Understanding Regional Patterns in Aboriginal Housing

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ARC Indigenous Discovery

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AUSTRALIA

- School of Architecture
- Institute for Social Science Research
- School of ITEE

Indigenous Housing

- Inferior housing & inferior neighbourhoods
- Low home ownership
- Greater overcrowding
- Greater homelessness
- More live in public housing
- Move house more frequently

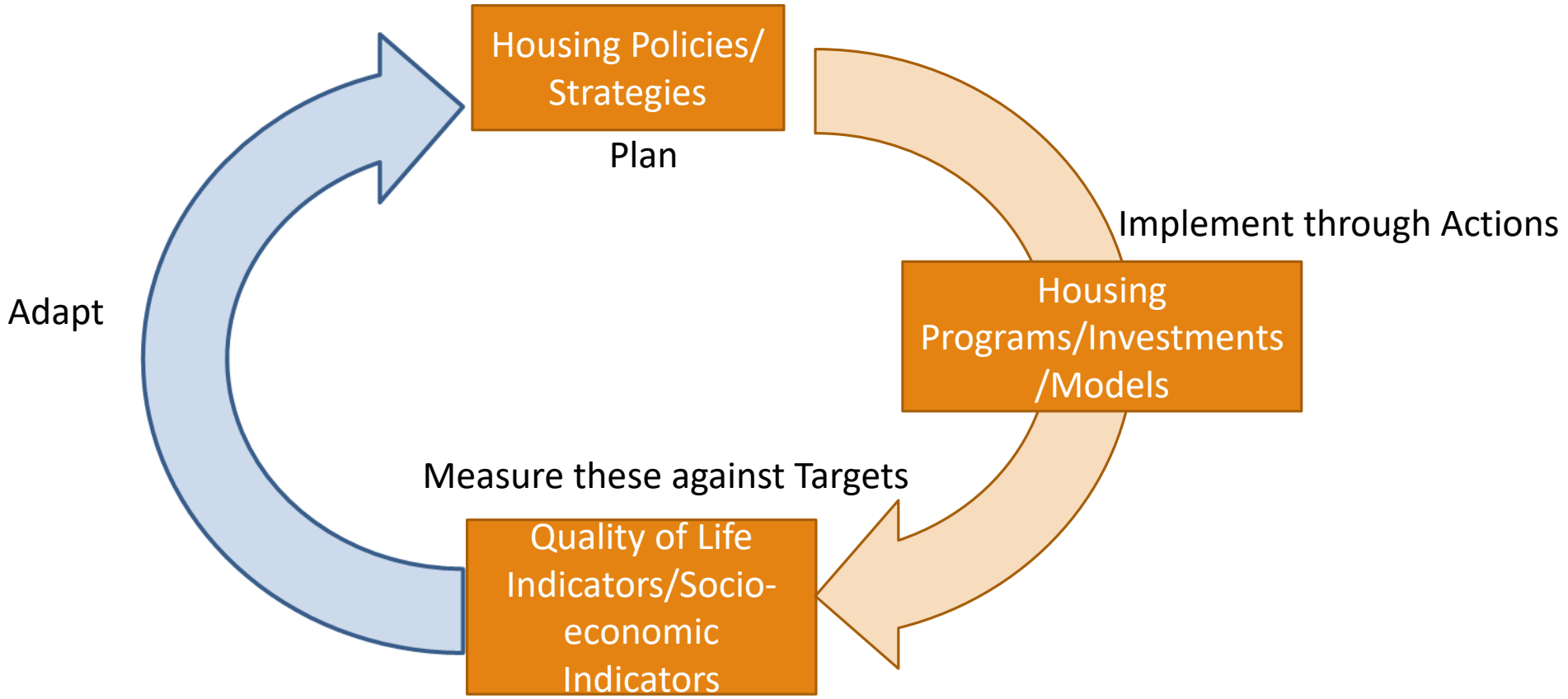
-> Adverse impact on health, well-being and education of children and adults

https://thestringer.com.au/from-secret-country-to-forgotten-peoples

Aims

- Understand how regional and contextual factors, impact on Aboriginal housing needs
- Identify the most relevant, reliable, available datasets - to generate accurate indicators of housing needs (housing stress and homelessness)
- Integrate *quantitative and qualitative data sets* at a regional scale to develop reliable housing needs analysis model(s)
- Provide Web Portal to: integrated data sets, mapping tools, spatio-statistical analysis tools

Evidence-based Policy Making
Remote, Rural, Metropolitan Areas



Aggregated Data Sets

- Quantitative data:
  - ABS data on Aboriginal health and welfare, population and housing;
  - AEDC Indigenous Early Childhood data
  - Social and Economic Indicators for Indigenous Communities - CAEPR;
  - RSEO - Index of Relative Indigenous Socioeconomic Outcomes;
  - Other - State/Territory Housing Departments, ICHOs and Community Councils (Indigenous Community Housing (ICH) data).
- Qualitative data:
  - LSIC – Longitudinal Study of Indigenous Children;
  - 2002 and 2008 National Aboriginal and Torres Strait Islander Survey (NATSISS);
  - HILDA (Household, Income and Labour Dynamics in Australia) Survey;
  - LSAY (Longitudinal Study of Australian Youth).
- Literature/Publications: AHURI, AIHW and FaHCSIA reports;
- Map sources: ATSIC boundaries/Geosciences Australia; ABS ILOCs, IREGs, IAREs, LGAs, SA1, SA2, SA3, SA4

Researcher-defined Hypotheses

- Areas with the greatest housing demand are not necessarily the most remote
- High overcrowding -> poor educational and health outcomes -> crime, domestic violence
- Current housing services (loans, commonwealth rental schemes, housing programs) – aren't focussed on areas with greatest demand
  - Palm Island – vacant new houses
  - Doomadgee, Nhulunbuy – discrete communities – more adequate housing
  - Winton, Dubbo – high homelessness, high overcrowding – rural towns

Midja System http://www.midja.org

Web Interface enables users to:

1. Select regions of interest (e.g. States) and geographic level (Local Government Areas (LGAs))
   - Australia, Queensland, Tasmania
2. Filter out LGAs that don't meet criteria (no. of Indig. Households<20; Remoteness)
3. Select datasets of interest – e.g., Need 1 or more bedrooms, Year 12 Completions
4. Overlay selected datasets on a map – using choropleths (colour-coded LGAs) and bubbles
   - Pan and zoom using map interface
   - Left click on an LGA -> Displays ABS data for that LGA
5. Graphically present data on scatter plots
6. Apply simple statistical analyses to the data sets (e.g. Linear Regression)

Choose a Place Required

New South Wales STATE

Choose a comparison place Optional

Search for a place

291 ILOCs are selected.

Remoteness

Only show ILOCs with this remoteness level.

