

## Understanding ‘higher’ Māori Fertility in a ‘low’ Fertility Context: Does Cultural Identity Make a Difference?

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### Abstract

The Māori fertility transition brought an end to decades of very high fertility rates, and a convergence towards long-term fertility levels similar to Pākehā/New Zealand European women. However, important differences endure. The Māori total fertility rate (TFR) remains above replacement level, and Māori women have children earlier and over a longer period. All of this has and still is occurring in a society that facilitates and favours low fertility and small family sizes. Using births data and cultural identity markers in the New Zealand Census, this paper explores the influence of culture as a contributing factor to higher fertility outcomes amongst Māori women in a low-fertility society.

**D**escribed as one of the most dramatic fertility transitions to occur in recent history (Pool, 1991; Wereta, 1994), Māori birth rates underwent a steep and rapid decline between 1966 and 1976, abruptly ending decades of very high fertility. Even more extraordinary is that this phenomenon occurred against a backdrop of a predominantly Pākehā population that had already been through a fertility transition nearly a century earlier (Pool, 1991; Pool, Dharmalingam, & Sceats, 2007). Not only did the timing of both transitions differ, but the mechanisms and determinants through which low fertility was achieved also differed. For Pākehā women, changing marriage patterns mostly facilitated their fertility transition during the latter part of the 19th century (Pool et al., 2007), while the uptake of more effective contraceptive methods and sterilisation were important factors that enabled the Māori fertility transition to occur (Pool, 1991). Pool (1991) describes this dichotomy within the relatively “tiny” nation: a nation that

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consists of two major populations whose histories have been very much intertwined since first contact, and yet two very distinct demographic histories have transpired, involving quite different fertility and family formation patterns (Pool et al., 2007).

Despite both populations experiencing quite different fertility transitions in timing and mechanisms, differences in fertility levels have diminished over time (Pool, 1991; Pool et al., 2007; Pool & Sceats, 1981). If we compare total fertility rates (TFR), Māori fertility appears to be converging towards Pākehā fertility. For example, in 1977 the Māori TFR and New Zealand TFR was 3.0 and 2.3, respectively, and by 2017, it was 2.3 and 1.8, respectively (Stats NZ, 2017b). However, there are some important differences that endure. Māori TFR has consistently exceeded Pākehā TFR; never have the two rates intersected. Taking national TFR as a comparator, the smallest difference (between Total New Zealand TFR and Māori TFR) was in 1990, at 2.16 and 2.18, respectively, and the largest difference was in 1997, at 1.95 and 2.73, respectively (Stats NZ, 2017b).

There are other features that challenge this notion of convergence. One key aspect is that Māori women have different age-specific fertility patterns, with peak childbearing at younger ages. From 2002 and 2012, age-specific fertility rates for Māori peaked at ages 20–24 years, only moving to 25–29 years in 2013 (Stats NZ, 2017a); the median age of mothers was 25.8 years in 2013 and has slowly shifted upwards to 27.0 in 2018 (Stats NZ, 2018). Indeed, rather than a simple pattern of fertility convergence, closer inspection of age-specific fertility patterns has uncovered a mix of converging, diverging and corresponding trends between Māori and Pākehā fertility (Didham & Boddington, 2011; Jackson, Pool, & Cheung, 1994). As explained by Jackson et al. (1994), general fertility trends have been similar, and both populations have also experienced falls in fertility at 15–19 and 20–24 years since the 1960s.

However, since the 1980s, the two populations diverged at ages 25–44 years, where Māori fertility rates fell below non-Māori. At the same time, both populations have seen a rise in fertility at ages 25–39 years due to a “recuperation effect”, as posited by Pool and Sceats (1981). Of course, the shift to older maternal ages are more marked for non-Māori and has increased the differentials between Māori and non-Māori (Jackson et al., 1994).

Taylor (2011) and Johnstone (2011) found similar patterns of earlier childbearing in other “neo-Europe” countries, notably Canada, Australia and the United States. Despite fertility declines during the latter years of the 20th century, indigenous fertility remains concentrated at younger ages – an observation that Pool (1991) noted for Māori 20 years earlier. From a global standpoint, it is a scenario that partly explains the irony of why New Zealand, being one of the “low fertility” countries, has one of the highest fertility rates in the developed world (McDonald & Moyle, 2010).<sup>1</sup>

While the demographic literature describes how historical Māori and indigenous fertility patterns have unfolded over time, less attention has been devoted to understanding the “why” (Douglas, 1977b; Pool, 1991). One of the key criticisms is that conventional demography practices tend to treat indigenous populations as a deficient group (Kukutai & Pool, 2014) that requires “fixing”. This line of thinking underscores the common analytical approach to make inter-group comparisons in Aotearoa New Zealand. Up until recently, most analyses of Māori fertility have been approached and examined in relation to non-Māori fertility patterns. A further criticism of this approach is that it promotes a unidimensional representation of populations that are inherently multi-dimensional (Kukutai & Pool, 2014) because conventional categories and contexts do not necessarily reflect indigenous realities (Johnstone, 2011; Kukutai, 2011; Kukutai & Pool, 2014; J. Taylor, 2009). As a consequence, important intra-group differences are overlooked. Most of the fertility literature has primarily focused on demographic and socio-economic factors, while the possible influence of cultural factors has received less attention and articulation.

