



CaDDANZ

Capturing the Diversity Dividend
of Aotearoa/New Zealand

Mapping Diversity

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and

Lars Brabyn (University of Waikato)

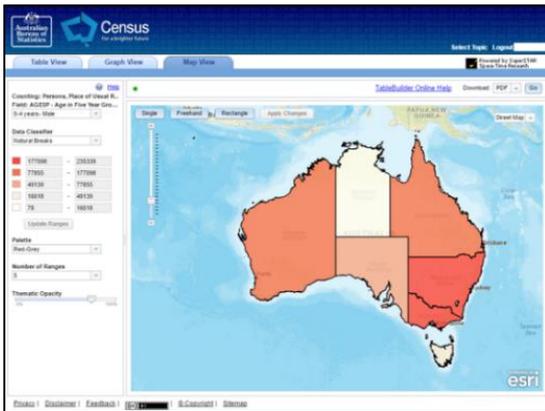
Acknowledgements: Tristan McHardie (Waikato)
Glen Stichbury (Waikato); Dr Dave Maré (Motu)



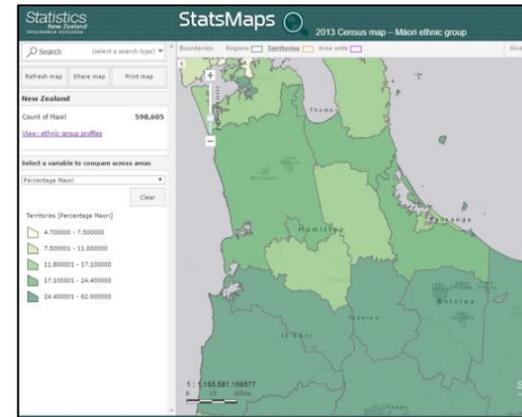
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UNIVERSITY OF NEW ZEALAND



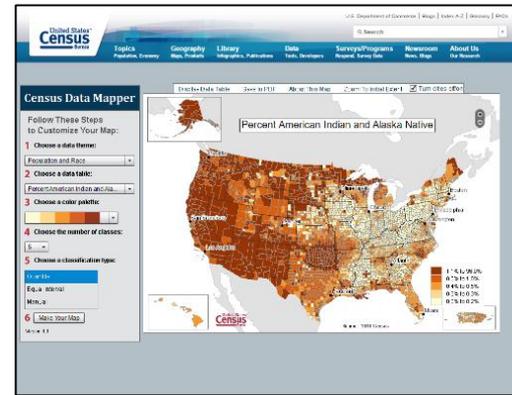
Australian Bureau of Statistics' "TableBuilder"



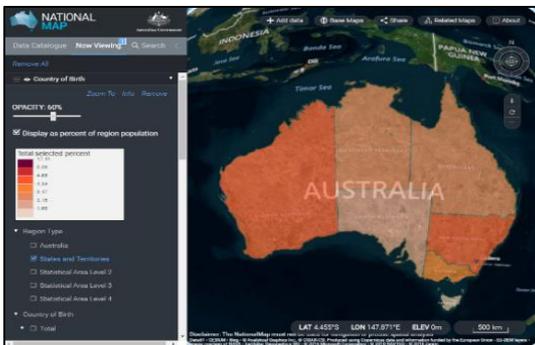
Statistics New Zealand's "StatsMaps"



Statistics Canada's "GeoSearch"



United States Census Bureau's "Census Data Mapper"



The Australian Government's "NationalMap"