- All
- Remote Australia
- Inner Regional Australia
- Major Cities of Australia
- Very Remote Australia
- Outer Regional Australia

Topics of interest

Choose topic(s) of interest Required

Percentage Of Indigenous Persons

Year 12 Completion Indigenous

Show only proportional variables

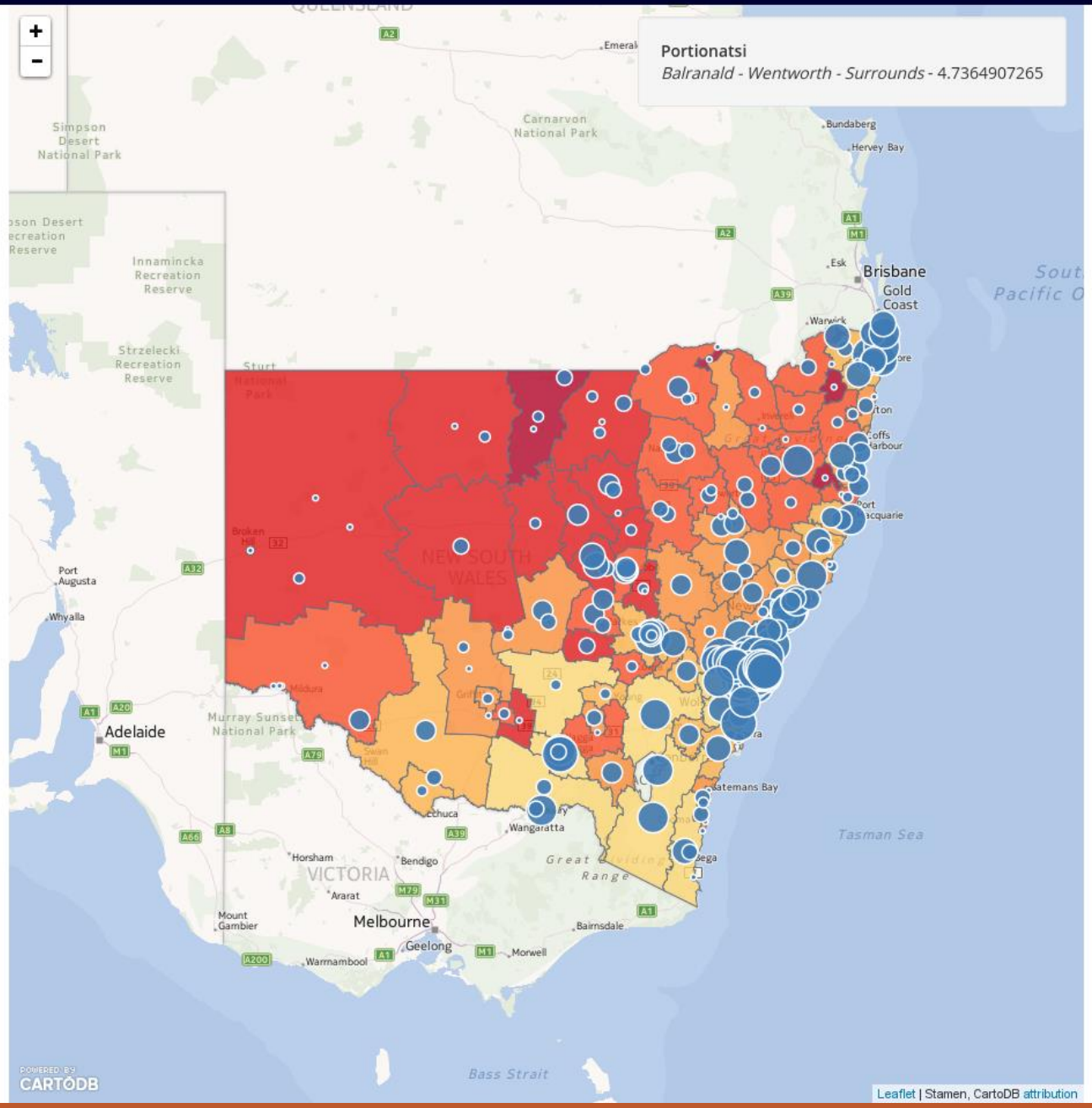
Click in the box again to add another topic of interest.