Using data from the New Zealand Census of Population and Dwellings, this paper explores how fertility varies between Māori women based on their expressed identification. In doing so, it aims to contribute a better understanding of how cultural factors might contribute to fertility outcomes amongst some Māori women in society. Here, we use the term “culture” quite loosely to encapsulate the ideas, customs, social behaviours, values, worldviews, etc. of a group of people (Jenks, 2005; Ogburn, 1937). The motivation to explore the cultural element stems from the dearth of literature on this subject in the field of demography, but more importantly, the need to include indigenous worldviews in the analysis of indigenous

fertility. The Demographic Transition (DT) model has been the main framework for theorising and analysing indigenous fertility (Dyson & Murphy, 1985; Omran, 2005; Reher, 1999). Like Māori, other indigenous peoples in colonised nation states have also undergone significant fertility transitions “near-simultaneously” (Caldwell, 2006), and these have often been interpreted as evidence of a global convergence towards fertility behaviour (Johnstone, 2011). DT theory, and other dominant fertility theories (e.g. low-fertility theories based on rational choice and gender equity), are underpinned by Western-based experiences and worldviews (Kirk, 1996; van de Kaa, 2008). However, Johnstone (2011) points out that colonisation has affected indigenous populations. Pool (2015) clearly shows the impact of colonisation on early Māori demography, but most importantly the enduring domino effect on other aspects of Māori society, including social, economic and cultural. The problem is, as pointed out by Johnstone (2011), demographic theor[ies] do not serve well in understanding colonised indigenous populations fertility experiences because those theor[ies] “fail to account for the impacts of colonisation” (p. 116). Research in the indigenous demography space has highlighted the unique issues pertaining to the interpretation of indigenous population change (Johnstone, 2011; Kukutai, 2011; Kukutai & Pool, 2014; A. Taylor, 2011; J. Taylor, 2009) but more work is needed in developing theoretical frameworks that incorporate indigenous views. It is the intent of this research to weave into the study of Māori fertility interpretations that resonate with and are important to Māori.

The next section provides the historical context for Māori fertility and reviews some of the key arguments about Māori fertility patterns. Hypotheses regarding the variation of fertility based on expressed identification are tested using quantitative methods. The paper ends with a discussion of how the findings provide insight into the validity of cultural influences on Māori fertility outcomes.

## **Background: The persistence of ‘higher’ Māori fertility**

The history of Māori fertility patterns in the field of demography has been well documented (Douglas, 1977a, 1977b, 1981; Pool, 1974, 1977, 1991; Zodgekar, 1975), and forms the basis of today’s fertility patterns.

Throughout the post-colonial period until the Māori fertility transition, Māori birth rates were generally understood to be “high”. Assumptions about Māori fertility prior to the 1900s were rather sketchy, making it challenging to fully substantiate whether they were “high” or “low” (see Chapter 4 in Pool, 1977). However, through the extrapolation of 1961 vitals data, estimates going as far back as 1844, clearly show the height of Māori fertility before the transitional decline. The estimated Māori fertility rates at various time points between 1844 to 1961 produced by Pool (1991) are replicated here in Table 1.

There was a general increase in fertility rates over the period but with particularly higher rates in the forty years (1921–1961) immediately preceding the Māori fertility transition. Higher rates of fertility just before a long-term decline was a feature shared with other countries. In moving towards an explanation for this general pattern over the period under scrutiny, Pool (1991) considers at least two explanations: (1) the natural history of venereal diseases, and (2) the natural history of reproduction before a fertility transition (see Chapter 5 in Pool, 1991). Sexually transmitted diseases (STDs), and exposure to diseases and malnutrition that affected fecundability and foetal survival were cited as major factors impacting on fertility levels around the mid-1800s (Pool, 1991). However, in explaining the increase in fertility from the 1880s and thereafter, it appears that “a degree of equilibrium” and “partial immunity” had lessened the severity of the disorders, and improved survivorship levels through better living conditions and nutrition (Pool, 1991). Other features of higher Māori fertility included high levels of early exposure to conception (15–19 year olds), even though there was only a small percentage of those who ever married, and there were few attempts to limit family size at older ages (Pool, 1977).

**Table 1: Estimated Māori total fertility rates, 1844–1961**

<b>Year</b>	<b>Māori TFR (estimated)</b>
1884	4.5
1857/8	4.9
1878	5.5
1886	6.1
1891	5.7
1896	5.7
1901	5.9
1911	5.7
1921	6.1
1926	6.7
1936	6.9
1945	6.5
1951	6.7
1956	6.9
1961	6.9

Source: Pool (1991), Tables 5.3 and 6.2.

