Urban Planning & Cultural Diversity

COMP20008 ELEMENTS OF DATA PROCESSING PROJECT PHASE 4

WEI HOW NG (828472)

Research Question

- *"Does housing prices and policies affect language and cultural diversity in Victoria?"*

- *"Could proper urban planning and change of real estate policies be useful to improve spatial segregation if present in Victoria"*

Foreign Investment Review Board approval

If you are a foreign resident you cannot buy an established residential dwelling in Australia, either directly in your name or through a trust relationship or company structure. Penalties apply for breaching this rule.

You can buy other types of Australian residential property, such as new dwellings, vacant land and property that is to be redeveloped, but you must first get approval from the Foreign Investment Review Board.

If you are a temporary resident you can buy an established dwelling if you use it as your residence in Australia and get approval from the Foreign Investment Review Board.

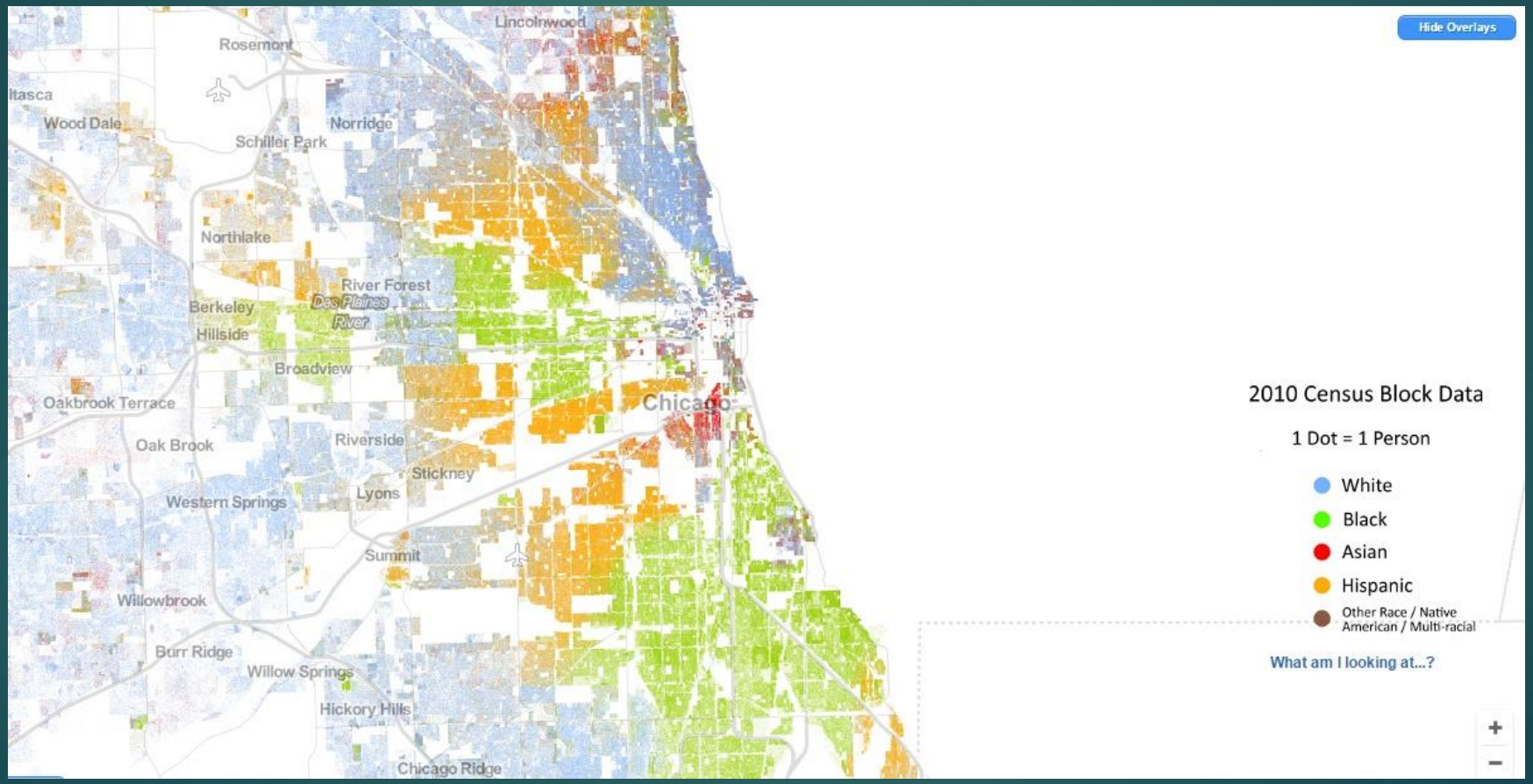
Under Australia's foreign investment framework, foreign persons generally need to apply for foreign investment approval before purchasing residential real estate in Australia.