Map Visualisation

Choropleth

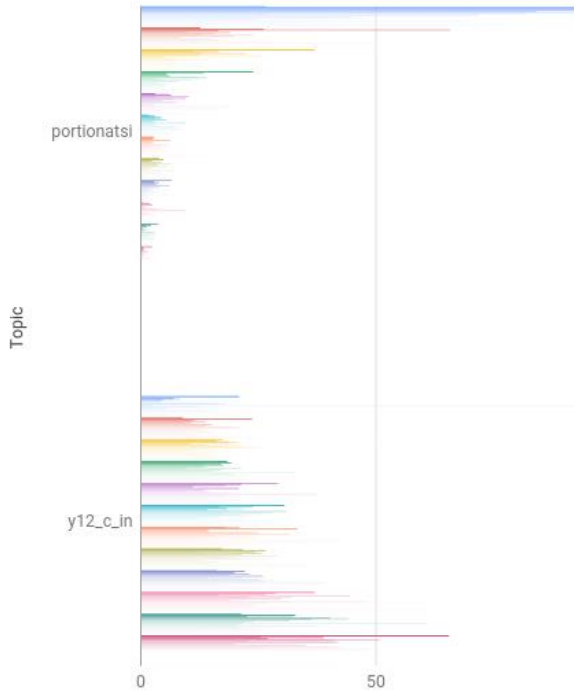
Percentage Of Indigenous Persons

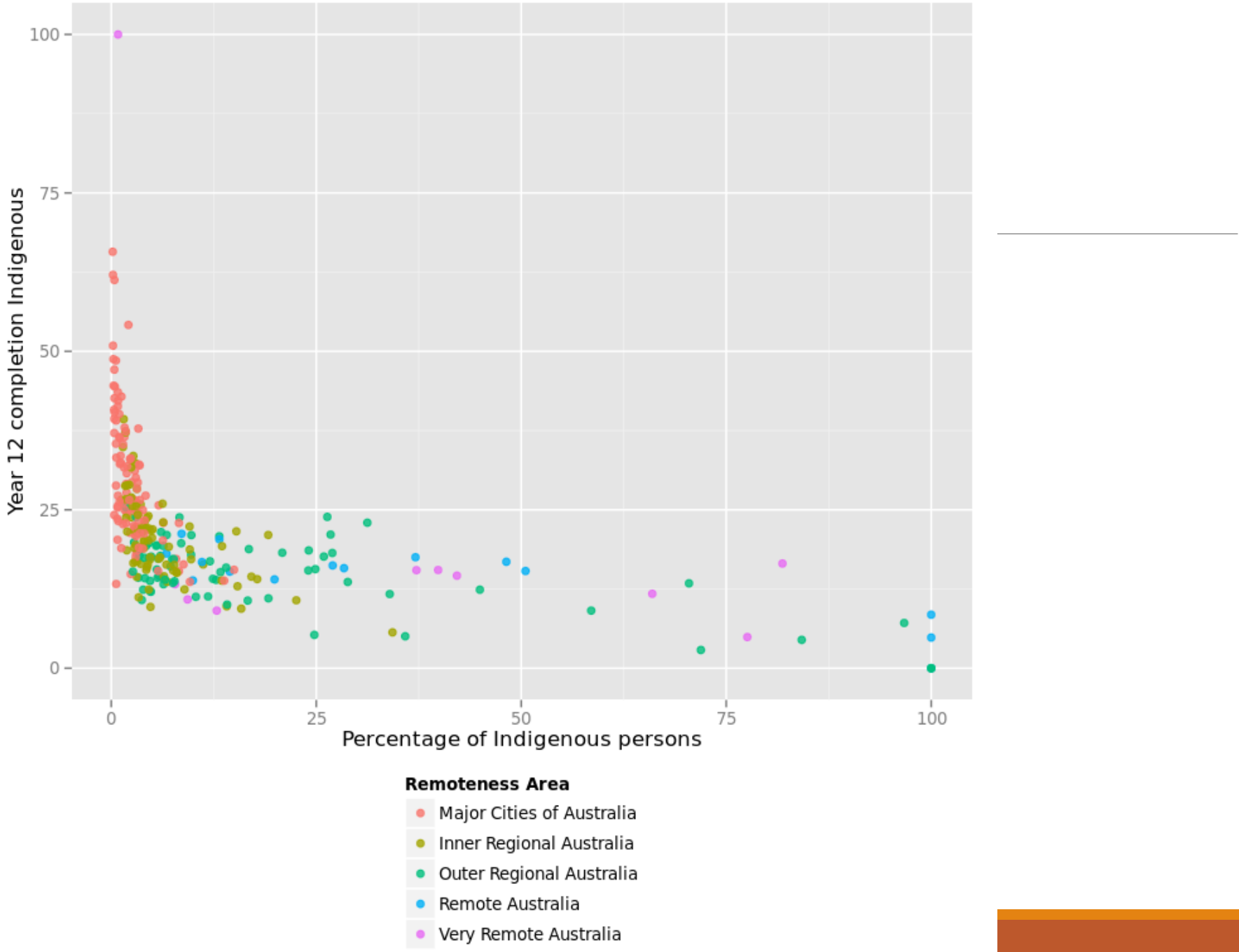
Bubble Optional



Data

Topic	La Perouse	Upper Hunter	Ashfield	B
Percentage of Indigenous persons (portionatsi)	26.7549667358	100	96.7033004761	1
Year 12 completion Indigenous (y12_c_in)	21.09375	0	7.142857143	8




Year 12 completion Indigenous
100
75
50
25
0
0
25
50
75
100
Percentage of Indigenous persons
Remoteness Area
Major Cities of Australia
Inner Regional Australia
Outer Regional Australia
Remote Australia
Very Remote Australia

Plots

Scatter plot

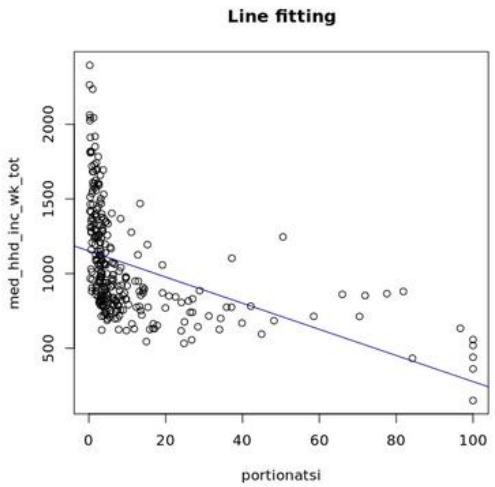
Linear Regression

Choose a dependent variable Optional

Median Household Income

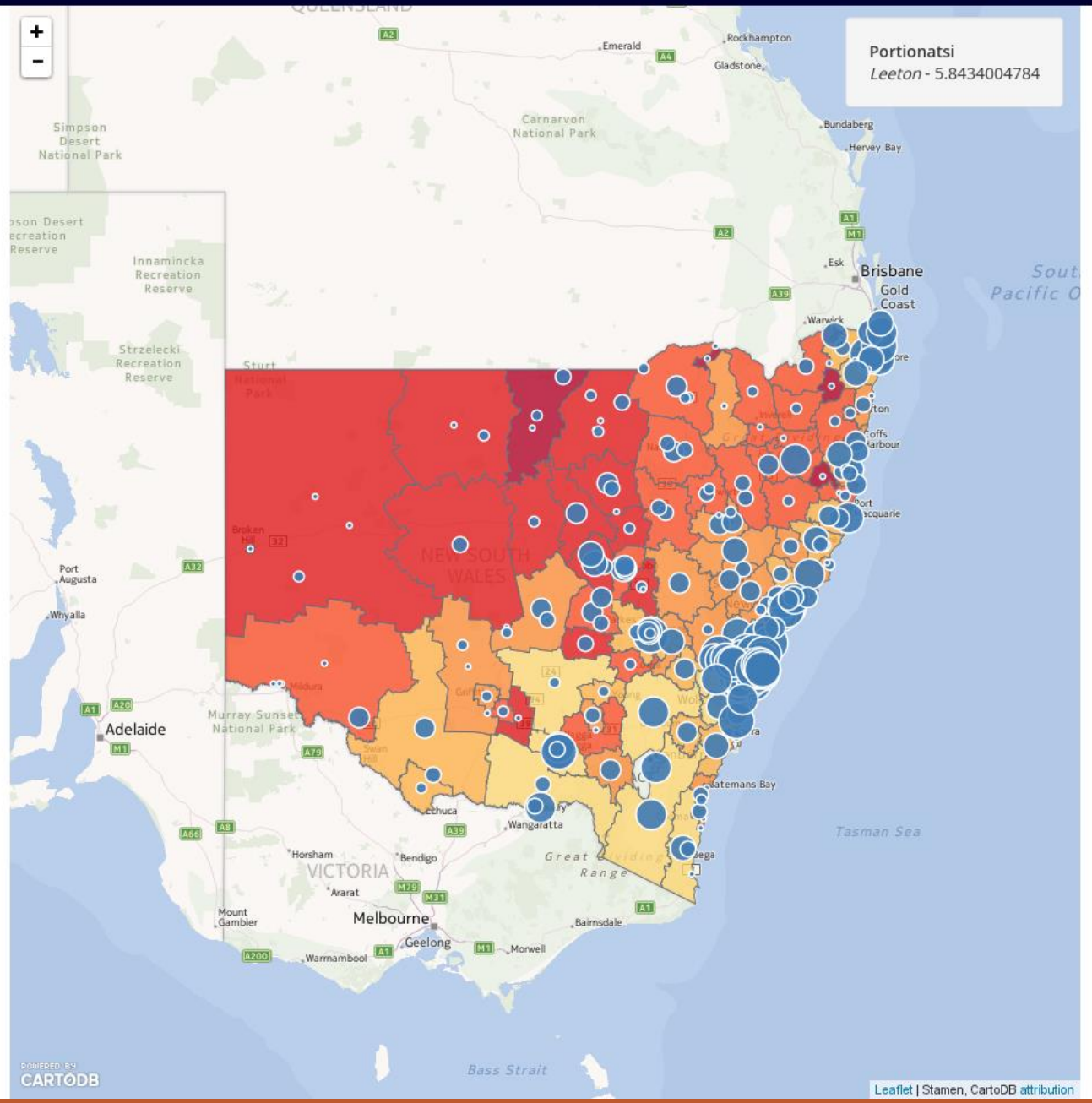
Choose independent variables Optional

Percentage Of Indigenous Persons



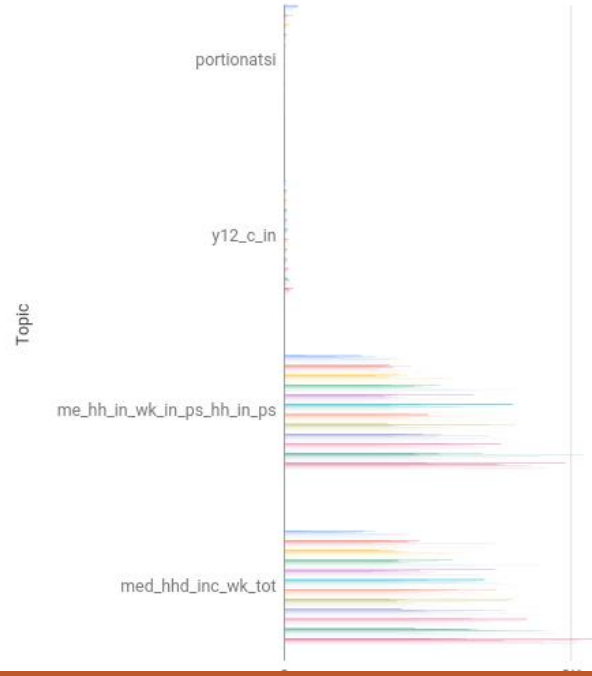
R Squared
0.19509
Equation
med_hhd_inc_wk_tot = 1151.51627818869 - 8.750483 * portionatsi