In explaining high Māori fertility, Douglas (1977b) analysed some of the cultural responses deeply embedded within close-knit rural tribal communities. He defined cultural in terms of the “interdependence of economic, social and psychological factors in determining norms and values” (Douglas, 1977b, p. 663). In traditional Māori society, customary marriage, including remarriage, was universal, and although unions were mostly endogamous (i.e. to other Māori), inter-tribal marriage was frequent for the purpose of forming political and economic alliances (Biggs, 1960; Wanhalla, 2011). Inter-marriage with Pākehā did exist, although it was not encouraged so as to prevent “rapid alienation from Māori ways and the eventual loss of descendants to the pakeha world” (Douglas, 1977b, p. 666). Children were also valued as an essential part of the social and economic functions of rural Māori society but were also important in sustaining whakapapa (genealogy), a key principle in whānau (family) formation (Douglas, 1977b).

The 1960s are generally observed as the turning point for the Māori fertility transition. Fertility rates began to decline quite sharply at the start of the decade, and then accelerated, with the greatest and most rapid decline occurring between 1971 and 1976 (see Table 2). This transition drew significant interest from a number of demographers

because of the magnitude and speed of the shift, from decades of high levels of fertility to seemingly low levels of fertility similar to Pākehā rates.

**Table 2: Māori total fertility rates, 1962–1986**

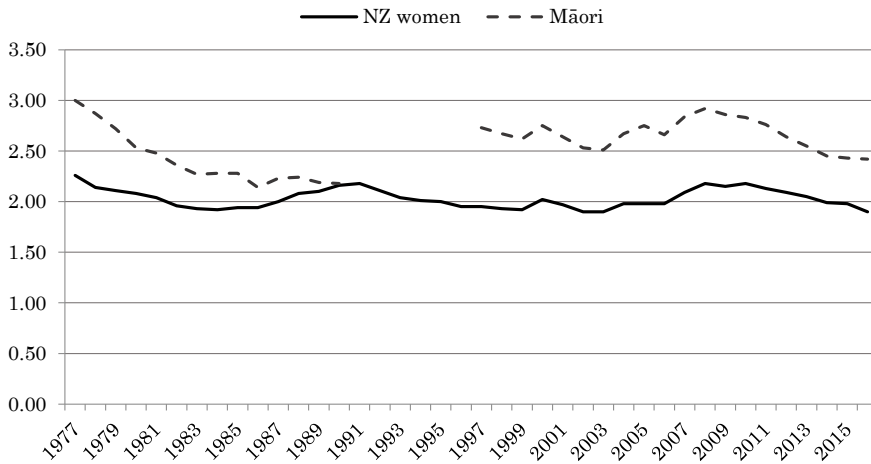
Year	Māori TFR (estimated)
1962	6.2
1966	5.5
1971	5.1
1976	3.1
1981	2.5
1986	2.2

Source: Pool (1991), Table 8.2.

In explaining Māori fertility decline, some of the reasons presented included urbanisation, rising educational aspirations and achievements, changing mortality, and intermarriage with Pākehā (Pool, 1974, 1991). Douglas (1977b) applies the same cultural lens used in understanding a high fertility regime to understanding Māori fertility decline. He points out acculturation as an influencing factor facilitated by assimilation policies as a means of “civilising” and “assimilating” Māori into Pākehā society:

Many Maoris, especially younger ones, have been so well acculturated that they accept pakeha ideals of what a good Maori should be. The desire for acceptance by pakeha mentors and peers has had further effects on changing the residual Māori values, especially in the area of family life. (Douglas, 1977b, pp. 677–678).

The days of high birth rates are now a distant memory. Since 1976, Māori TFRs have hardly exceeded three children per woman but still hover above the theoretical replacement level of 2.1 (see Figure 1).<sup>2</sup>

**Figure 1: Total fertility rates of Māori and New Zealand women, 1977–2016**

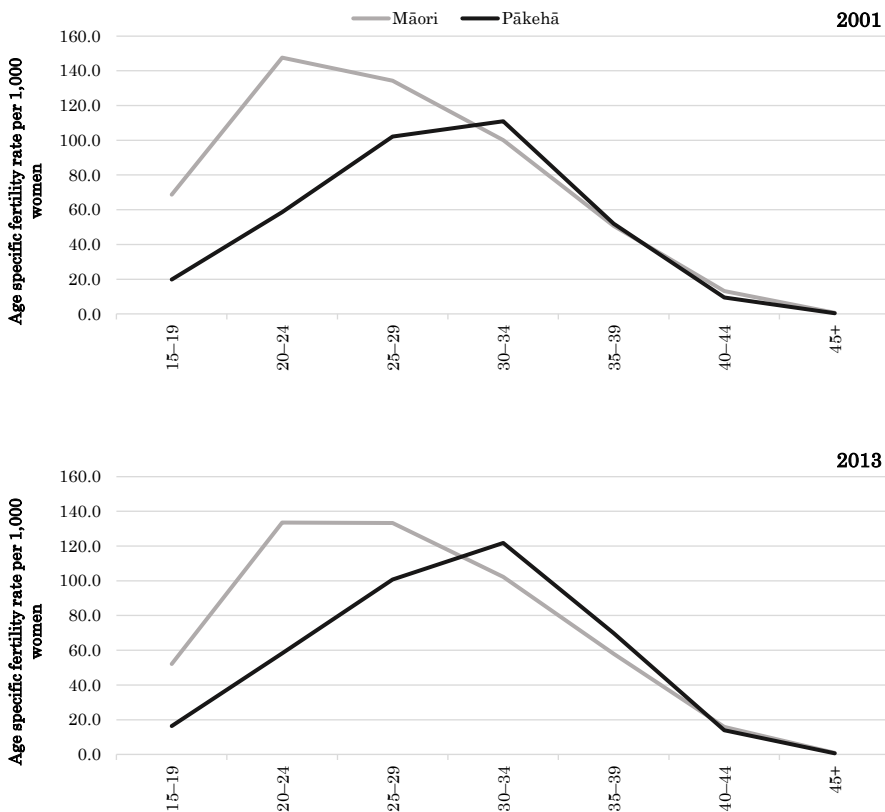
Source: Statistics New Zealand infoshare Table DFM044AA (Annual June); last updated 17 November 2016.

