



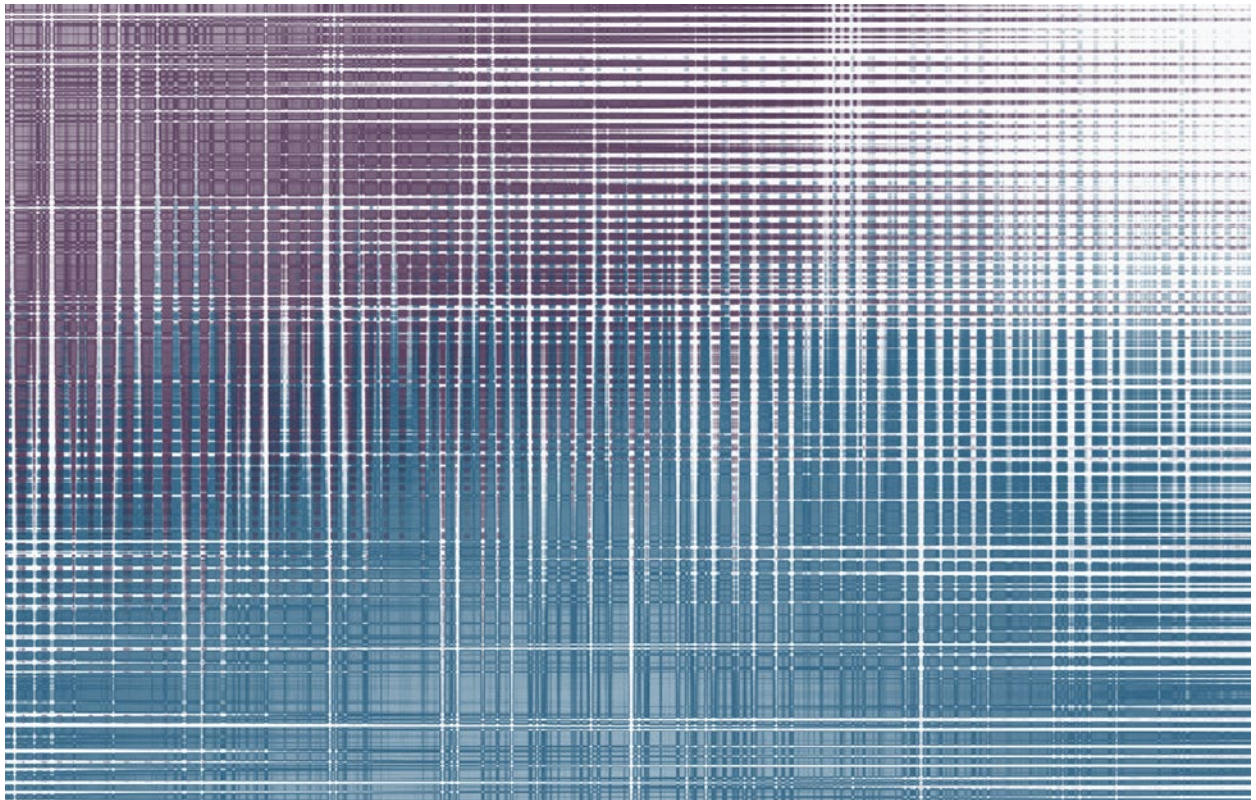
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A new method of estimating the number of Indigenous business owner–managers

S Shirodkar, B Hunter and D Foley

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ANU Centre for Social Research & Methods

Research School of Social Sciences
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A new method of estimating the number of Indigenous business owner–managers

S Shirodkar, B Hunter and D Foley

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Abstract

Accurate estimates of the size of the Indigenous business sector are valuable for policy makers, practitioners and academics. Such estimates provide one measure of Indigenous economic advancement. A difficulty in developing these estimates has been a lack of suitable data for calculating key unknowns, such as changes in Indigenous identification by individuals. Using the three-wave Australian Census Longitudinal Dataset (ACLД), which links individuals between the past three (2006, 2011 and 2016) Censuses of Population and Housing, this paper addresses these data gaps and presents a transparent methodology for estimating the number of Indigenous business owner–managers.

Using information about the greater rate of Indigenous self-identification over time from the ACLД, we estimate that around 19 400 Indigenous Australians were business owner–managers in 2016, almost double the number in 2006. We also estimate that Indigenous business ownership as a share of the Indigenous working-age population grew from around 3.3% in 2006 to around 3.7% in 2016. This increase occurred at a time when the rate of non-Indigenous business ownership decreased from 10.0% in 2006 to around 8.7% in 2016, reflecting the ongoing consolidation of the global economy since the global financial crisis. Although the Indigenous business ownership rate remains low compared with the non-Indigenous

rate, the continued growth during challenging times is testament that greater numbers of Indigenous people are aspiring to the opportunity and ambition that business ownership affords. But barriers such as implicit or unconscious bias in society still exist and may limit opportunities for faster Indigenous economic advancement.