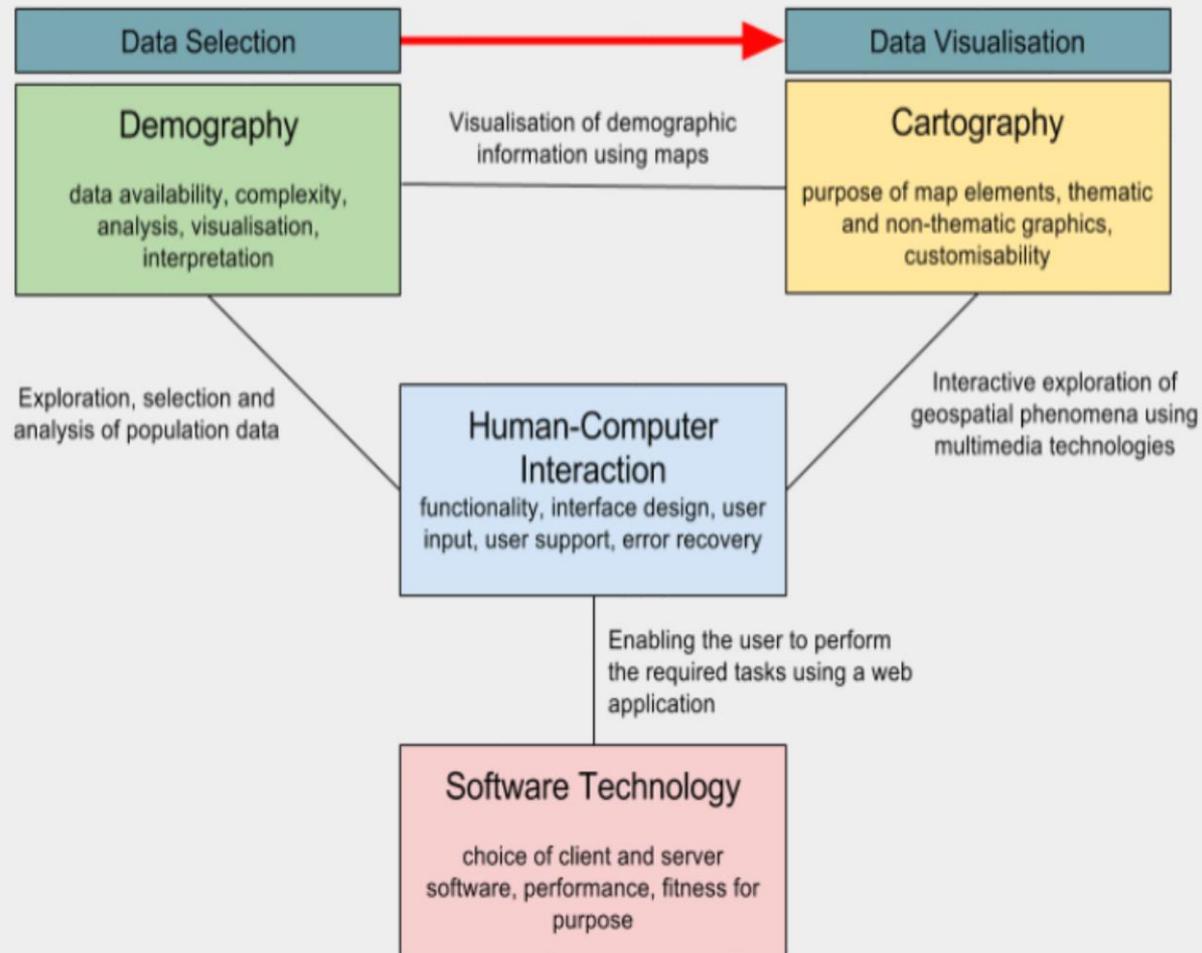
Masters Thesis* - Method



- **Literature review of different components – demography, cartography, human-computer interaction, and software technology.**
- **Reflexive development of assessment guidelines.**
 - **initial development of guidelines**
 - **initial application of guidelines**
 - **reassess guidelines**
 - **reapply guidelines**

*Tristan McHardie, Masters Thesis, University of Waikato

Components of a demography web map



Results



		Australian Bureau of Statistics' "TableBuilder"	Statistics New Zealand's "StatsMaps"	Statistics Canada's "GeoSearch"	United States Census Bureau's "Census Data Mapper"	Australian Government's "NationalMap"
Demography	Data procurement	3/3	1/3	1/3	1/3	1/3
	Total for demography	100%	33%	33%	33%	33%
Cartography	Essential map components	3/3	2/3	2/3	0/3	3/3
	Cartographic communication	2/3	2/3	2/3	2/3	3/3
	Map interactivity	3/3	2/3	1/3	2/3	2/3
	Total for cartography	89%	67%	56%	44%	89%
Human-computer interaction	System functionality	2/3	2/3	1/3	2/3	2/3
	User interface design	2/3	2/3	1/3	2/3	3/3
	User data input	3/3	3/3	3/3	3/3	3/3
	User support and error recovery	2/3	3/3	2/3	2/3	2/3
	Total for HCI	75%	83%	58%	75%	83%
Software technology	Client-side software	3/3	3/3	1/3	1/3	3/3
	Server-side software	3/3	3/3	1/3	2/3	3/3
	Total for software technology	100%	100%	33%	50%	100%

Conclusions



- Important to develop assessment guidelines for Web maps of demography.
- Guidelines were kept broad so they would remain relevant across a range of paradigms.
- These guidelines could serve as a starting point for developing more specific rules to reduce the level of subjectivity and need for cartographic expertise.
- The availability of interaction and animation with web maps, bring new challenges and opportunities.
- Noticeable lack of interactivity in terms of being able to click on map elements for further information.