The shift has generally been interpreted to mean that Māori fertility levels have converged towards Pākehā levels. However, as Jackson et al. (1994), Johnstone (2011), and Didham and Boddington (2011) have pointed out, Māori and non-Māori women's fertility still differ at key reproductive ages. The incidence of Māori births and age of first births are much more concentrated at younger ages (15–29 years) (Figure 2).

The peak ages at which Māori fertility is highest occurs between 20 and 29 years, the period during which formal tertiary education, training, and career opportunities are mostly undertaken. Education, in itself and as a proxy for human capital development, has been cited as the primary factor in delayed family formation (Bledsoe, Casterline, Johnson-Kuhn, & Haaga, 1999; Rindfuss, Bumpass, & St. John, 1980). What then, are some of the motivations for Māori women to start or continue bearing children at these young adult ages?



**Figure 2: Age-specific fertility rates (per 1000 women) for Māori and Pākehā/New Zealand European women, 2001 and 2013**



Source: Statistics New Zealand age-specific fertility.

This study draws from the learnings framed by Douglas back in 1977. If acculturation was considered to be a factor in the decline in Māori fertility transition, then to what extent has the Māori renaissance, indigeneity, or decolonisation influenced Māori women’s fertility aspirations since? Are there still some undercurrents of culture that influence the way in which Māori women think about family formation, the value of children, childbearing and rearing in terms of timing, spacing, and number of children, etc? One of the aims of colonisation is to displace indigenous identity. However, Māori identity is multi-faceted (Barcham, 1998; Borell, 2005; Durie, 1995, 1998; McIntosh, 2005; Walker, 1989; Webber, 2008), although at the heart of identity is whakapapa or shared descent.

The closest proxy to cultural identity in the census is expressed identification. The aim is to look at whether Māori women who have multiple unambiguous ties to Māori identity in terms of reporting Māori descent, at least one iwi, and singular Māori ethnicity have higher fertility (using indicators of childless, and average number of children) than women with fewer ties to Māori identity. It is not the intention here to make judgements about degrees of “Māoriness” (Barber, 2004). Rather, there are diverse expressions of Māori identity, and this study offers one way of being able to explore the nexus of culture and fertility for Māori.

## Data and methods

This analysis uses data from the fertility question collected in the New Zealand Census of Population and Dwellings. The census asks each woman aged 15 years and over for “the number of children ever born alive” (Statistics New Zealand, 2013b). By this definition, it does not include foetal deaths, stillborn children, stepchildren, adopted children, foster children, nor wards of the State (Statistics New Zealand, 2013b). Data are classified by the number of children specified from 0 to 10+, and residual-type categories. Given the sensitivity surrounding the question, women can also tick “object to answering”. The question was first asked in the 1981 Census, and repeated in the 1996, 2006 and 2013 Censuses.<sup>3</sup> This analysis compares the “average number of children per woman” and the “proportion childless” using the 2013 Census.

The census also collects information that can represent, in a very broad sense, ties to Māori cultural identity through expressed Māori identification.<sup>4</sup> There are three ways in which the census captures expressions of Māori identity: descent, ethnicity and iwi (Māori tribes). The definition for each is conceptually distinct and yields different population sizes (Kukutai, 2011). Māori descent is a biologically based concept that captures those people who have or claim Māori ancestry (Statistics New Zealand, n.d.–b). The question asks: “Are you descended from a Māori (that is, did you have a Māori birth parent, grandparent or great-grandparent, etc)?” The Māori descent population is the largest and most inclusive of the three Māori identity groupings (Kukutai, 2011).

Ethnicity in the census has a social and cultural foundation. It is statistically defined as:

...the ethnic group or groups that people identify with or feel they belong to. Ethnicity is a measure of cultural affiliation, as opposed to race, ancestry, nationality or citizenship. Ethnicity is self-perceived and people can belong to more than one ethnic group. (Statistics New Zealand, n.d.–a, para.1)

The Māori ethnic group (MEG) is the second largest of the Māori identity categories and is the primary reference group used in census tabulations, media and for administrative and policy purposes (Kukutai, 2011). Iwi affiliation provides yet another way of expressing Māori identity. The concept of iwi affiliation in the census is the closest approximation to a *te ao Māori* concept of whakapapa-based group membership (Kukutai, 2011).<sup>5</sup> Iwi data were collected in early colonial censuses but discontinued after 1901. The iwi question was reinstated in the 1991 Census, largely for the purposes of meeting the Government's statistical needs and obligations (Kukutai & Rarere, 2013; Walling, Small-Rodriguez, & Kukutai, 2009).