Download PDF

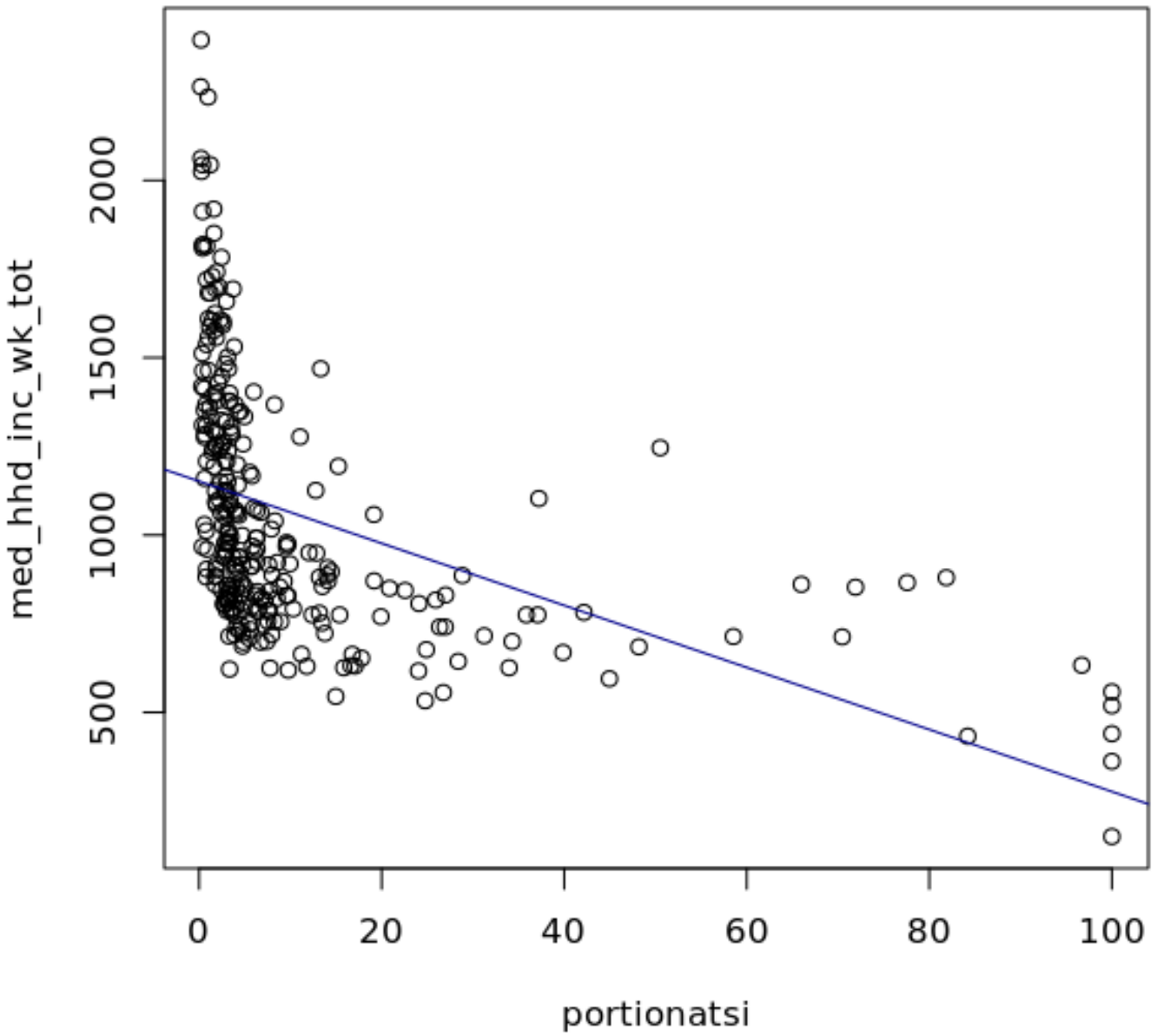


Data

Topic	La Perouse	Upper Hunter	As
Percentage of Indigenous persons (portionatsi)	26.7549667358	100	96
Year 12 completion Indigenous (y12_c_in)	21.09375	0	7.1
Median Household Income – Indigenous persons (me_hh_in_wk_in_ps_hh_in_ps)	541	150	63
Median Household Income (med_hhd_inc_wk_tot)	556	150	63



Line fitting



Midja Map Maker - Chromium

uq-eresearch.github.io/midja-map/#/

Midja

About | People | Contact | Groups | Data Registry | Bibliography | Visualisations | Search | Login Register

