Has the New Zealand 'Man Drought' broken? A 2013 census update

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Introduction

An Antipodean 'Man Drought' has attracted considerable media attention over the last decade. Australian demographer, Bernard Salt, first used this term in 2005 when highlighting unusual sex ratios in the broad 25-49 age group in both the New Zealand and Australian censuses (Salt, 2005). Following the 2006 census, the size and causes of the New Zealand 'Man Drought' were explored. Much of this investigation was undertaken through the Foundation for Research, Science and Technology funded 'Missing Men' project (Callister and Didham, 2012; Callister and Lawton, 2011; Bedford, Callister and Didham, 2010; Callister, Didham and Bedford, 2006). However, Statistics New Zealand also published research on the topic (Bycroft, 2006; Didham and Ryan, 2009). This research provided a complex set of reasons for the drought notably: gendered migration; gendered undercount; and differences in mortality.

This paper uses newly published 2013 census data to provide a first update on the current state of New Zealand's 'Man Drought'.[1] It shows the drought has not broken. Instead there have been some changes in the imbalance between men and women in the 25-49 age group. As a contrast, we provide data from the 2011 Australian census that indicates the 'drought' is no longer of significance across the Tasman. We conclude the paper by suggesting further research.

What the census counts

In presenting this New Zealand census based update, it is important to clarify what this survey counts and what needs to be known about the limitations of the published data.

On census night everyone in New Zealand is required to fill out a census form. However, Statistics New Zealand provides reports and data primarily based on those who are deemed to be 'usual residents'. In the 2013 census, the total count was 4,353,198 people. The usual resident count was 4,242,051 - a difference of 111,147.[2] Of the 'not usual residents' 55,449 were male while 55,701 were female. Therefore there was very little difference in the number of men and women in the 'not usual resident' population.

[1] In this paper we follow the usual convention of calculating the sex ratio by comparing the number of men relative to women.

[2] In the 2006 census, the census night count was 4,143,279 people, with the usual resident population count 4,027,947, a difference of over 115,000 people.

Unfortunately, in an increasingly mobile world, determining who is a ‘usual resident’ is no longer simple. According to Statistics New Zealand:

> The census usually resident population count of New Zealand *excludes* visitors from overseas and *excludes* New Zealand residents who are temporarily overseas

So who is classified as an overseas visitor? It could, in fact, be someone born in New Zealand, who is a New Zealand citizen, who, through their work, normally lives overseas, but on census night is visiting New Zealand. It could be a US citizen on a short visit to New Zealand. Seasonal workers, possibly under the umbrella of the Recognised Seasonal Employer scheme, who are in New Zealand less than 12 months should, in theory, be part of the non-resident population. Or it could be a foreign student here for a six month course who thinks of their usual address as being in an overseas country. The census definition is not one of citizenship or ‘belonging’ but instead “... is a statistical, not a legal, definition generally based on a person's self-identified usual address.”

The usual resident count means some of the large population of temporary residents living in New Zealand at any point in time will be excluded. As an example, some of the surplus of young males working on the Christchurch rebuild who were identified by Jane Bowron, in her December 2013 Dominion Post column, may not be part of the ‘usual resident’ population.

In addition, despite all the best efforts of Statistics New Zealand, not everyone completes a census form. Data on the 2013 undercount are not yet available. Previous undercount studies indicated relatively few people are missed. But the undercount is gendered and this partly explains the phenomenon of ‘missing men’.

Yet despite concerns about who is counted and reported, the census remains a critically important count of the New Zealand population. It sets the benchmark for subsequent population estimates. It is still the best source for investigating the ‘Man Drought’.

Sex ratio changes

Table 1 updates a table from Callister and Didham (2012). It focuses on the total New Zealand population from 1858 to 2013.

Table 1: Ratio of total males to 100 females and % male from 1858 to 2013, New Zealand, Māori excluded until 1951

	Male %			Ratio of male to female (NZ)
1858	56.7		1858	131
1861	61.7		1861	161
*1864	61.8		1864	162
*1867	60.2		1867	151
1871	58.6		1871	142
1874	57.0		1874	133
1878	55.7		1878	126
1881	55.0		1881	122
1886	54.0		1886	117
1891	53.1		1891	113
1896	52.8		1896	112
1901	52.5		1901	111
1906	53.0		1906	113
1911	52.7		1911	112
1916	50.2		1916	101
1921	51.1		1921	105
1926	51.1		1926	104
1936	50.7		1936	103
1945	48.8		1945	95
1951	50.2		1951	101
1956	50.3		1956	101
1961	50.2		1961	101
1966	50.2		1966	101
1971	50.0		1971	100
1976	49.9		1976	100
1981	49.7		1981	99
1986	49.5		1986	98
1991	49.3		1991	97
1996	49.1		1996	97
2001	48.8		2001	95
2006	48.8		2006	95
2013	48.7		2013	95

Sources: Statistics New Zealand, Census of Population and Dwellings
Note: * Early census counts exclude the military and their families

Table 1 shows some recent stability in the overall ratio of men to women. Men represented just under half of the total population in March 2013 or a ratio of 95 men to every 100 women. In the 2011 Australian census data show that males comprised 49.4 percent, giving rise to a higher ratio 98 males to every 100 females.