Social Atlas of New Zealand



TOPIC

Industry
Occupation
Labour Force Status
Employment Status
Qualifications
Income

Education
Health

Fertility
Mortality
Migration
[Population](#)

SUB-TOPIC

Age Groups
Individuals
Families
Households
[Ethnic Groups](#)
Communities
Geographic areas

[THEME](#)

DATA INFO

[LINKS](#)

AREA

YEAR

PUBLICATIONS

www.newzealand.com



	Population (Number)				Population Share (%)			
	1996	2001	2006	2013	1996	2001	2006	2013
North Island	2810000	2944200	3185300	339700	75.3	75.9	76.1	76.5
South Island	921100	935400	998800	1042900	24.7	24.1	23.9	23.5
Area Outside Region	780	760	650	600	0.0	0.0	0.0	0.0
Total New Zealand	3731100	3879600	4184100	4441600	100.0	100.0	100.0	100.0

Source: Statistics New Zealand 2015 Estimated Resident Subnational Population

THEME: ETHNIC GROUP BY AGE



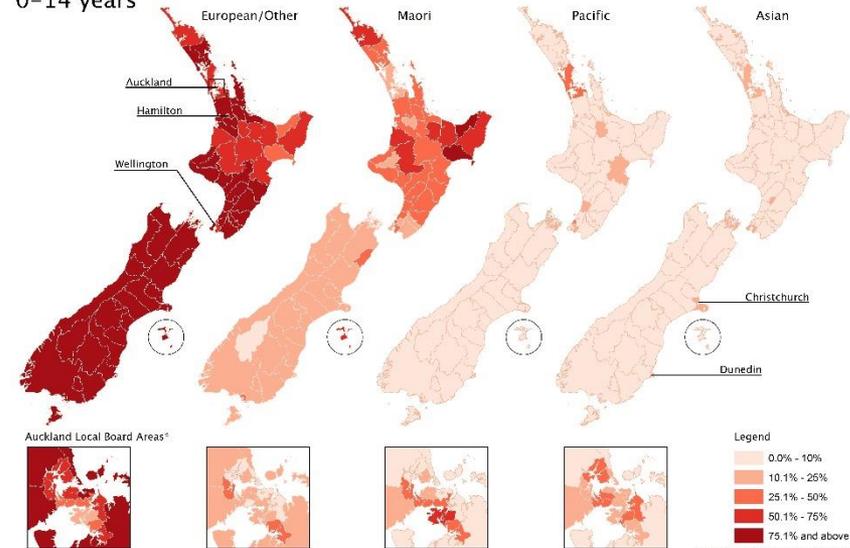
ETHNIC GROUPS

[ALL](#)
 Europe/Other
 Maori
 Pacific Peoples
 Asian
 MELAA

AGE GROUPS

0-4	0-14
5-9	15-24
10-14	25-39
15-19	40-54
20-24	55-64
25-29	65-74
30-34	75-84
35-39	85=
40-44	
45-49	
50-54	
55-59	
60-64	
65+	

Major ethnic group percent share by age group, 2013
 0-14 years



DATA INFO

[LINKS](#)