The Government's policy is to channel foreign investment into new dwellings as this creates additional jobs in the construction industry and helps support economic growth. It can also increase government revenues, in the form of stamp duties and other taxes, and from the overall higher economic growth that flows from additional investment.

Australian Foreign Investment policies

Real Estate policies affect all visitors, investors, temporary residents and new immigrants.

Spatial Segregation & Cultural Pockets



Spatial Segregation & Cultural Pockets

- Increased immigration into Victoria in the recent years have caused speakers of languages of Asian origins to almost double.
- Housing Policies affect where people buy their houses
- Enclosed areas with a singularly high language concentrations are starting to become prominent
- Good to identify socio-cultural problems from the start

Data Sets

- Victorian Property Sales Report – Median House Prices by Suburb 2005-2015
  Real Estate Prices of new dwellings
- ABS Census Data Pack – T01 Selected Person Characteristics
  Population Density Data for each region
- ABS Census Data Pack – T10 Language Spoken at Home by Sex
  Language Data to determine lingual and cultural diversity
- ABS Australian Statistical Geography Standard – SA2 to LGA 2011 Data
  Region names and code matching data

Methodology – Wrangling

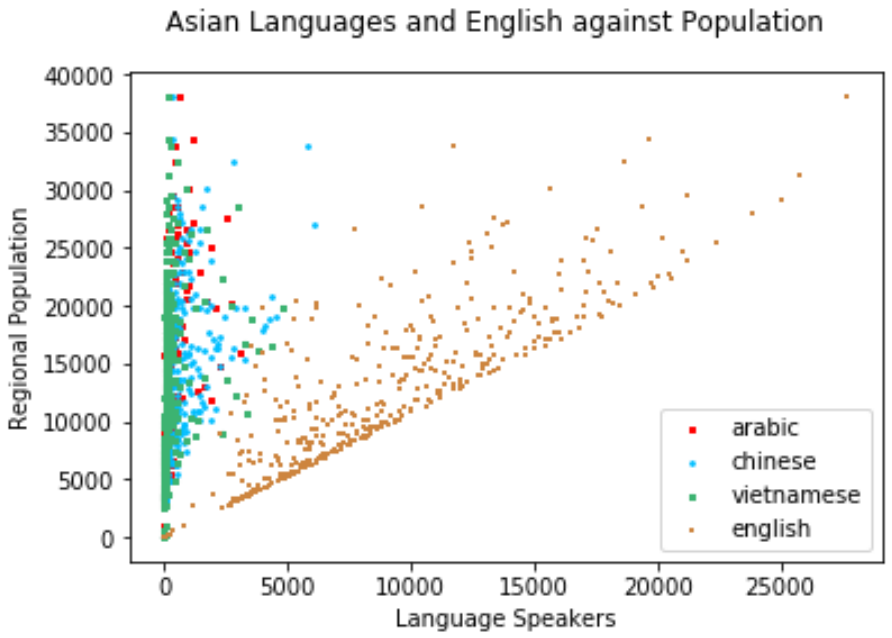
- Year 2011 Data taken from Housing Prices, Languages and Population Data Sets.
- Top 6 Languages Spoken in Victoria Selected including English-Only Arabic Languages, Chinese Languages, English Only, Italian, Greek and Vietnamese
- 2011 Total Persons per area extracted from Population dataset
- Housing Prices data set had their null values replaced by region average
- Operations not performed on areas with zero populations to avoid division by zero when finding concentration of language
- The region names were put into strings and standard lower cases