Table 2 focuses on the broad 25-49 age group. Since the 1980s there has been a decline in the in ratio of males to females. Between 2006 and 2013, the ratio remained relatively stable reducing by just 1 percentage point from 92 to 91. These data suggest that nationally the New Zealand 'Man Drought' has not broken. In contrast, in Australia the number of males to females in this broad age group increased between 2006 and 2011, reaching 97 males to 100 females in 2011. Australian commentators note that the 'Man Drought' in Australia is now insignificant.[3]

Table 2: Ratio of men to 100 women aged 25-49, 1901 to 2013

	NZ (25-49)
1901	114
1906	117
1911	116
1916	100
1921	103
1926	101
1936	100
1945	93
1951	102
1956	103
1961	103
1966	104
1971	103
1976	103
1981	101
1986	100
1991	98
1996	96
2001	93
2006	92
2013	91

Sources: Statistics New Zealand, Census of Population and Dwellings

Table 3 breaks the 25-49 age group into five year bands and shows the pattern from the 1980s as we moved from having slightly more women to there being more men than women. In the younger age groups, the previous downward trend has stabilised. However, in the 40-44 and 45-49 age groups the decline in the ratios continued until 2013. Whether this represents an age or cohort effect requires more investigation. Also shown are the Australian data for 2011. In Australia, in all age groups, the ratio of men to women is significantly higher than in New Zealand.

[3] http://blog.id.com.au/2012/australian-demographic-trends/the-man-drought-is-it-real/

Table 3: Ratios of men to 100 women 25-49 by 5 year age group, New Zealand 1981 to 2013, Australia 2011

	New Zealand							Australia
	1981	1986	1991	1996	2001	2006	2013	2011
25-29	99	99	96	94	92	94	94	99
30-34	100	98	96	94	90	90	91	98
35-39	100	100	98	95	92	90	90	97
40-44	101	101	99	97	94	93	89	96
45-49	104	101	101	99	96	95	92	97

Sources: Statistics New Zealand, Census of Population and Dwellings

As indicated in Appendix 1, migration to Australia may be part of the on-going difference in numbers of men and women in New Zealand. In Australia, amongst the New Zealand born in each of the five year age groups in the broad 25-49 age group there was a balance or slightly more men than women.[4]

Regional changes

Our analysis of 2006 and earlier census data shows that the ratio of men to women in the 25-49 age group had dropped below 100 across all regions of New Zealand. In the early history of settler populations in New Zealand (when Maori were excluded from the census) all regions had more men than women in this age group. Over time the mainly urban areas saw a balance emerging, but there continued to be more men than women in the rural areas. But by 2006 there was a 'Man Drought' across all regions.

Table 4 shows changes in the ratio for the 25-49 age group from 1996 through to 2013. With the exception of Canterbury, there has been a steady decline in the ratio through to 2013. For Canterbury there has been a slight rise in the ratio from 2006 through to 2013, from 93 men per 100 women to 96 per 100. Based on the usual resident population, this does not suggest that - despite the significant migration in and out of Canterbury post the earthquake - it is 'raining' males.

[4] We are grateful to Paul Hamer for providing these New Zealand born data.

Table 4: Ratio of men to women aged 25-49 in each region, 1996 to 2013

	1996	2001	2006	2013
Northland Region	94	90	89	87
Auckland Region	94	92	92	90
Waikato Region	97	94	93	91
Bay of Plenty Region	94	90	89	86
Gisborne Region	97	93	98	86
Hawke's Bay Region	95	92	92	88
Taranaki Region	99	94	94	93
Manawatu-Wanganui Region	97	93	93	90
Wellington Region	96	93	92	91
Tasman Region	100	97	94	89
Nelson Region	97	95	92	89
Marlborough Region	101	100	97	91
West Coast Region	107	102	99	93
Canterbury Region	98	94	93	96
Otago Region	98	95	96	93
Southland Region	103	99	98	94
Total	96	93	92	91

Sources: Statistics New Zealand, Census of Population and Dwellings

Breaking the 2013 Canterbury data into district and two age groups does identify some places with a sight excess of males to females in some age groupings (Table 5). But these usual resident data alone do not suggest that single women in other parts of New Zealand should be flocking to Christchurch in order to find an opposite sex partner. We also calculated the ratios for the census night count and this makes little difference.

Moreover, it would be necessary to examine the marital status of any ‘surplus’ males. A proportion will be already partnered, but with their partner remaining in the country from which they have temporarily migrated. More research on these issues would be useful.

