Measuring accessibility to the Perth food environment using methods from community ecology and open, crowdsourced data

**ABSTRACT**

Measures of accessibility to the food environment must go beyond proximity and density of supermarkets and fast food and attempt to capture the complexity of the food environment, accounting for the different food store types and their diversity and facilitate classification of food environments according to the availability, accessibility, and acceptability of outlets. The advent of novel spatial techniques, combined with increasing access to open data sources, enable generating new insights as well as validating results obtained with more traditional data collection techniques. This project applies these innovative techniques and data in measuring accessibility to the food environment.

Standard measures of food accessibility were calculated for all census mesh blocks in the Perth Metro area, along with novel measures aimed at quantifying the diversity of food store types. Food outlet data came from Yelp Fusion API and the analysis was run on both Yelp and standard business directory data for comparison.

The Perth food environment was classified into five categories differentiated by the diversity and density of food outlet types, with accessibility and diversity measures decreasing as one moves further from the inner suburbs. The analysis can be easily replicated for different locations or time periods using the R-based tools produced. While the complexity of food accessibility cannot be captured by spatial indicators alone, knowing the food landscape is useful for understanding exclusion and guiding policy interventions.

**BIOGRAPHY**

Eleanor Cervigni is a PhD student in Geography and Planning at the University of Western Australia, studying urban food accessibility for the elderly. She has a background in spatial information management, having worked in spatial systems development for fire management in Western Australia and as a GIS expert and Research Fellow at the United Nations in Geneva.