Map Visualisation

Choropleth

Percentage Of Indigenous Persons

Bubble Optional

Year 12 Completion Indigenous

Plots

Scatter plot

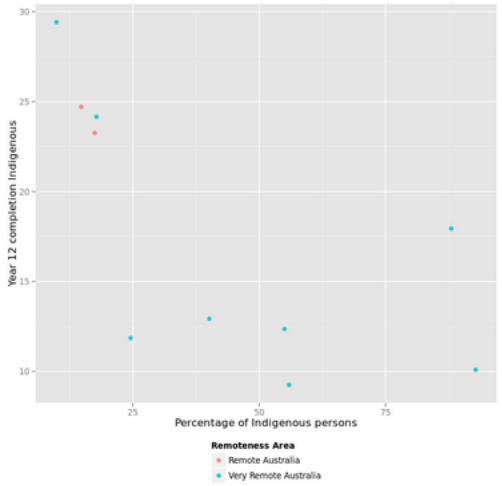
X-axis

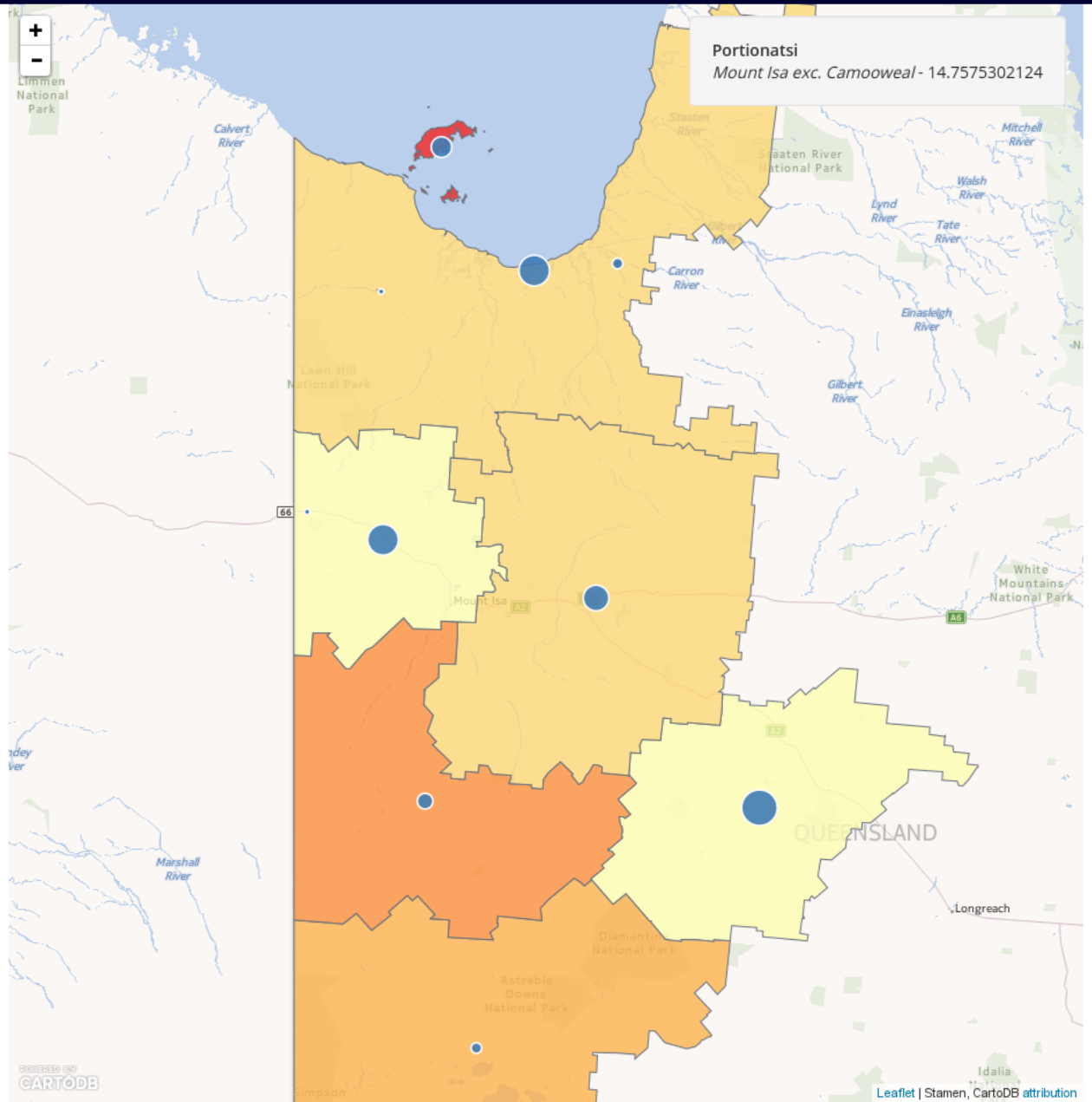
Percentage Of Indigenous Persons

Y-axis

Year 12 Completion Indigenous

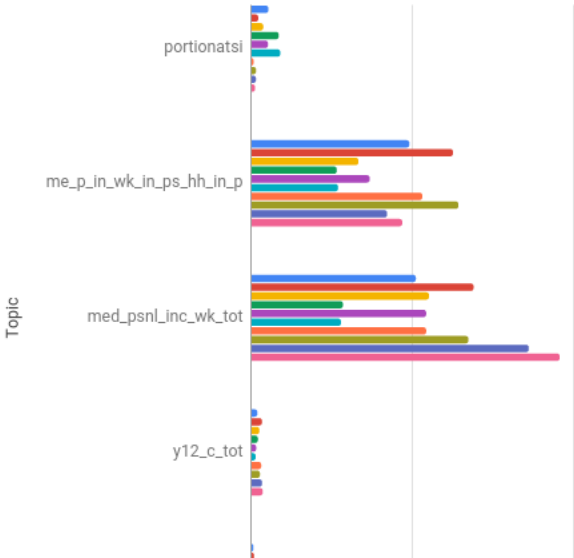
Use Remoteness

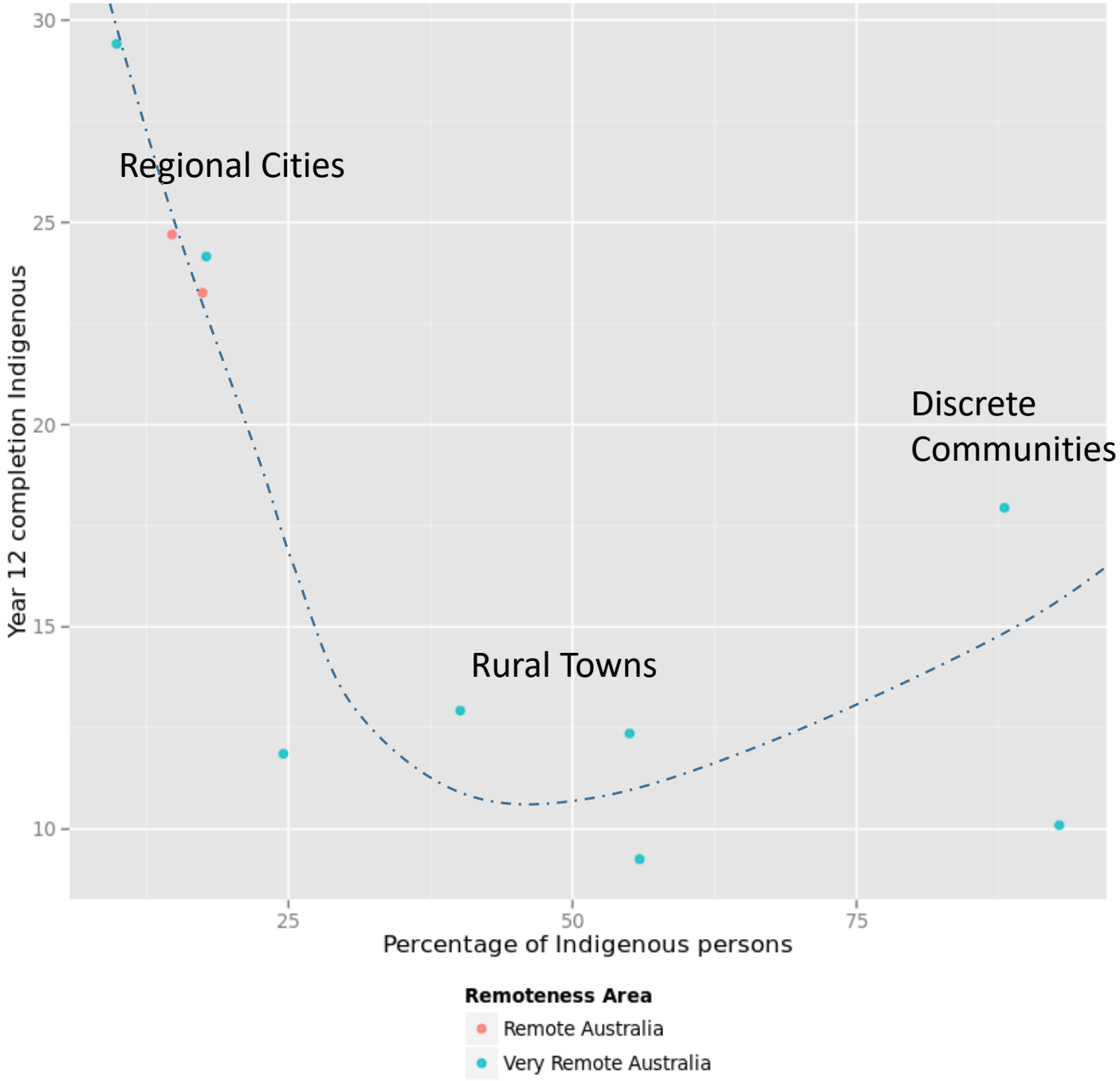




Data

	Winton	Carpentaria exc. Doomadgee	Normanton	Cloncurry - McKinlay
39	55.0247116089	92.84009552	9.8802394867	17.7793407
	370	272	533	645
	545	281	545	676
3	18.20199778	16.49616368	33.76503238	29.941127
7	12.36442516	10.09957326	29.41176471	24.1573033





