

# Spatial accessibility of public healthcare facilities: The case of City of Tshwane in South Africa

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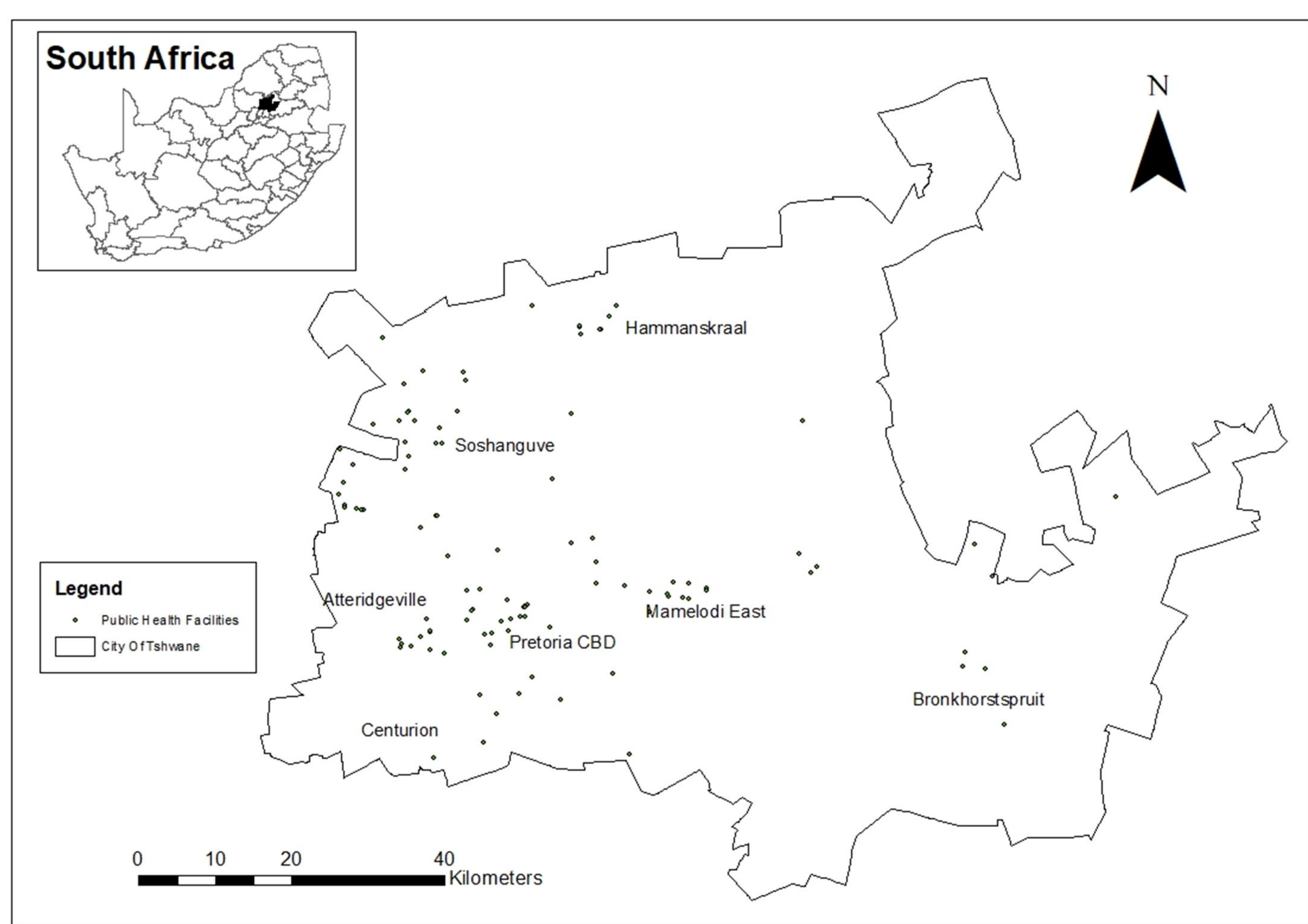
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## Introduction



Source: Lauren Mulligan

Primary healthcare is fundamental for improving and keeping up with the wellbeing of a populace. Spatial accessibility is presented as a significant factor in obtaining healthcare services. Health system planning should therefore take into consideration the location of healthcare facilities in relation to the community they are planned to serve, as well as to ensure that the appropriate administrations are available to the general public and that no one is geographically marginalized. The study aims to assess the spatial accessibility of public healthcare facilities in City of Tshwane, South Africa.



## Methodology

Geographical locations of healthcare facilities for the study area were obtained from the Department of Health. Kernel density analysis was used to map spatial accessibility of the facilities. Kernel density can be calculated for the density of features within an area and for both point and line features (Murad, 2018).