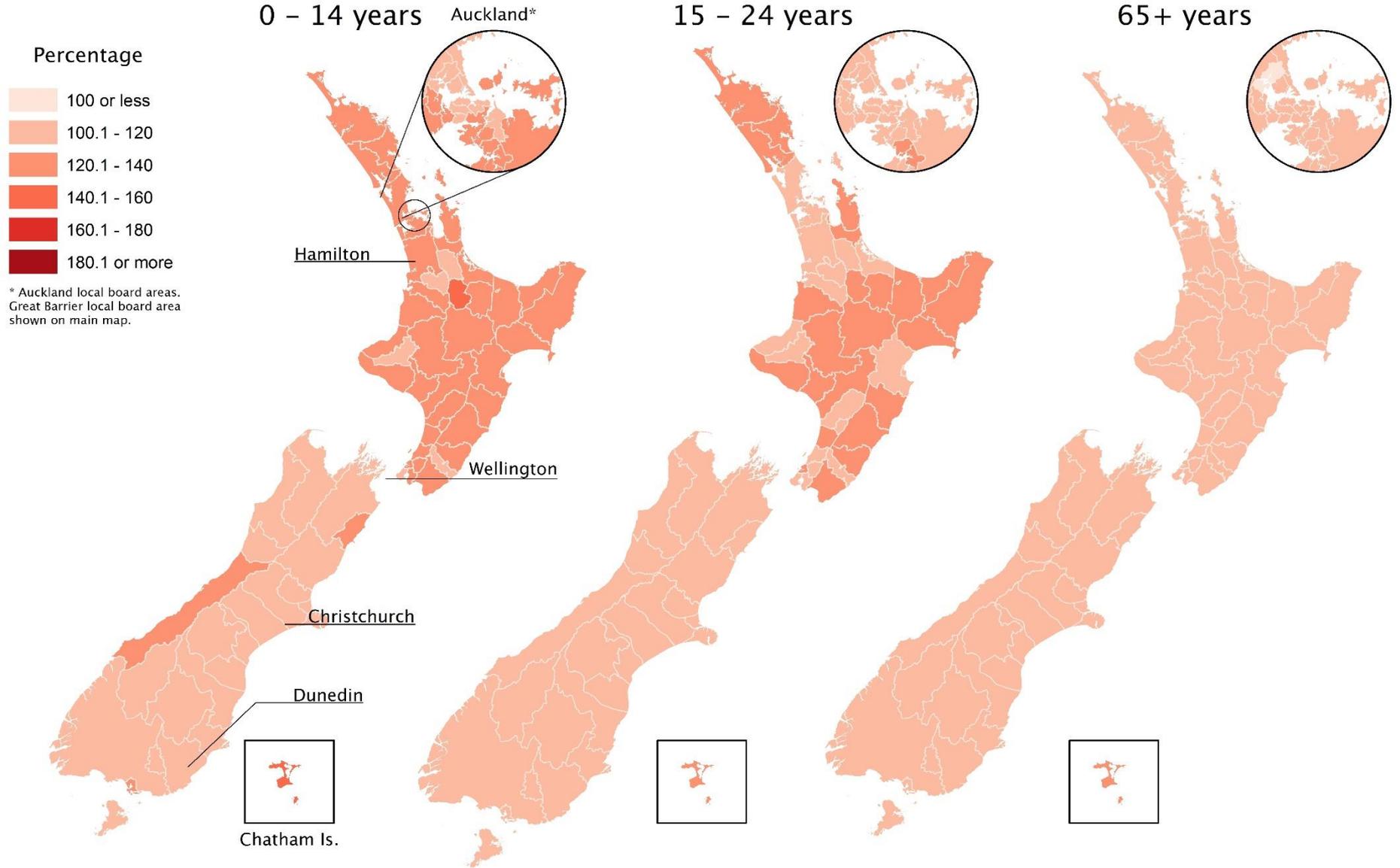
TA RC

2013

PUBLICATIONS

0-14 Years	2013	European or Other ethnicity	Maori	Pacific Peoples	Asian	Middle Eastern/Latin American/Africa	Total	Number in 2013
Auckland		56.7	18.2	25.1	21.5	2.2	100.0	311,500
Bay of Plenty		70.9	43.7	6.4	6.1	0.6	100.0	60,420
Canterbury		87.6	15.2	4.8	7.9	1.2	100.0	105,710
Gisborne		55.3	64.9	7.4	3.1	0.5	100.0	11,690
Hawke's Bay		73.1	39.6	8.7	4.3	0.7	100.0	34,550
Manawatu-Wanganui		79.6	35.1	7.0	5.7	0.9	100.0	47,550
Marlborough		90.0	21.3	5.2	3.3	0.7	100.0	8,070
Nelson		88.0	18.1	3.9	6.8	0.9	100.0	9,180
Northland		70.1	51.7	7.3	3.4	0.6	100.0	36,440
Otago		91.0	14.6	4.1	5.1	1.2	100.0	36,130
Southland		89.1	22.7	4.3	3.9	0.5	100.0	19,820
Taranaki		85.4	29.7	3.5	4.3	0.7	100.0	24,070
Tasman		94.6	14.0	2.2	2.8	0.5	100.0	9,740
Waikato		74.6	35.5	7.3	7.4	1.4	100.0	92,510
Wellington		76.4	22.3	14.1	11.6	2.0	100.0	94,990
West Coast		92.9	18.5	2.5	3.0	0.4	100.0	6,320

Ethnic Overcount 2013



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[THEME](#)