Methodology – Implementation

- 1-gram string matching algorithm to match different region names in data
- Region names further confirmed and matched by recombining data
- Concentration of language calculated for each region in used set
- Languages mapped out into heat maps
- Concentration and Population of languages onto scatter plots
- Case studies were done on areas with similar population but different language concentration; Particularly English Only speakers and Chinese languages speakers.
- Housing Data referenced in the case studies

Results

- English Only speakers have almost perfect positive correlation with population as expected, unlike Greek or Italian
- Chinese language concentration showed further spread Comparable to Greek and Italian
- Vietnamese speaking have cheapest house to language density
- Several areas identified with rising concentrations of only one language due to real estate pricing


Asian Languages and English against Population
Regional Population
Language Speakers
arabic
chinese
vietnamese
english
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5000
10000
15000
20000
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30000
35000
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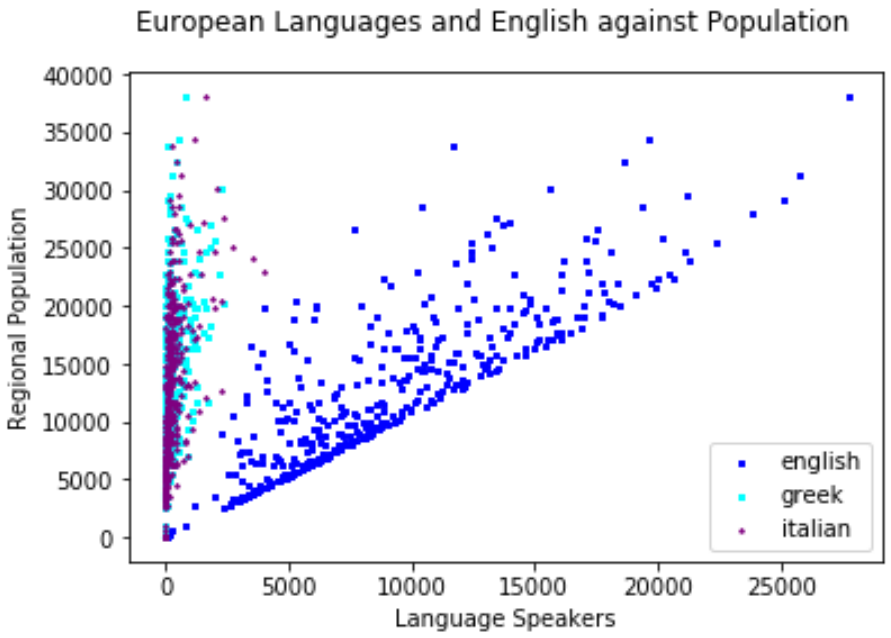
European Languages and English against Population
Regional Population
Language Speakers
english
greek
italian
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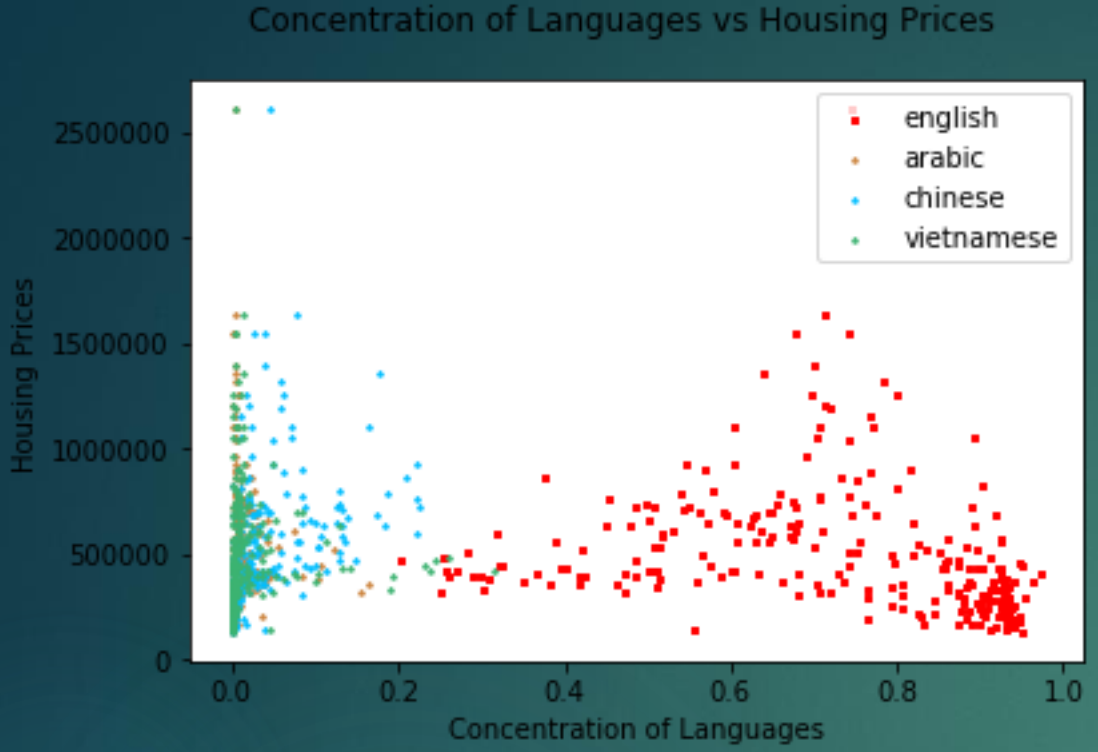
Concentration of Languages vs Housing Prices
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arabic