The relationship between all three categories is asymmetrical, meaning that, for various reasons, not all individuals who identify with one category identify with any of the others. For example, in the 2013 Census, 17 per cent ( $n = 110,928$ ) of Māori descendants ( $n = 668,724$ ) did not know their iwi, and 16 per cent ( $n = 107,391$ ) did not report Māori ethnicity (Statistics New Zealand, 2013a). Both the ethnicity and iwi questions provide for multiple responses.

The inclusion of three Māori identity markers in the census means that various kinds of categories can be delineated (Kukutai, 2004, 2011), some of which are set out in Table 3. This paper compares the fertility outcomes of Māori women in three mutually exclusive categories:

- a core group that comprises Māori women who unambiguously identify as Māori on the basis of descent, iwi affiliation and exclusive Māori ethnicity
- Māori+ which is women who identify with two or more ethnic groups, one of which is Māori (and who may also report Māori descent and/or an iwi affiliation), and
- women who identify as Māori only by descent (not by ethnicity or iwi affiliation).

While the focus is on understanding within-Māori diversity, all of the analysis also includes a non-Māori comparator.

**Table 3: Group configurations based on Māori categories in the census**

Category label	Description of category configuration
Core	Māori descent and solely MEG and at least one iwi identified
Māori ethnic group (MEG)	Total MEG; i.e. sole MEG and MEG with another ethnic group(s)
Māori	MEG and any other ethnic group; i.e. excludes MEG
Māori descent	Total descent; i.e. descent only, descent with MEG, and descent with iwi identified
Descent only	Solely descent; i.e. no MEG and no iwi identified

A key advantage of using the census is that analyses can be cross-tabulated with other variables of interest. This study thus looks at fertility differences by Māori identification, taking account of differences in education level and Māori spatial population share.

### **Analysis: Intra-group Fertility Differences**

This analysis begins with an overview of some key socio-demographic characteristics for each category of Māori women aged 15 years and older. Table 4 shows significant differences between the categories, reaffirming “cultural and socio-economic heterogeneity within indigenous populations” (Kukutai & Pool, 2014, p. 442).

In terms of group size, the largest in Table 4 is Māori+ (105,003). The number of Māori women identifying with at least two ethnic groups increased by 23 per cent, from 84,816 in 2006 to 105,003 in 2013, which exceeded the growth in the other two categories. The continuing growth in the number of Māori+ is a reflection of a “changing ethnic mosaic of New Zealand” (Khawaja et al., 2000, p. 4). Younger people are more likely to identify multiple ethnic groupings than their predecessors are, partly as a result of inter-ethnic marriage, and also changes in the “concept and understanding of ethnicity” (Khawaja et al., 2000, p. 15). Unsurprisingly, the age structure of the Māori+ grouping is also much younger, with higher proportions at the younger ages (15–24 years) and smaller proportions at

the older ages (50+ years). Age structure differences would be even more marked if children were included in the analysis.

**Table 4: Demographic and socio-economic profiles of women (15+) by category, 2013 Census**

Indicator	Core	Māori +	Descent only	non-Māori
Number of women 15+	91,611	105,003	18,414	1,306,068
<b>Age structure(%)</b>				
15–19	10.6	16.5	12.6	7.2
20–24	9.5	14.6	12.0	7.5
25–29	8.3	11.1	9.6	7.3
30–34	7.9	10.2	9.0	7.6
35–39	8.6	10.1	9.6	8.1
40–44	9.9	9.6	10.0	9.4
45–49	9.8	7.7	8.7	9.2
50–54	10.0	6.8	8.5	9.1
55–59	8.1	4.7	6.3	7.9
60–64	6.2	3.4	4.5	7.1
65+	11.2	5.3	9.1	19.7
<b>Highest education level (%)</b>				
None	36.2	22.3	24.4	18.5
Secondary	39.7	48.1	47.7	41.5
Diploma	13.5	14.6	14.3	16.2
Degree+	10.5	14.9	13.7	23.9
<b>Labour force status (%)</b>				
Employed	48.9	56.9	63.2	58.9
Unemployed	12.2	9.8	6.0	3.9
Not in the labour force	38.9	33.3	30.8	37.1
<b>Occupation (%)</b>				
Managerial and professional	44.2	47.9	45.7	54.2
Service and administration	34.3	39.3	40.8	35.2
Labour intensive	21.5	12.8	13.4	10.6
<b>Te reo (%)</b>				
Can speak te reo	37.0	13.2	1.7	0.6
<b>Māori Ethnic Group (MEG)</b>				
Lives in a TA with at least 20% MEG (%)	48.7	30.9	24.4	15.7

By contrast, both the Core and Descent-only groupings declined in size between 2006 and 2013, at 0.6 and 3.6 per cent, respectively. The larger Core grouping has an older age structure than the other Māori groupings, with higher proportions at ages 40+ years but is still much more youthful than the non-Māori category. The age structure of the Descent-only grouping is not as young as the Māori+, but is more so than the Core grouping.