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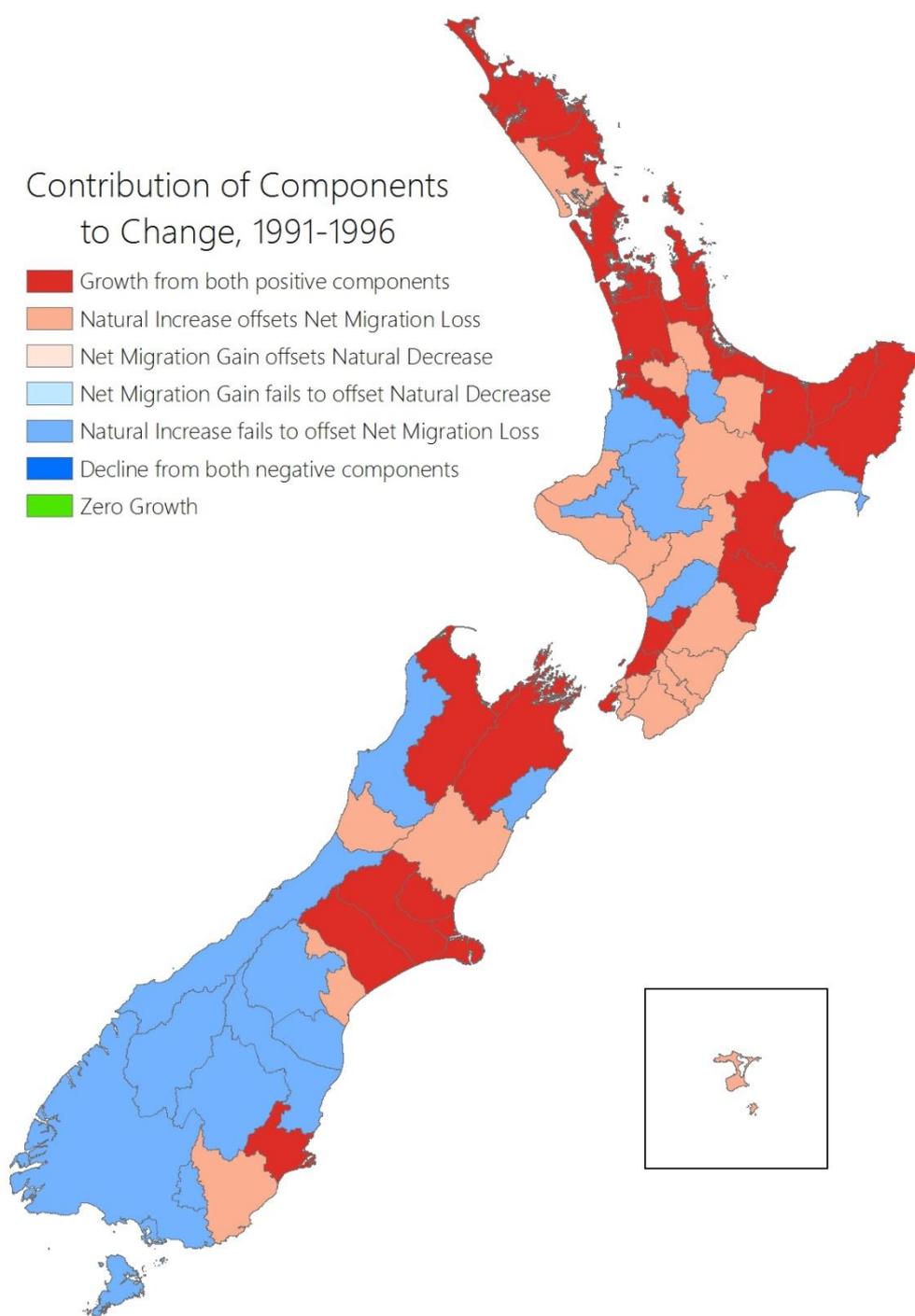
THEME

Components of change

Territorial Authority Areas

Contribution of Components to Change, 1991-1996

-  Growth from both positive components
-  Natural Increase offsets Net Migration Loss
-  Net Migration Gain offsets Natural Decrease
-  Net Migration Gain fails to offset Natural Decrease
-  Natural Increase fails to offset Net Migration Loss
-  Decline from both negative components
-  Zero Growth