Worst housing, educational and health outcomes for Indigenous communities in rural towns

Calculate Potential Indigenous Home Ownership for Local Government Areas (LGA) across Australia

- For each LGA in Australia, calculate the Potential Indigenous Home Ownership (PIHO) Index
- PIHO Index is a composite of three variables for each LGA:
  1. Affordability Index (= Median Indig. Income/Median Mortgage)
  2. % of Indigenous Households who don't own their own home
  3. % of Indigenous Population in Full-time Employment

(Note – the PIHO calculation can easily be modified/refined)

Overlay IBA home loan data and PIHO Index Spatially

- Using aggregated IBA Data from 1981 – 2014
- Each Customer is geocoded by matching their Locality to an LGA
- Calculate *Total Number of IBA Loans* and *Total Amount of IBA Loans* – for each LGA - by aggregating data for postcodes in that LGA
- Upload datasets to Midja Database

Choose a Place Required

Australia COUNTRY

156 locations are selected.

Topics of interest

Category filter Optional

Select one or more categories to filter topics

Choose topic(s) of interest Required

Composite ×

IBA Total Number Of Loans ×

Show only proportional variables

Click in the box again to add another topic of interest.

Map Visualisation

Choropleth

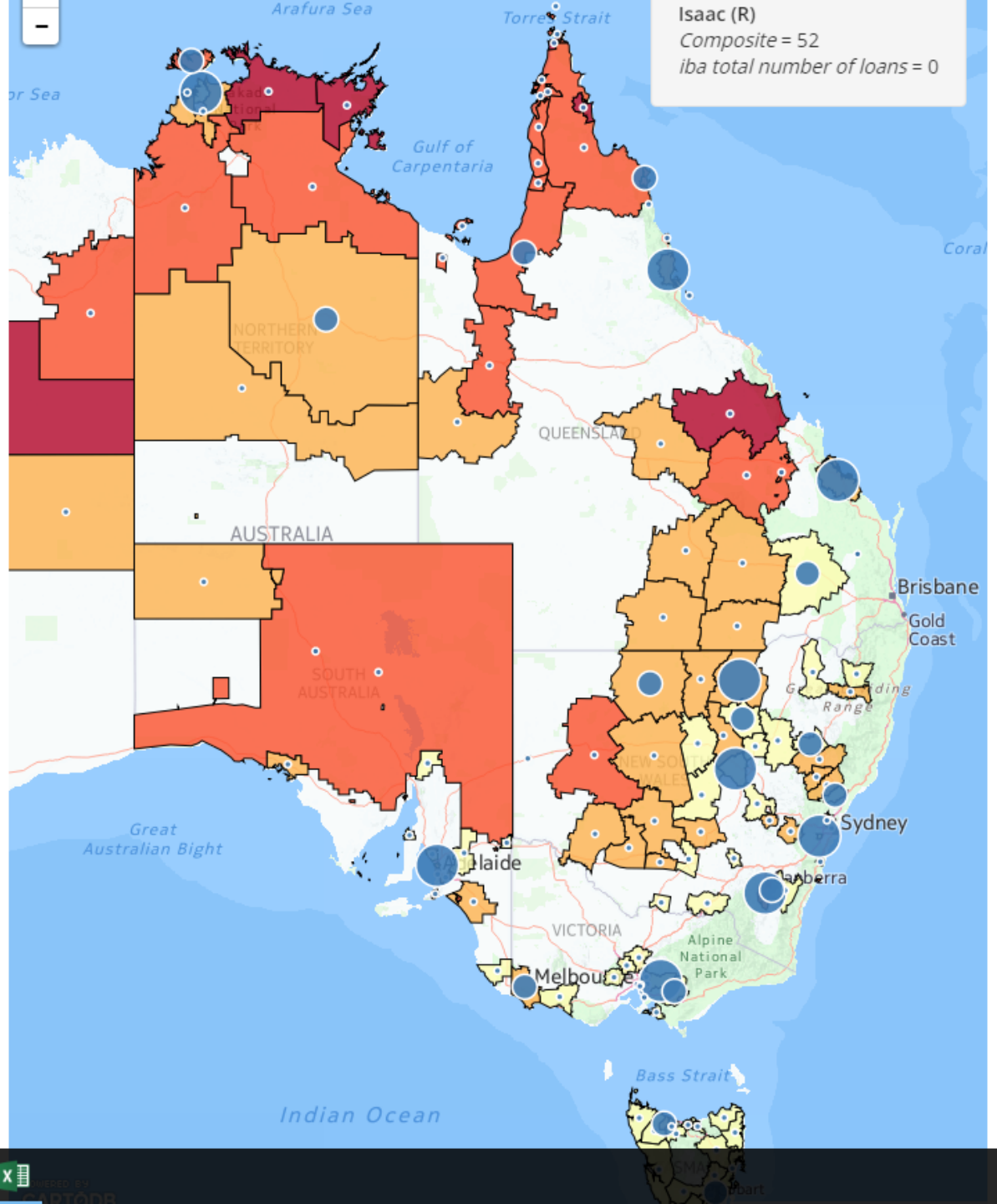
Composite

Bubble Optional

IBA Total Number Of Loans

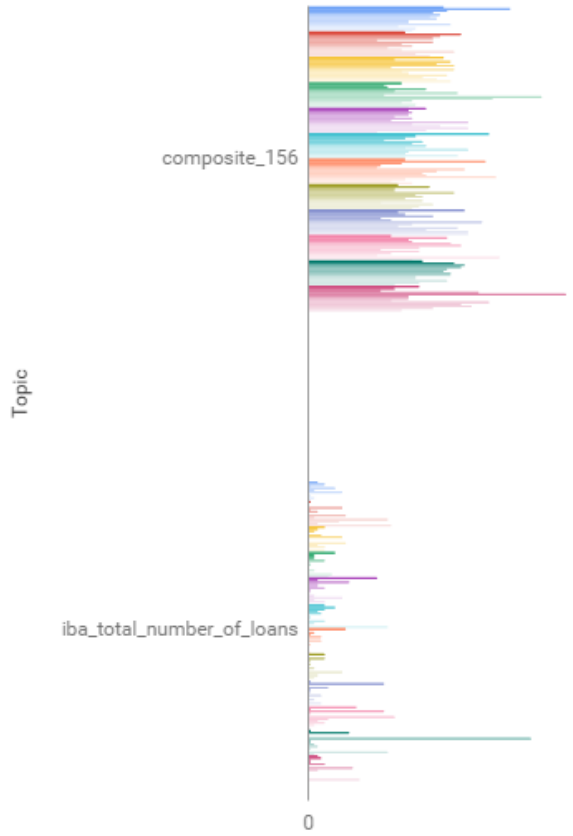
Plots

Scatter plot



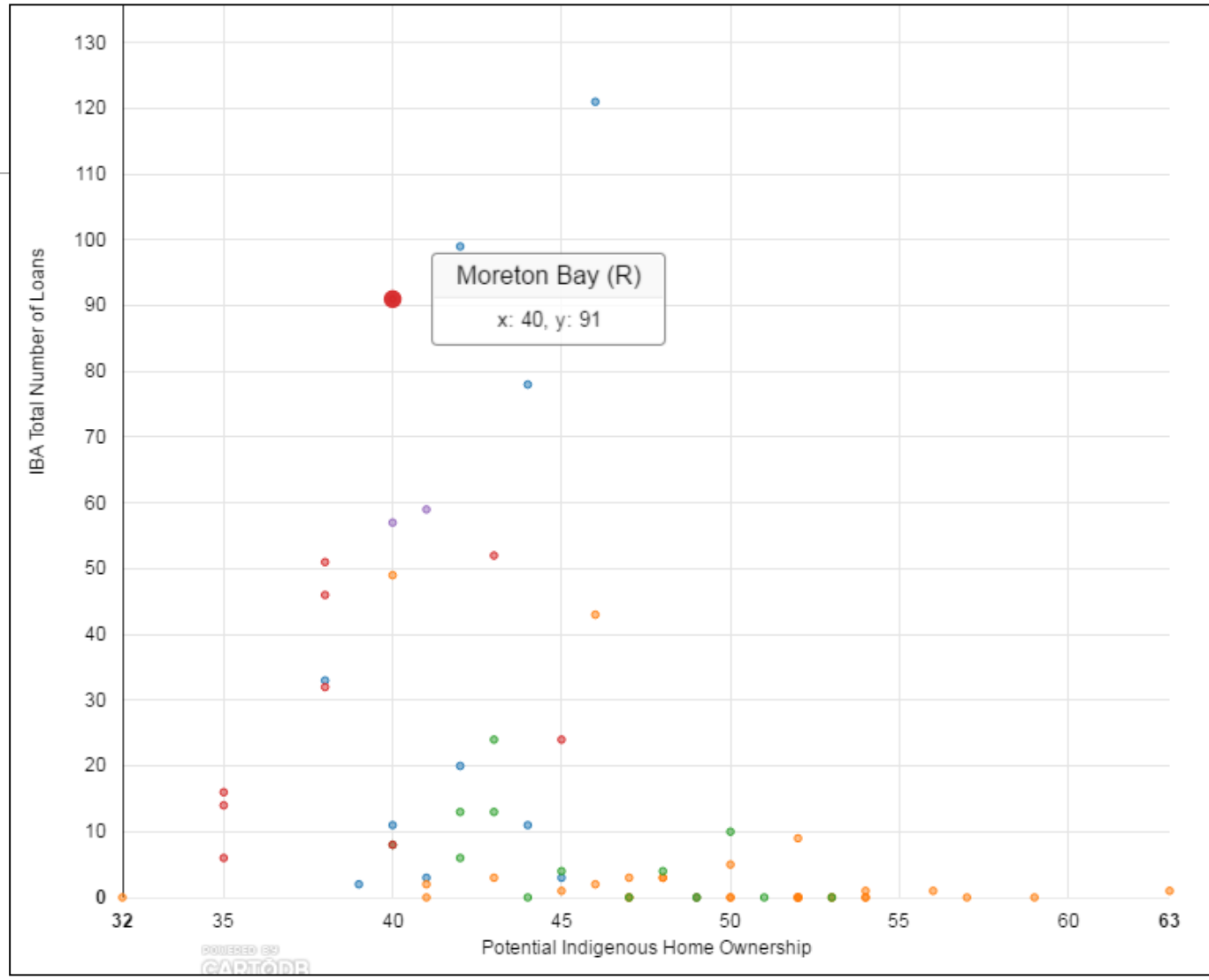
Data

Topic	Anangu Pitjantjatjara (AC)	Ash (S)
Composite (composite_156)	39.00	58.(
IBA Total Number of Loans (iba_total_number_of_loans)	0.00	0.0(



Scatter Plots

- Interactively generated by user
- PIHO Index - X-axis
- No of IBA Loans - Y-axis
- Reveals LGAs with high potential but no loans
