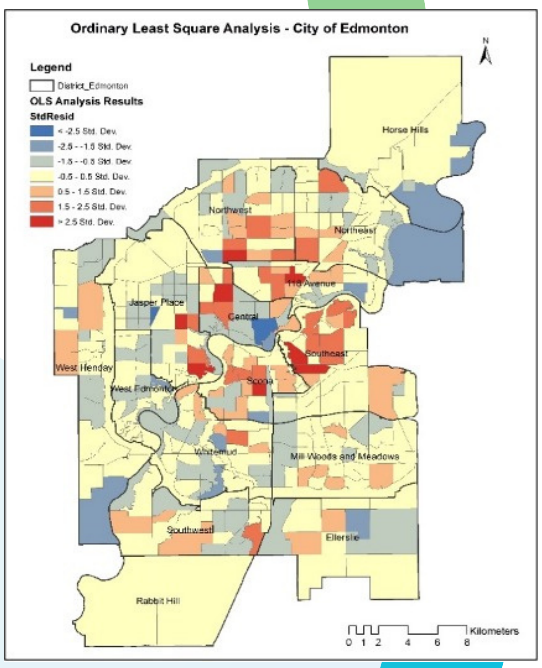
UNIVERSITY OF ALBERTA

ANNUAL REPORTEXPLORING THE HOUSING ATTRACTION USING SPACE SYNTAX TECHNIQUE: A CASE OF EDMONTON

Residential location decisions play a vital role in urban planning. Residential location decisions impact the evolution of the built environment, transport, land use, and urban form change as a response to the needs of the resident population. This study attempts to explore the residential choice behaviors in Edmonton using the Space Syntax mapping technique, which has different approach to overcome limitations of the current methods. The Space Syntax mapping, Multiple Regression analysis and Ordinary Least Squares analysis were conducted to explain the residential choice in Edmonton, a major city of a more than one million residents in Western Canada.



Distribution of Housing in Edmonton, OLS analysis Residual Map

The analysis results show that the MRA and an OLS model can fit statistically with the dataset because the correlation coefficient of MRA (0.7585) indicates a relatively strong linear relationship. In the study, school density, availability of green spaces and parks, non-residential land use, crime rate, the mean integration level of each neighborhood's roads and transit mode were considered as the main predictors of residential location choice.

By developing and then analyzing the space syntax map and other related maps of Edmonton the results indicate that residents of Edmonton prefer to reside in areas with moderate-level integrated roads, and the integration values range between 28 to 39, which emphasize the validity of using space syntax as a model to spatially understand the residential location choice behaviors.

Space Syntax Map of Edmonton, created usinh City of Edmonton road network, 2023

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