PUBLICATIONS

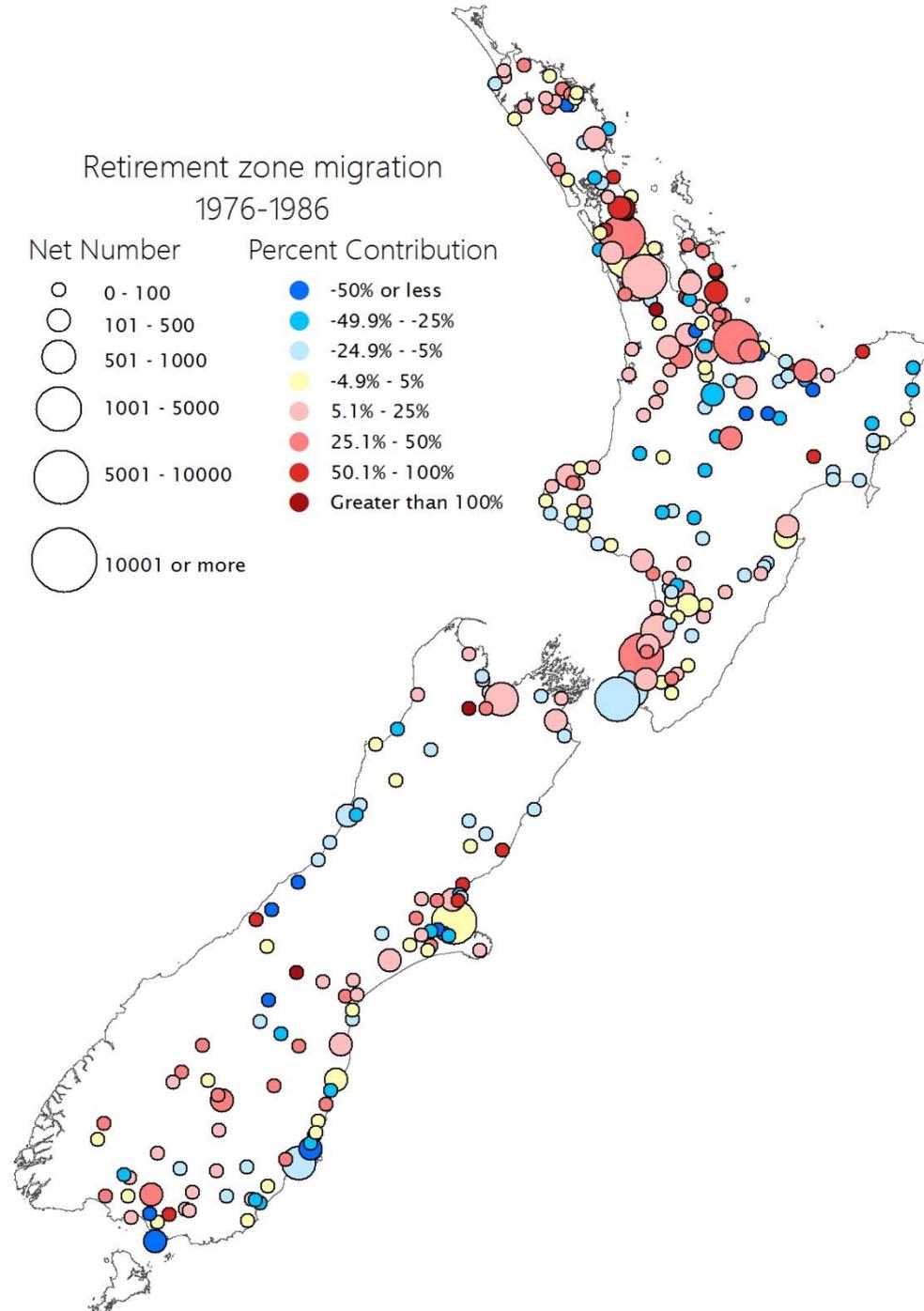
DATA INFO

Source: Authors/Statistics New Zealand (various years) Subnational Births, Deaths, ERP

THEME

Retirement Zone Migration

Towns and Rural Centres



PUBLICATIONS

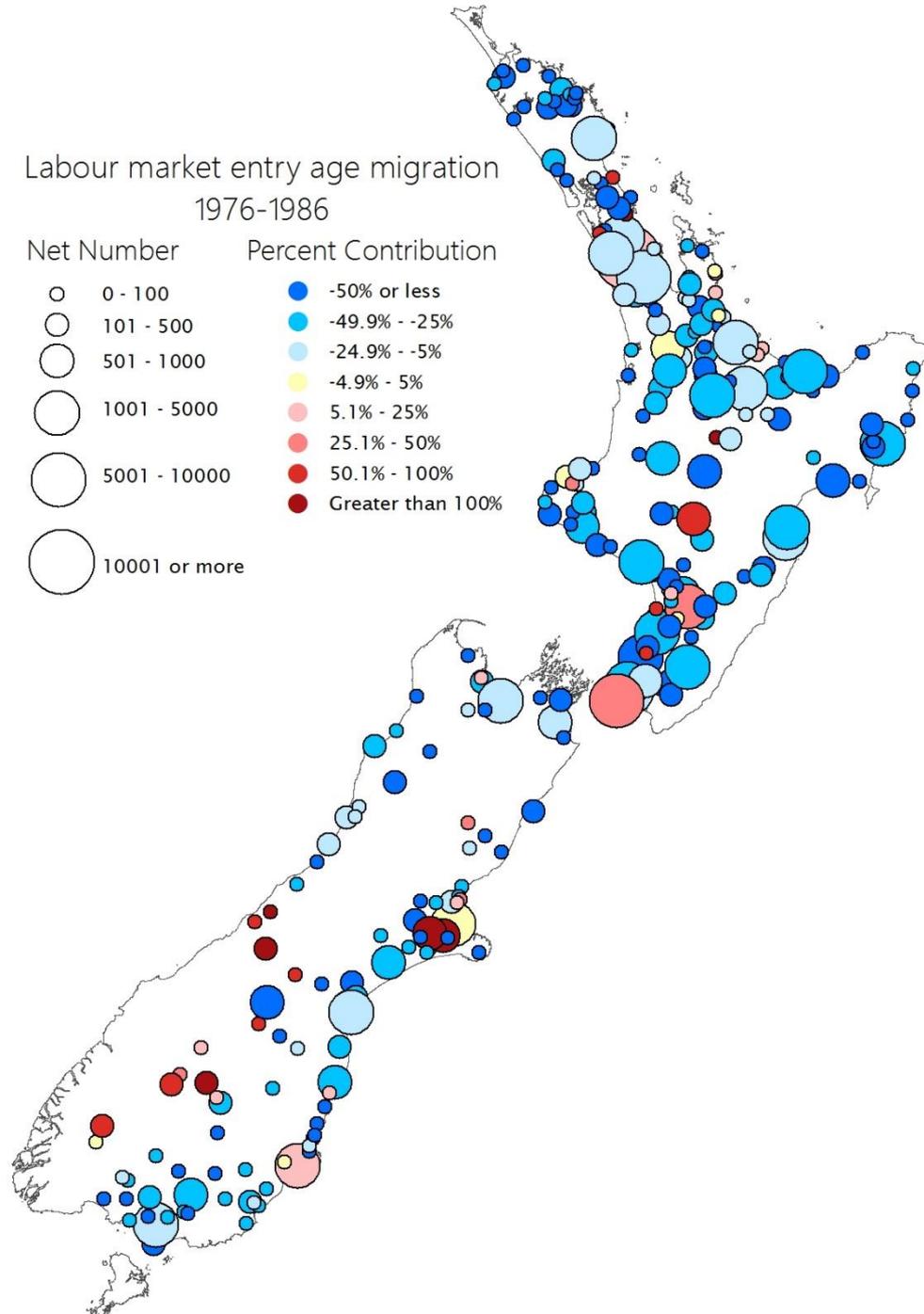
[DATA INFO](#)