- Mouse over point
  - displays LGA name + X, Y values



Significance to IBA?

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Reveals LGAs with high Potential Indigenous Home Ownership but few IBA loans

- Qld – Isaac, Lockhardt River, Aurukun, Barcoo, Cherbourg, McKinlay
- NSW – Central Darling, Balranald,
- Victoria - Horsham
- Tasmania – Launceston, Flinders, King Island
- South Australia – Kimba, Wudinna, Elliston
- Western Australia – Ashburton, Perenjori
- Northern Territory – West Arnhem, East Arnhem

Identifies areas for targeting Future Targeting/Marketing/Support

Challenges

Data aggregated up to coarse level for anonymization
- ABS SA2 level data (~10,000 persons)

Available data does not match indigenous geographies
- ILOC, IARE, IREG

Difficult to get data sets, not fine grained, no geography, privacy issues
- My Schools Data – numeracy, literacy Years 3, 5, 7
- Housing services data, Commonwealth rent assistance
- Health data (PBS)

ABS census data – unreliable

AURIN – overarching organisation resolves data licenses (CC-BY-NC) for re-use

INSECURE TENURE: CROWDING
What is crowding in different cultures?

(Photo by Ingetje Tadros, Kennedy Hill, Broome, 2015.)

Earlier study: A Statistically-Controlled Crowding Survey, Tennant Creek

“The Women’s Refuge & The Crowded House”

2012 Findings:

- There can be an average of around ten Aboriginal people per house with a range of three to 25 during an off-peak time of the year in terms of bush visitations.
- This is why there are high stress levels amongst many households and relatively high frequencies of family violence.
- Consequently why between 13 and 39 adult women arrived per month at the Women’s Refuge.
- (The Refuge rate reduces with alcohol restrictions in 2018).

(Memmott et al. 2013, FaCHSIA.)