Table 5: Ratio of men to women aged 25-49 and 25-34 in each Canterbury district, 2013

	25-49	25-34
Hurunui District	96	107
Waimakariri District	89	89
Christchurch City	97	101
Selwyn District	95	95
Ashburton District	101	104
Timaru District	90	94
Mackenzie District	97	103
Waimate District	98	96

Sources: Statistics New Zealand, Census of Population and Dwellings

New Zealand born versus overseas born

Our previous analyses have indicated that, at various point in time, there have quite different sex ratios according to country of birth. This has primarily reflected gendered migration patterns. For example, in the late 1800s census data show extreme sex ratios for Asians. This primarily reflected laws that allowed Chinese men to come to New Zealand to participate in the mining industry while also preventing the migration of Chinese women (Callister and Didham, 2012). In contrast, in the early 2000s, Asian women outnumbered Asian men (Badkar, Callister, Krishnan, Didham and Bedford, 2007). Again, this primarily reflected gendered migration patterns.

The ratios have changed in some categories since 2006. Most notable is the increase in the ratio of Asian born men to Asian born women. However, even by 2013, there were significantly more women than men in this age group. The reasons for this are likely be complex. An example is the Filipino born group within the wider Asian born category. In the 2006 census, there were a significant number of Filipino nurses and caregivers working in New Zealand. Most were female (Callister, Badkar and Williams, 2009). Since that time, migration data point to some traditionally male industries drawing in Filipino workers. This includes the dairy industry (Callister and Tipples, 2010).

Table 6: Ratio of men to women aged 25-49, by main region of birth, 2006 and 2013

	2006	2013
New Zealand	93	91
Australia	84	82
Pacific Islands	93	93
United Kingdom and Ireland	99	99
Europe (excl United Kingdom and Ireland)	83	76
North America	76	72
Asia	78	84
Total	92	91

Sources: Statistics New Zealand, Census of Population and Dwellings

Ethnicity

In the 2006 census data, the Asian ethnic group stood out in having the lowest ratio of men to women in the broad 25-49 age group. The ratio was particularly low amongst those aged 35-39 years. In contrast, the MELAA group had more men than women. For both the Asian group and MELAA, inward migration had a significant effect on sex ratios. The 'New Zealander' response was especially male in 2006.

Table 7 shows some changes occurring between 2006 and 2013. The overall 'New Zealander' response was significantly lower in the 2013 census and had also become more strongly male. The Asian group remained predominantly female but with an increase in the ratio of men to women. In contrast, the ratio of MELAA went from having 108 men to every 100 women in 2006 to just under 100 in 2013. Maori became slightly more female dominated. How outward migration, notably to Australia, affected this ratio would be worth exploring.

Table 7: Ratio of men to women aged 25-49, ethnic group (total counts), 2006 and 2013

	2006	2013
European	89	89
Māori	86	84
Pacific Peoples	91	91
Asian	81	85
Middle Eastern/Latin American/African	108	99
Other - New Zealander	110	153
Total	92	91

Sources: Statistics New Zealand, Census of Population and Dwellings

Conclusion

This initial investigation of 2013 census data indicates that the New Zealand 'Man Drought' has not broken. Instead, of the birth ratio of around 105 boys to every 100 girls continuing through all age groups across the population, in 2013 there were 95 male to every 100 females. In the 25-49 age group - an age range where a 'Man Drought' has previously been indentified in both Australia and New Zealand - the ratio in the 2013 New Zealand census is 91 males to every 100 females. While the New Zealand 'Man Drought' has not 'broken' or worsened, in Australia the 'Man Drought' is no longer significant.

When regions of New Zealand are considered, the ratio has continued to decline in all areas except Canterbury. Migration, both in and out of Canterbury following the 2011 earthquake, is likely to have affected the ratio in this region.

When country of birth and ethnicity are considered, there have been some small but important changes since 2006. Migration shifts are likely to have contributed to these changes. Investigating the changing New Zealand labour market and how migration has responded to this will be key to understanding these changes.

The 'man drought' has often been portrayed as affecting women's chances of finding a partner of the opposite sex. Certainly in the early colonisation of New Zealand, sex ratios were extreme and did affect partnering. The current ratios are not extreme. However, our previous work has indicated that there are a number of strong influences on assortative mating, with education being a key factor (Callister and Didham, 2010). Published Ministry of Education enrolment and completion data show that the imbalance, in favour of women, in most areas of higher learning has continued through to 2012. An investigation of changes in educational outcomes by age group and geographic area will be an important part of examining the changing nature of the 'Man Drought' and whether it is likely to affect behavior.

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Appendix

Table 8: Ratios of men to 100 women by 5 year age group, New Zealand 2013, New Zealand born in Australia 2011

	New Zealand	NZ born in Australia
	2013	2011
25-29	94	103
30-34	91	104
35-39	90	104
40-44	89	100
45-49	92	101

Sources: Statistics New Zealand, Census of Population and Dwellings