low-low category are deemed deficient in both public transit accessibility and availability of healthcare facilities in the Chicago area, and several policy interventions are proposed to improve and address the situation. In this regard, this project has successfully demonstrated techniques that could add to the battery of tools available to study public transportation barriers to healthcare.

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