BUT CROWDING CONTINUES

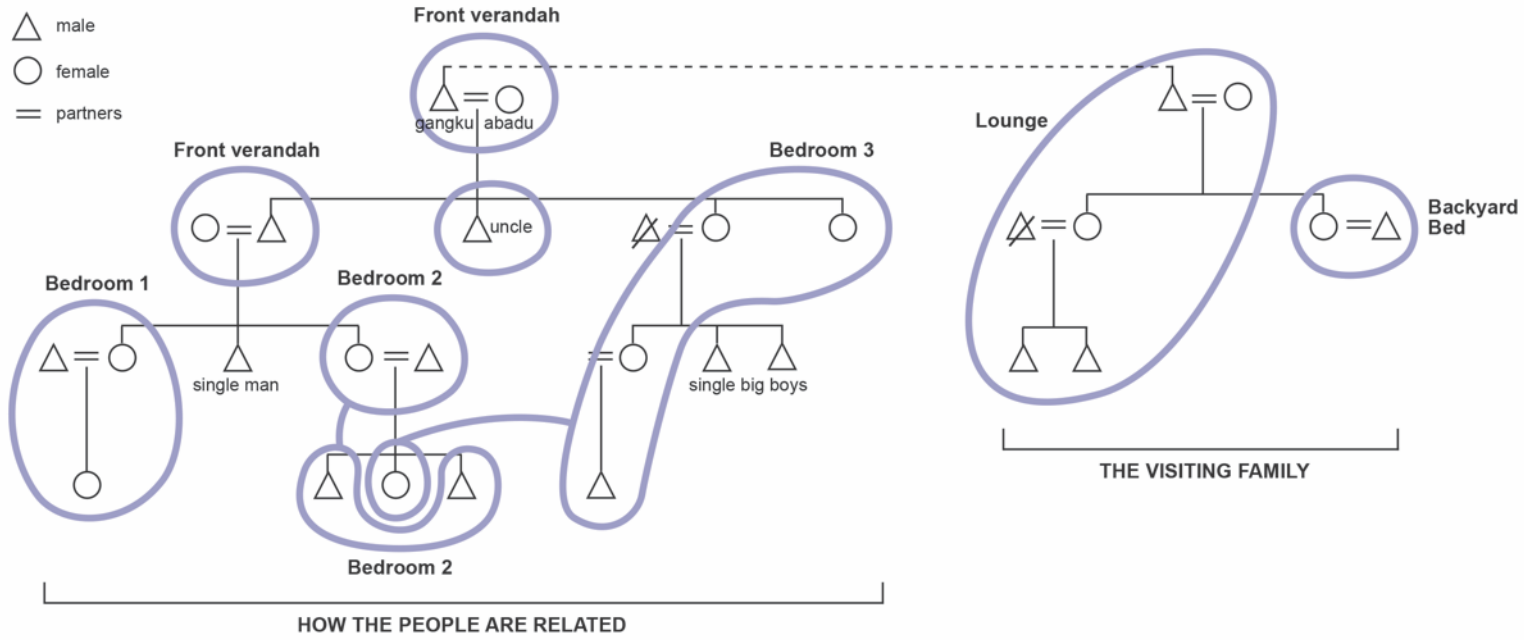
2018: The Crowded House, Tennant Creek

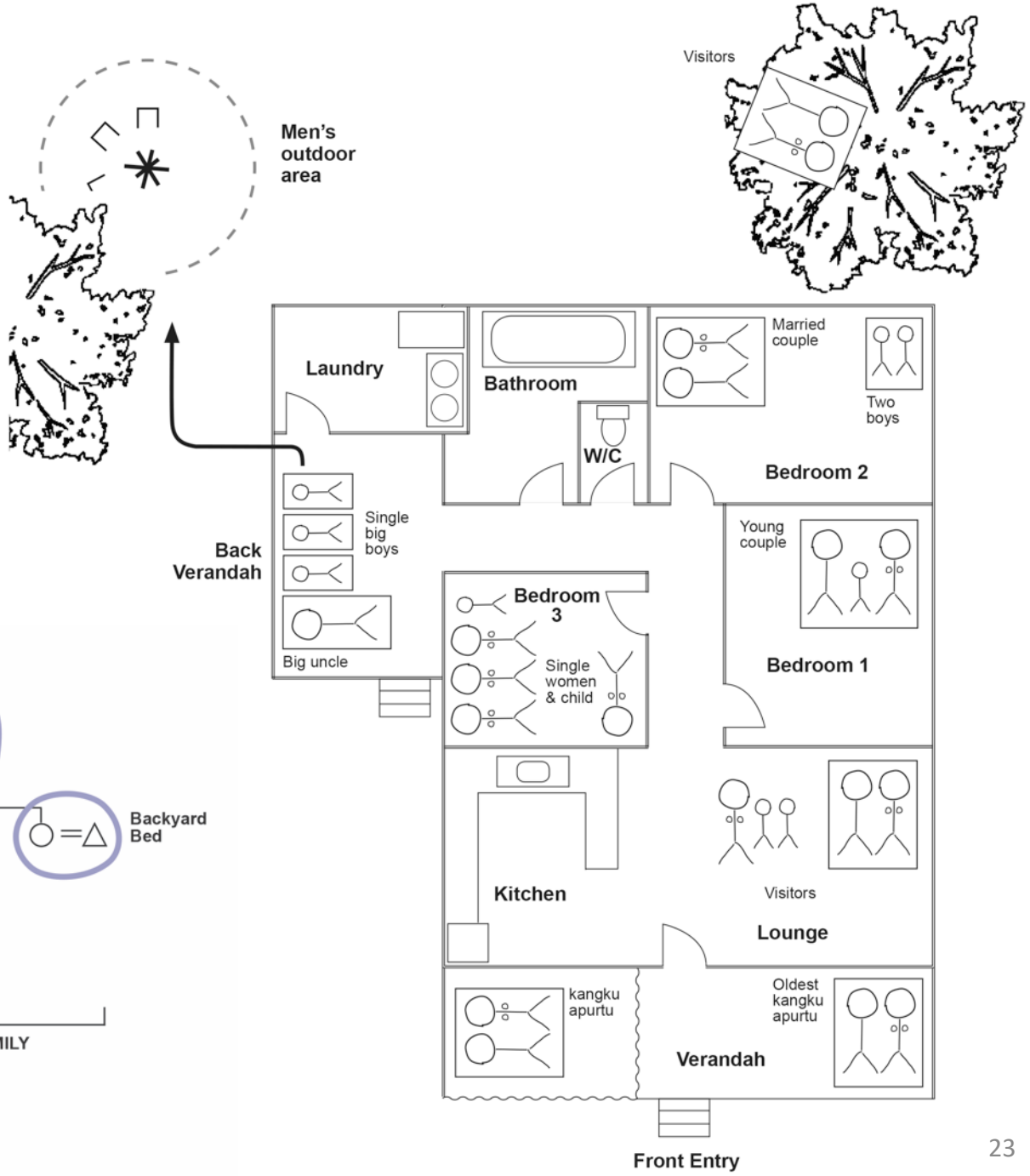
Anyinginyi Health Aboriginal Corporation is very concerned about crowded houses. Crowded houses can cause sicknesses to spread, and prevent healthy lifestyles. Many crowded houses are unsafe when heavy drinking and drug-taking happens.

Mental health can be badly affected too. But until a lot more houses are provided by government, this is the situation families have to cope with in Tennant Creek and many other places.

So how can a large family increase its safety in a crowded house?

The crowded house – where Sonia Ipam positioned the 27 people to sleep according to the old people's rules.





Kinship and sociospatial structure
Culturally safe principles in arranging Wumpararni sleeping groups in a crowded house:

Simple principles used by Sonia from Anyinginyi's Public Health program in Tennant Creek

- Single women in one room;
- Single men in one room or on a verandah preferably with an uncle;
- Married couples get own room for privacy;
- An older household couple takes a surveillance location (doors are guarded); and
- Drunk people are turned away.

Current Impact of Crowding on Health, Tennant Creek

(UQ School of Public Health, Anyinginyi Health and other national academic partners)

Tennant Creek Health hypotheses – A complex and compound disease cluster

High-density living/crowding; poor housing maintenance program; poor washing technology; culturally different attitudes to health and hygiene, all contribute to:

1. High rates of skin infections (scabies, impetigo, staphylococcus). } Amongst children
2. High rates of throat infections (streptococcal pharyngitis). } (as well as adults)
3. Harmful immune response (Post-streptococcal glomerulonephritis – rheumatic heart disease).
4. This creates an environment that promotes high rates of:
   - Rheumatic heart disease*
   - Acute and chronic kidney disease* (even at young ages)
5. Early renal disease onset, with youngest-aged entry to dialysis in the world reported here*.
6. Leads to long term illness, difficulties engaging with life challenges and goals, increased rates of disability, premature death.

* *Amongst worst rates in the world.*

(Nina Hall, Andy Redmond, Paul Memmott with Anyinginyi Clinic staff; UQ Global Change Institute Grant.)

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