Source:
[Authors/Statistics
New Zealand](#)

THEME

Labour Market Entry Age Migration

Towns and Rural Centres

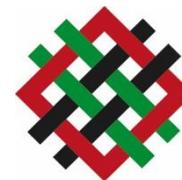


PUBLICATIONS

[DATA INFO](#)

Source:
Authors/Statistics
New Zealand

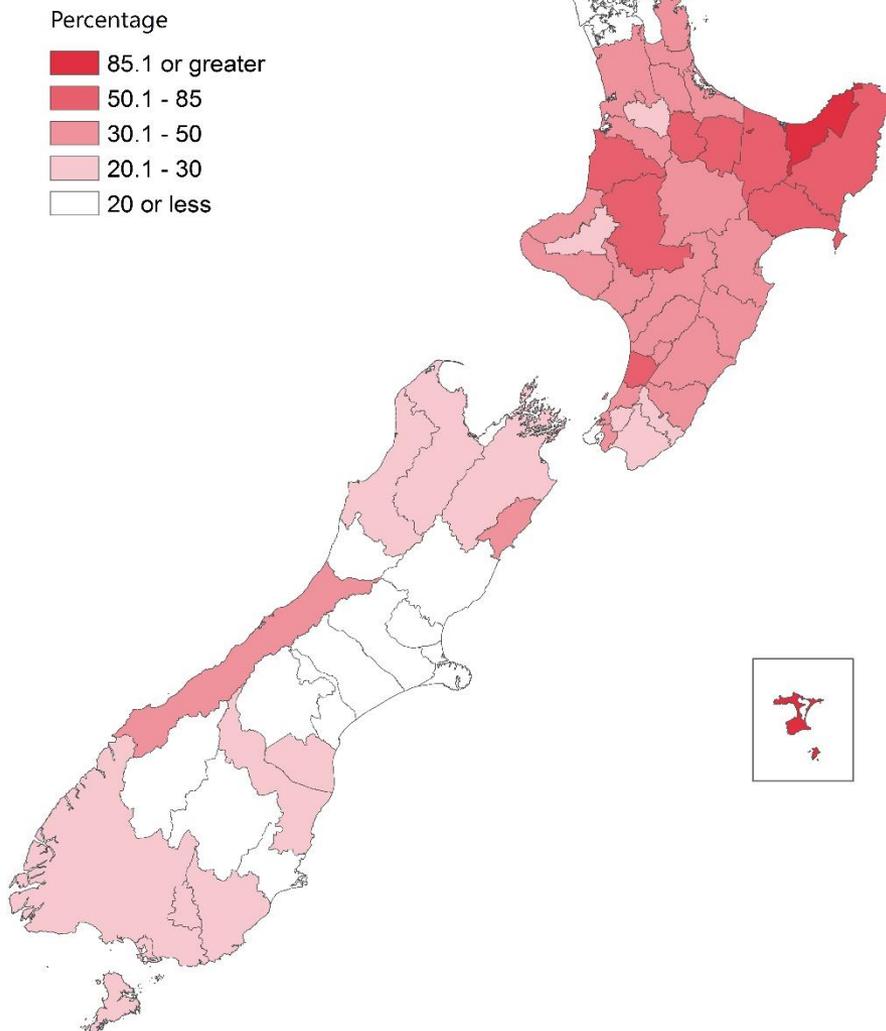
Percentage of all births accounted for by Maori births, 2015