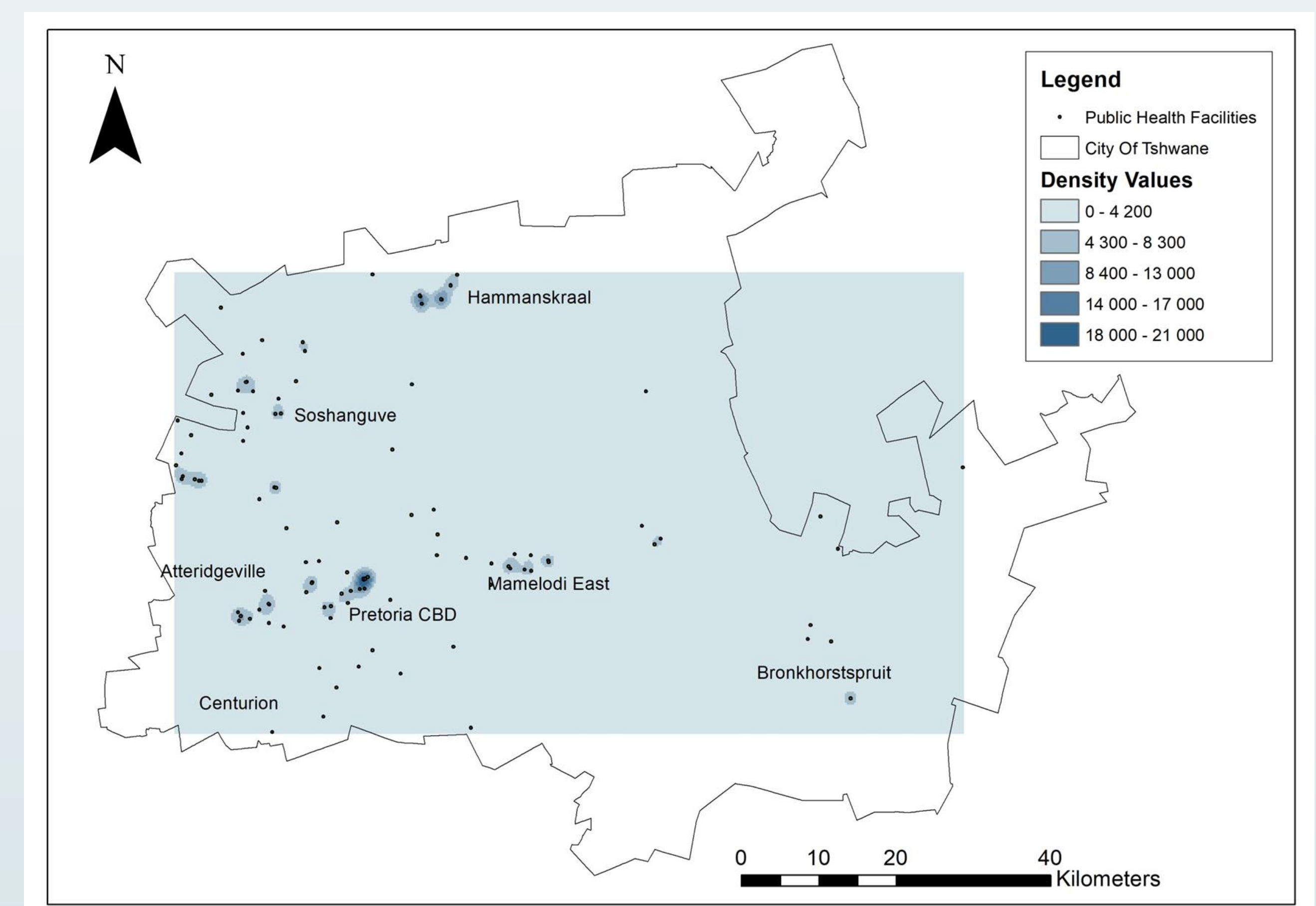
$$Density = \frac{1}{(radius)^2} \sum_{i=1}^n \left[ \frac{3}{\pi} \cdot pop_i \left( 1 - \left( \frac{dist_i}{radius} \right)^2 \right)^2 \right]$$

For  $dist_i < radius$

Source: ESRI, 2019

## Results

The results showed that public health facilities were clustered around Pretoria CBD. Additionally, the findings indicate that there is distance decay in terms of spatial access to public healthcare in places such as Soshanguve, Atteridgeville, Mamelodi, and Bronkhorstspuit.



## Conclusion

Findings show spatial inequality in access to public healthcare facilities in City of Tshwane. To ensure that all communities have access to healthcare and that there are enough public healthcare facilities, further efforts must be made.

## Acknowledgements

The National Department of Health is acknowledged for the public healthcare facilities data.