chinese
vietnamese
Housing Prices
Concentration of Languages
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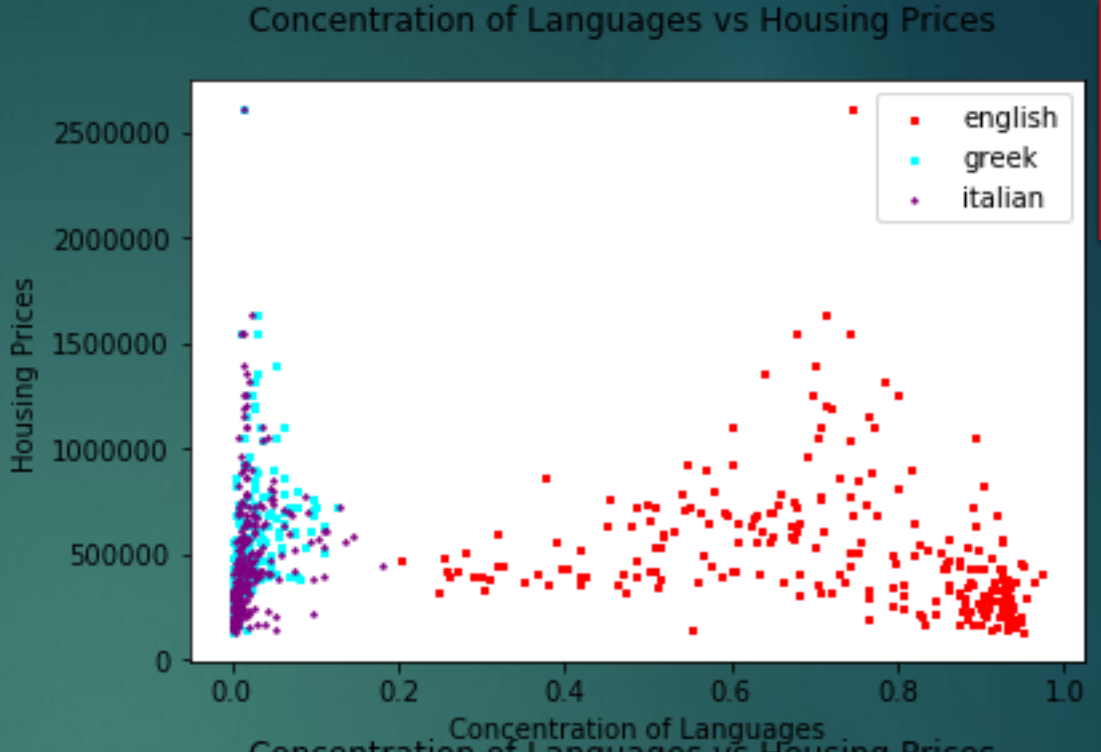
Concentration of Languages vs Housing Prices
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Housing Prices
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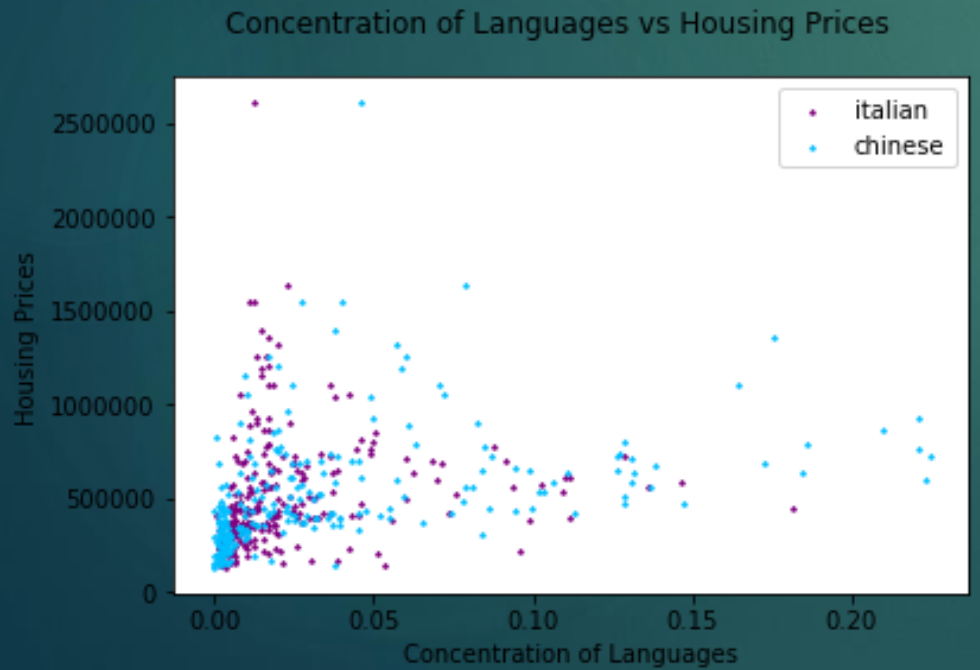
Concentration of Languages vs Housing Prices
italian
chinese
Housing Prices
Concentration of Languages
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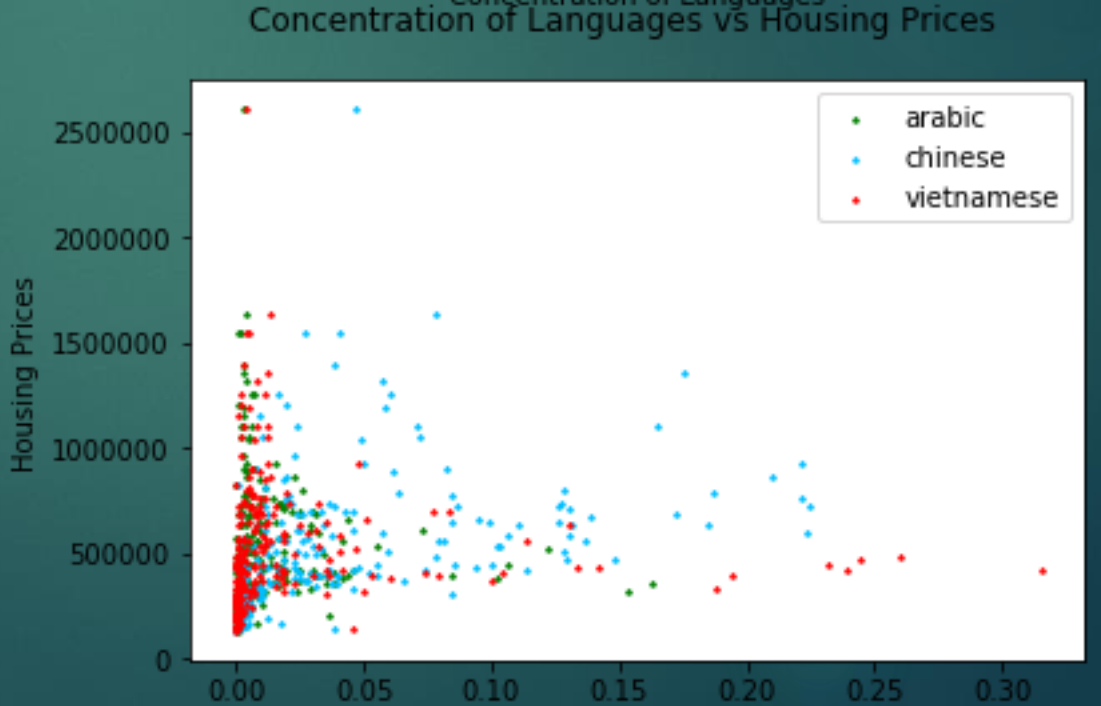