Different age structures also have a flow-on effect on socio-economic status and fertility outcomes. It is generally understood that Māori have poorer outcomes than non-Māori across a number of socio-economic and health indicators (Ajwani, Blakely, Robson, Tobias, & Bonne, 2003; Robson & Harris, 2007). Māori also tend to be over-represented in occupations that are deemed lower skilled, lower paid, and more vulnerable to economic shocks. These inequities are also reflected in Table 4. However, intra-group differences are also clearly marked. Women with multiple ties to Māori identity are more disadvantaged than either women whose only tie to Māori identity is through descent or women who identify as Māori with at least one other ethnicity. For the majority of the latter, the other ethnicity is Pākehā/New Zealand European. Women in the Core category, while having richer ties to te ao Māori,<sup>5</sup> also seem to be disproportionately exposed to processes that are correlated with poor outcomes, including racial discrimination and fewer opportunities (Harris et al., 2012; Houkamau & Sibley, 2015; Kukutai & Pool, 2014; Pack, Tuffin, & Lyons, 2016; Robson & Harris, 2007).

Age composition also has important implications for this analysis. Fertility, which refers to the actual “reproductive performance rather than capacity” (United Nations, 2017), is affected by the fecundity and fecundability of the individual and/or couple. *Fecundity* is defined as the “capacity for a man, woman, or couple to participate in reproduction” (United Nations, 2017), whereas *fecundability* refers to the probability of a woman conceiving per menstrual cycle, excluding periods of pregnancy, anovulation, and practising contraception (Potter & Sakoda, 1967; United Nations, 2017). Over the reproductive span, of which the lower and upper parameters are set by menarche and menopause, respectively, fecundability varies by age generally as follows: increasing during teenage years, peaking at ages 20–29 years, and declining gradually thereafter (Pool & Sceats, 1981). With this in mind, we therefore restrict our analysis

to the fertility outcomes of women aged 30–34 years old.<sup>6</sup> This is based on the premise that we are very unlikely to capture “completed fertility” for women under age 30 and that the probability of conceiving decreases markedly after age 35 (Weinstein, Wood, Stoto, & Greenfield, 1990).

The effects of age on fertility are illustrated in Table 5, which shows the age-specific rates of childlessness and the average number of children for each grouping. Obviously, as we progress through the age groups, proportions of childlessness become smaller. However, women who identified multiple unambiguous ties to Māori identity had significantly lower rates of childlessness than their peers at each age group over the key reproductive ages 15–34 years. Even if we focus on ages 30–34 years, intra-Māori differences are still significant. Here we see a gradient where the Core grouping has lower rates of childlessness and higher average number of children per woman, and women who identified only by descent have higher rates of childlessness and lower average number of children. Although the Core grouping has a relatively older age structure, the rates of childlessness were notably lower amongst teenage women aged 15–19 years and young adults aged 20–24 years.

There are also marked differences in family size.<sup>7</sup> Figure 3 shows the proportion of women by the number of children specified.<sup>8</sup> We use two children as the mid-point for distinguishing between “small” (1–2 children) and “large” (3+) families. More than 43 per cent of women aged 30–34 ( $n=2973$ ) who unambiguously identified as Māori had large families, with nearly 13 per cent ( $n = 378$ ) having more than six children. In contrast, the majority of the Māori+ and Descent-only groupings had smaller-sized families – 47 per cent and 48 per cent, respectively. Again, we see a gradient within the Māori groupings: women in the Core grouping have the lowest proportions of childlessness and highest proportions with large families, and women with “thinner” ties to Māori identity (i.e. Descent only) have highest proportions of childlessness and lowest proportions with large families. Nevertheless, Māori women are still different from New Zealand women who have no connection to Māori identity (i.e. non-Māori), who have the highest level of childlessness, 38.7 per cent, and lowest level of large families, 12.8 per cent.

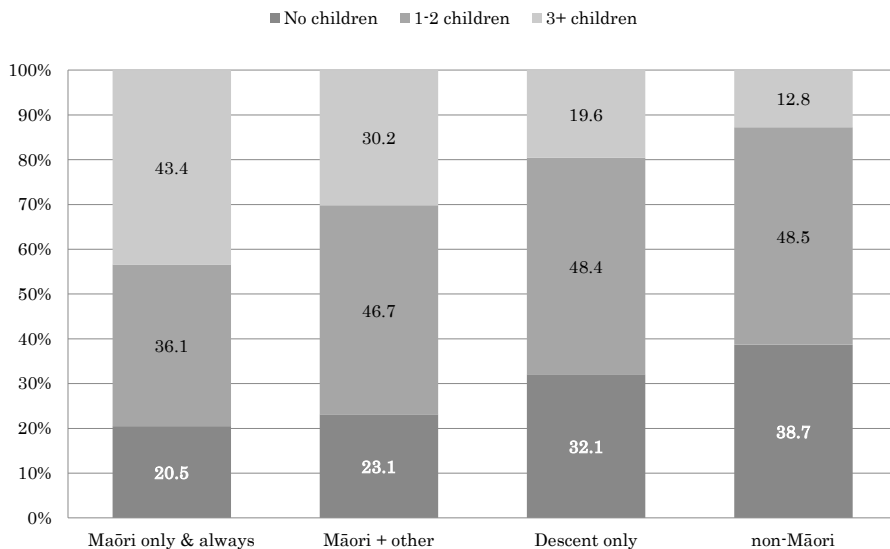
**Table 5: Average number of children per woman and percentage childless by age groups, 2013 Census**