THEME

Māori Births

Territorial Authority Areas



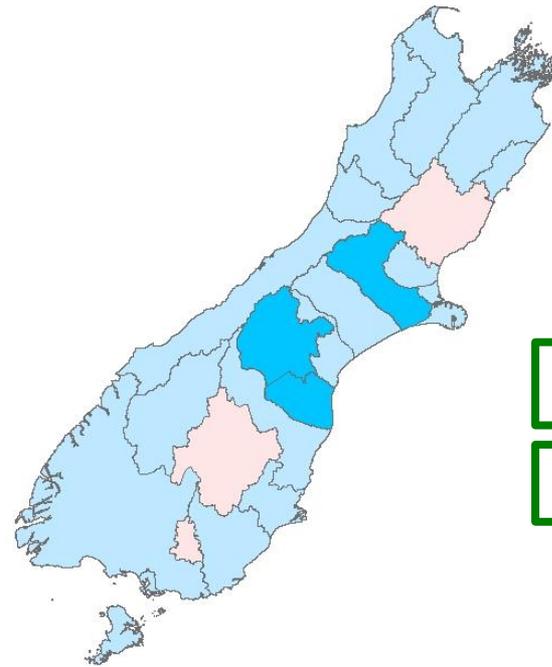
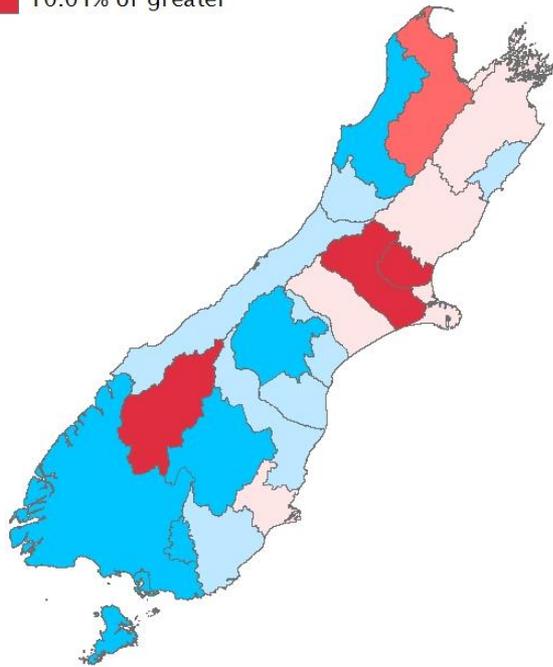
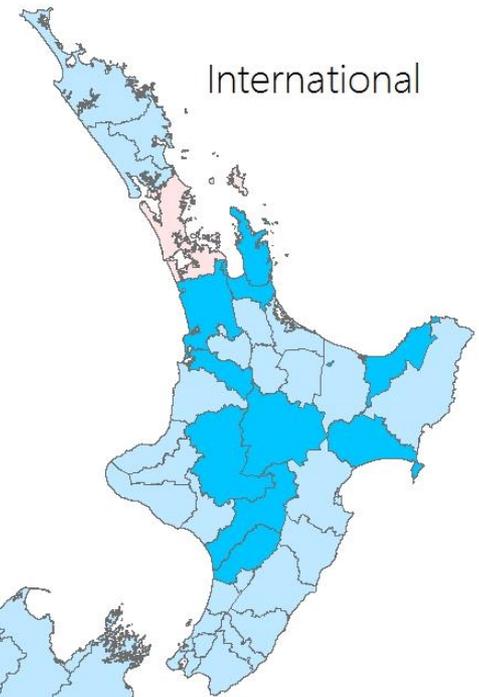
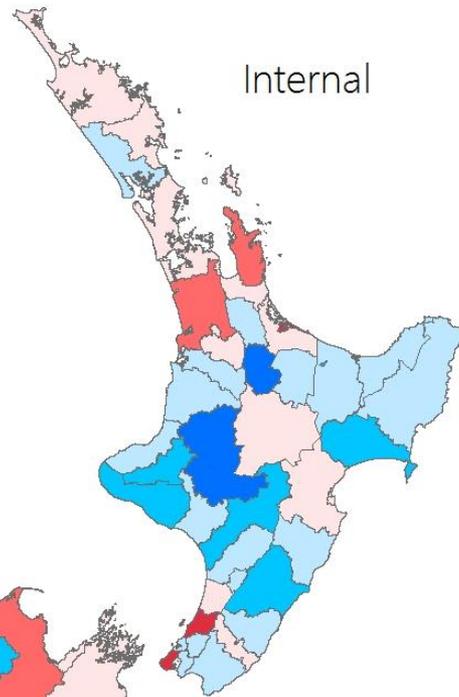
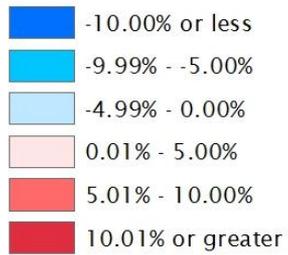
PUBLICATIONS

DATA INFO

Source:
Authors/Statistics New Zealand (various years)
Subnational Births

Net Migration 1996-2001

Percent Contribution



PUBLICATIONS

[DATA INFO](#)

Source: Jackson & Pavar 2013 (NTOM demographic accounting model)



Thankyou

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Disclaimer

- Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975.
- The tables for towns and rural centres were created by Dave Maré (Motu Research) under microdata access agreement with Statistics New Zealand, MAA2003/18. dave.mare@motu.org.nz. The tables contain counts of the 1976, 1981, 1986, 1991, 1996, 2001, 2006 and 2013 usual resident population by age and sex, grouped by 2013 geographic area boundaries (Territorial Authority and Urban Area). The Urban Area classification has been extended to identify rural centres (ua13=501) separately (using 2013 Area Unit codes). The allocation to 2013 geographic areas is based on a user-derived correspondence.
- The counts are not official statistics but should be thought of estimates intended for use in research.