Concentration of Languages vs Housing Prices
arabic
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Housing Prices
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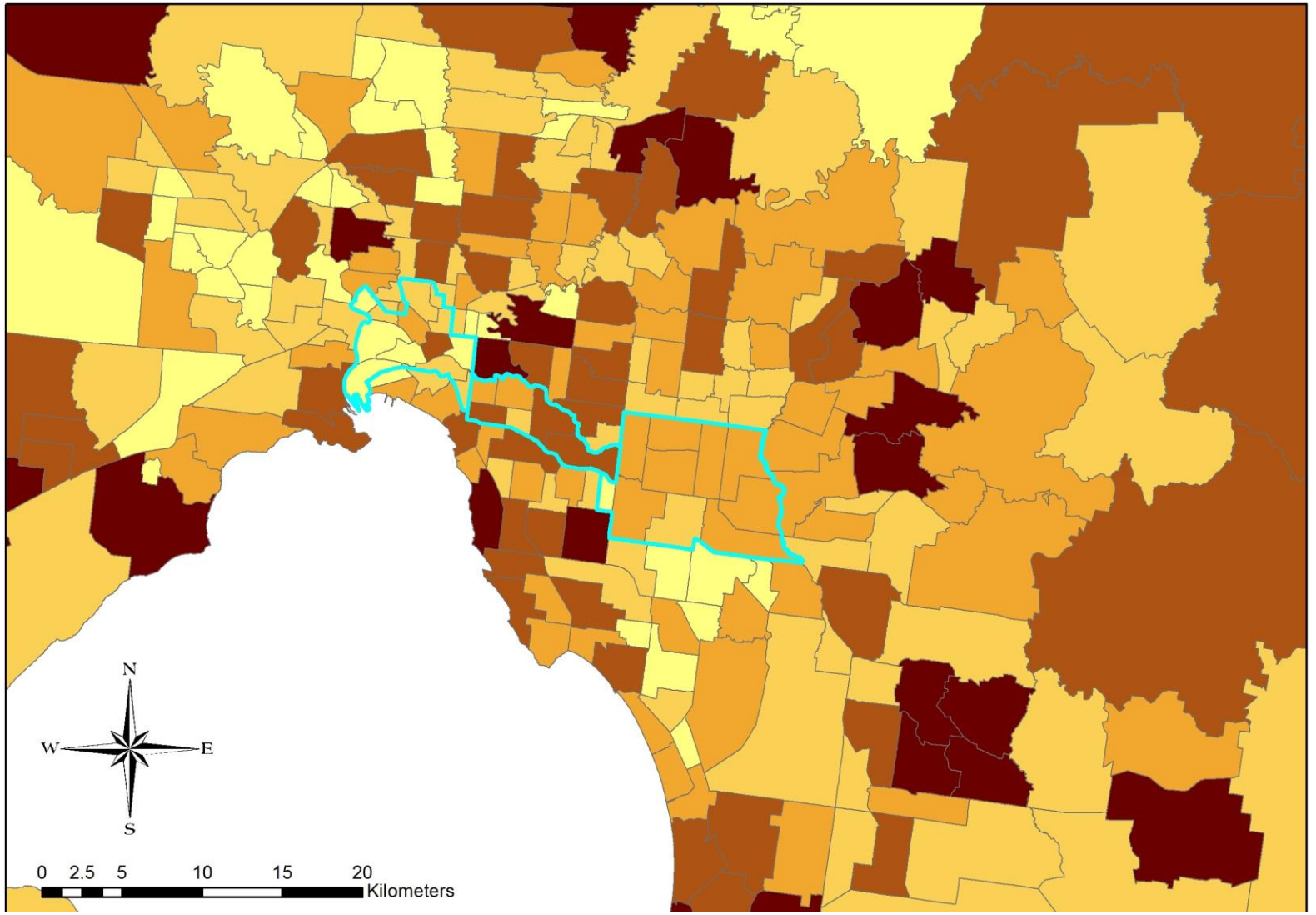
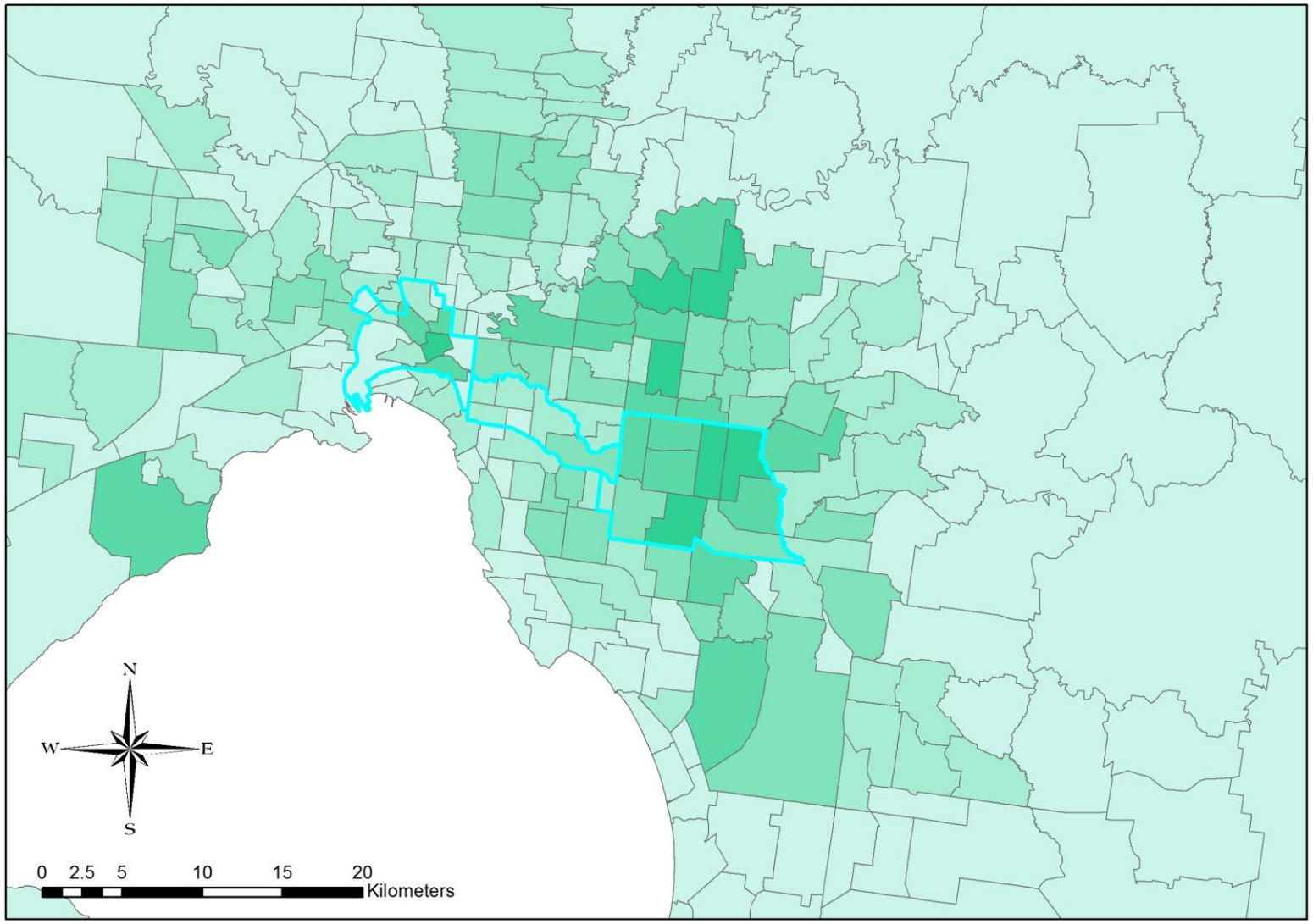
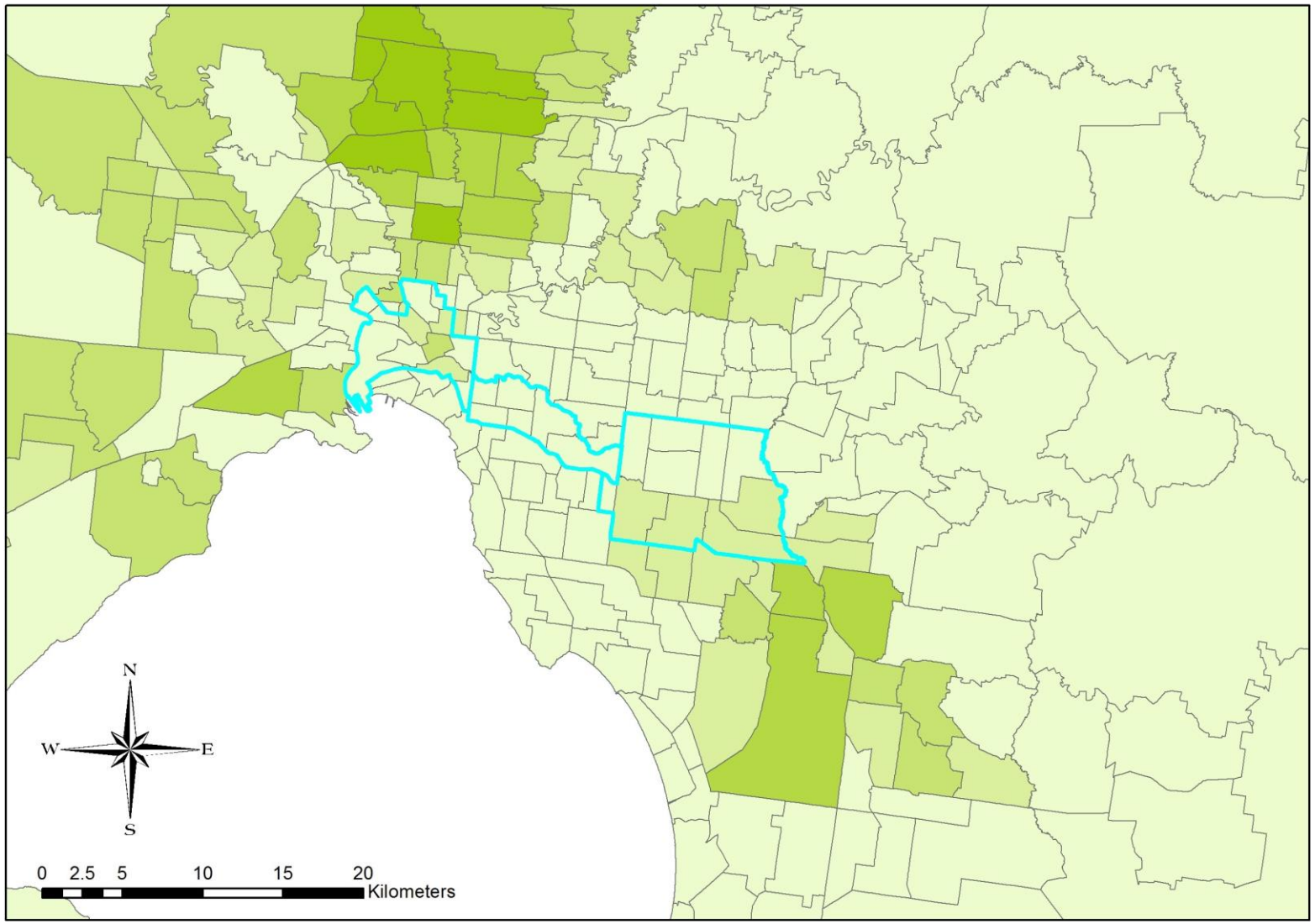
Density of the English Only Speakers 2011



Density of Chinese Languages Speakers 2011



Density of Arabic Languages Speakers 2011



	Dominant Language (Con)	Population	Housing Prices
Box Hill North	0.173 (Chinese)	16335	683000
Brighton East	0.770 (English)	15221	1100000
Meadow Heights	0.154 (Arabic)	14859	321500

Challenges & Reflection

- Better string matching algorithm could be implemented into matching region names
- Population density mapped onto a scatter plot with languages does not visualise the relationship between three factors well enough
- Heat maps could be more area specific like the American ones
- Selection of areas to conduct the case studies is manual and inefficient

Thank You

QUESTIONS?