Age group	Average #	% Childless
<b>Core</b>		
15-19	0.1	90.9
20-24	0.8	52.1
25-29	1.7	29.0
30-34	2.3	20.5
35-39	2.7	15.1
40-49	2.8	13.7
<b>Māori +</b>		
15-19	0.1	94.1
20-24	0.6	61.8
25-29	1.3	36.8
30-34	1.9	23.1
35-39	2.2	15.3
40-49	2.4	12.5
<b>Descent only</b>		
15-19	0.0	96.9
20-24	0.4	73.3
25-29	0.9	50.9
30-34	1.5	32.1
35-39	1.8	20.4
40-49	2.0	17.3
<b>Non-Māori +</b>		
15-19	0.0	98.1
20-24	0.2	84.8
25-29	0.6	63.7
30-34	1.2	38.5
35-39	1.7	22.1
40-49	1.9	16.9

Source: Statistics New Zealand customised data, 2013.



**Figure 3: Proportion of women (ages 30–34) by family size, 2013 Census**



Source: Statistics New Zealand customised data, 2013.

*The roles that occupy women: Education and child-bearing*

The inverse association between education and fertility is one of the most extensively and frequently observed relationships in empirical studies of fertility (Cochrane, 1979; Diamond, Newby, & Varle, 1999; Michael, 1973). Women pursuing education tend to delay childbearing, and/or have fewer children (Bledsoe et al., 1999; Michael, 1975). Education is also considered to be a prime factor in conditioning women’s roles because it imparts values, aspirations and skills that encourage or facilitate non-familial roles (Rindfuss et al., 1980). With these theories in mind, we look at the education and fertility patterns as shown in Table 6.

**Table 6: Average number of children per woman and percentage childless of women aged 30–34 by highest education level, 2013**

Highest qualification level	Average #	% Childless
<b>Core</b>		
None	2.8	17.4
School	2.3	19.5
Sub-degree	2.3	20.0
Degree +	1.6	30.8
<b>Māori +</b>		
None	2.6	14.0
School	1.9	20.7
Sub-degree	1.8	22.0
Degree +	1.3	36.2
<b>Descent only</b>		
None	2.2	18.2
School	1.5	30.9
Sub-degree	1.5	31.4
Degree +	0.9	49.4
<b>Non-Māori +</b>		
None	1.9	21.8
School	1.4	30.3
Sub-degree	1.2	35.9
Degree +	0.9	48.8

Source: Statistics New Zealand customised data, 2013.

If we reflect on the major fertility differences across the identity categories, we see higher average number of children and lower rates of childless amongst women with no qualifications than those women with a degree or higher. Because of the strong correlation between socio-economic status (especially education) and fertility, it could be argued that fertility differences are driven by education rather than identity. However, looking at the different education levels, we still find major differences across the identification groupings but mostly at the higher education levels. Focusing on those 30–34-year-old women with a degree or higher, the Core grouping still has a higher average number of children per woman (1.6 per woman) and significantly lower rates of childlessness (30.8 per cent) than women categorised in Māori+ and Descent only. Notably, the differentials in childlessness within the Core grouping by education level are much smaller than the internal differences found in both Māori+ and Descent only. This suggests that the progression through higher levels education

has less of an impact on childbearing for women who have “thicker” ties to Māori identity than women who only identify as Māori on the basis of descent.

## **Geographical differences in women’s childbearing patterns**

Global studies of fertility, particularly in Europe and South-East Asia, have highlighted the importance of geographical interpretations of fertility trends and issues. Boyle (2003) argues: “Geographical variations, or the lack of them, matter when we try to understand fertility variations, and place, or context, is important to fertility decision-making” (p. 616). He further highlights that individuals in similar social classes and occupations had very different fertility rates depending on where they lived. Szreter (1996) also theorises the relevance of “communication communities” in shaping fertility behaviours. These are defined as “social networks through which persons acquire, reproduce and negotiate their social and gender identities” (see footnote in Szreter, 2011, p. 79). He also identified that communication communities were strongly related to the unique characteristics of specific towns and other geographical localities (Szreter, 1996, 2011; Szreter & Garrett, 2000). With this in mind, we make a bold assumption that the level of fertility would be higher in spatial areas where there is a greater chance of people being exposed or coming into contact with large communities or networks who share similar socio-cultural identities, and vice versa.

For this undertaking, we look at the fertility outcomes of women aged 30–34 in each grouping by territorial authorities (TAs). However, due to small numbers we have grouped the TAs into three spatial categories based on the population share of Māori (i.e. MEG) living in those areas in the 2013 Census:

- High – TAs with more than 20.0 per cent MEG
- Medium – TAs with 10.0–19.9 per cent MEG
- Low – TAs with less than 9.9 per cent MEG.

**Table 7: Average number of children per woman and percentage childless women aged 30–34 by territorial authorities (TAs) grouped by Māori population share, 2013 Census**

TA Māori population share	Average #	% Childless
<b>Core</b>		
High	2.5	17.7
Medium	2.2	22.5
Low	2.0	25.8
Total NZ	2.3	20.5
<b>Māori +</b>		
High	2.2	16.6
Medium	1.8	24.9
Low	1.5	29.5
Total NZ	1.9	23.1
<b>Descent only</b>		
High	1.7	26.3
Medium	1.4	32.9
Low	1.4	37.4
Total NZ	1.5	32.1
<b>Non-Māori +</b>		
High	1.5	28.4
Medium	1.2	38.6
Low	1.1	43.2
Total NZ	1.2	38.5

Source: Statistics New Zealand customised data, 2013.

The results in Table 7 reflect what we had expected. For every grouping, fertility was higher in areas where Māori comprise at least one fifth of the TA population. In high areas, there was very little difference in childlessness and average number of children between Core and Māori+ women. The effect of geography seemed more marked for Descent-only category, with a much wider range in childlessness than both the Core and Māori+ categories. Descent-only women also shared fertility outcomes similar to non-Māori.

## **Conclusion: Does cultural identity make a difference?**

The Māori fertility transition brought an end to decades of very high fertility rates, and a convergence towards long-term fertility levels similar to Pākehā/New Zealand European women. However, as recent research has emphasised and re-emphasised, important differences endure. Age-

specific data indicate that Māori women have children earlier and over a longer period. All of this has occurred within a low-fertility context that facilitates and favours low fertility and small families. We considered whether cultural factors might contribute to this phenomenon. As a starting point, we used fertility and Māori identity markers as proxies for culture from the New Zealand Census to test this hypothesis.

So, does cultural identity make a difference to Māori fertility outcomes? This analysis has shown compelling evidence that culture does matter. We found systematic differences in fertility outcomes by Māori cultural identity as measured by expressed identity in the context of the census. These differences were most evident when comparing Māori women with multiple ties to Māori identity markers, and those on the “fringes”. These differences were mediated by education and geography. The main take-home point is that there was a consistent gradient, where at the core, fertility was highest and women had more children on average. In contrast, women who expressed singular Māori identity by descent had lowest fertility, fewer children on average, and higher rates of childlessness. Even so, Māori women still had higher fertility outcomes than New Zealand women with no connection to Māori identity.

This research shows that this focus on culture is an important and valid area of research. However, the data presented in this paper indicate that culture only matters to an extent. We acknowledge that this analysis is limited to the concepts, constructs and measures used in the New Zealand Census. In no way can these categories tell us what those cultural values or ideas are that inform attitudes about fertility, and/or shape behaviour. This requires further exploration via qualitative-based methods.

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## Notes

- 1 Of the OECD, only three countries had higher TFRs than New Zealand (1.9): Israel (3.1), Mexico (2.2), Turkey (2.1).
- 2 It is important to note here the obvious “break” and “leap” in the Māori TFR data between 1990 and 1997. No figures were available for 1991 to 1996 (see footnotes in Stats NZ, 2017b). We suspect that the leap from 2.2 in 1990 to 2.7 in 1997 is an artefact resulting from broader changes in the collection of ethnicity-based data from “blood quantum” to self-identification during this period (see Kukutai, 2001, 2004, 2012). This change to self-identification was applied to birth registrations from 1995. We also note that since 1991, Māori TFRs are based on the ethnicity of the mother, and were previously based on the ethnicity of the child (see footnotes in Stats NZ, 2017b). This raises a separate question, requiring further examination, about the disjunction between the numerator (all births deemed to be Māori) linked to a denominator that excludes non-Māori mothers, and therefore, an over-estimation of the Māori TFRs. For further details, see Khawaja, Boddington, and Didham (2000).
- 3 The question has also been included in the 2018 Census.
- 4 The New Zealand Census also collects information on te reo Māori. Although te reo is a distinctive and enduring marker of collective Māori identity (Ngaha, 2014), it did not make sense to include it as part of expressed Māori identification alongside ethnicity, descent and iwi. A separate analysis was also undertaken to explore fertility differences between Māori women te reo speakers and non-speakers. Preliminary results indicated that there was very little difference in fertility between speakers and non-speakers amongst the Māori Core grouping and Māori ethnic group. Although there were marked differences in other categories, the number of speakers were too small to make any robust conclusions.
- 5 Te ao Māori translates to the Māori world.
- 6 For an example that confines an analysis to ages 30–34, see Menken (1985).
- 7 Used here to mean the average number of children.
- 8 Those women who “objected to answer” are excluded from the denominator.

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