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Acronyms

ABS	Australian Bureau of Statistics
ACLD	Australian Census Longitudinal Dataset
ANU	Australian National University
CSRM	Centre for Social Research & Methods
ERP	estimated resident population
IPP	Indigenous Procurement Policy
PwC	PricewaterhouseCoopers

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1 Introduction

1.1 Indigenous business sector

Indigenous businesses are crucial for the economic self-determination of First Nations communities in Australia. As a result of the recent growth in awareness of Indigenous business, policy makers are increasingly interested in improving understanding of the sector, estimating its size and charting its growth. This paper provides new, reliable estimates of the size of the sector based on detailed analysis of recent Australian census data.

1.2 Measuring the size of the sector

As a result of challenges around defining and measuring the number of Indigenous businesses, Hunter (2014) attempted to provide a broad-brush estimate of Indigenous self-employment. This paper follows a similar approach to provide updated estimates, but focuses on the variable in the Australian Bureau of Statistics (ABS) Census of Population and Housing of business owner-managers, instead of self-employment. It also builds on the work of Shirodkar et al. (2018), which used the two-wave 2011–16 Australian Census Longitudinal Dataset (ACL D) to produce preliminary estimates of the number of Indigenous and non-Indigenous owner-managers. The current paper uses additional information on Indigenous populations from the 2006–16 (three-wave) ACL D, which tracks a sample of the Australian population from 2006 to 2016. The estimates offer a more refined, consistent and transparent method for estimating the number of Indigenous business owner-managers in Australia.

In particular, this paper uses the information about the greater rates of Indigenous self-identification in the 2016 Census compared with the 2006 Census to develop a better estimate of the number of Indigenous business owners during the past decade.

The paper estimates that the Indigenous business community grew strongly in the decade to 2016, reaching 19 400 owner-managers across Australia. The paper also estimates that the rate of Indigenous business ownership grew from 3.3% in 2006 to 3.7% in 2016. Although still less than half the rate of business ownership compared with non-Indigenous Australia, the rate of Indigenous business ownership grew over the decade at a time when the non-Indigenous rate decreased, reflecting the ongoing consolidation of the Australian economy since the global financial crisis. But implicit or unconscious biases that permeate in large parts of Australian society (Shirodkar 2019) mean that the overall operating environment for Indigenous Australians remains negative and discriminatory, which may temper the growth in the rate of Indigenous business ownership. The following pages outline the methodology used to develop this estimate based on the wider pool of information that the ACL D affords. In the process, we gain some insights into the increased rate of Indigenous self-identification over recent years among Indigenous owner-managers.



2 Definitions

Indigenous entrepreneurship is an emerging field of international scholarship. Much of the research focuses on management issues and on the *Indigenous-specific* aspects of entrepreneurship (Hindle & Moroz 2010, Henare et al. 2014, Dana 2015). Previous Australian studies have also focused on the concept of an Indigenous business (Foley 2013), or an Indigenous Australian entrepreneur (Foley 2000).

This paper focuses on Indigenous Australians who are owner-managers of businesses.

2.1 Why measure the number of Indigenous businesses?

A common question in policy circles and among some academics is ‘How many Indigenous businesses are in Australia?’ Although estimating such a variable could provide a benchmark for Indigenous economic progress, no Indigenous identifier exists in Australia that specifically applies to businesses. Further, looking more closely at such a concept, a number of empirical hurdles could result if we focus exclusively on the entity of a business.

Foley (2013) argued that the definition of an Indigenous business should be directly analogous to the legal and government definitions of whether a person is accepted as ‘Indigenous’. Accordingly, he argued that a business should meet at least three conditions to be accepted as Indigenous:

- At least one person holding equity in the business should identify as being Aboriginal or Torres Strait Islander.
- The business should identify itself as an Indigenous-owned business.
- The Indigenous business community should accept the business as being Indigenous.

Foley’s definition includes businesses that may only have one Indigenous person holding potentially a minority equity stake, rather than insisting on majority Indigenous ownership (or even 50% equity). Foley acknowledged that the definition may cause concerns, especially for policy makers who may want to target programs and direct taxpayers’ funds to those individuals or entities who are most in need. However, the definition is also potentially more restrictive than previous definitions because of the requirement for acceptance by the Indigenous business fraternity, for which arguably each member also faces the same definitional issue.

The difficulty in using the above definition for this paper’s analysis arises from measurement. Not only is it difficult to capture detailed cultural and social context in statistical collections, but comparisons with non-Indigenous businesses are not straightforward, and attempting to distinguish between the two can become perilous. Further, we must be clear that the ‘entity’ of a business can be amorphous. For example, a single business could have multiple Australian Business Numbers sitting under a complex company structure for any number of economic reasons. And attempting to disentangle potentially thousands of complex corporate structures, family trust funds and holding companies to identify the number of actual Indigenous businesses may not necessarily provide an indication of any general Indigenous advancement, but rather may indicate perhaps the corporate sophistication of a handful of businesspeople. The exercise is time consuming, intellectually draining and perhaps ultimately not very informative. Hence, instead of looking at the number of businesses directly, we find much greater value in understanding the individual entrepreneurs themselves.

2.2 What is an Indigenous entrepreneur?

Foley defined an Indigenous Australian entrepreneur in the following way:

The Indigenous Australian entrepreneur alters traditional patterns of behaviour, by utilising their resources in the pursuit of self-determination and economic sustainability via their entry into self-employment, forcing social change in the pursuit of opportunity beyond the cultural norms of their initial economic resources. (2000:11)

The definition applies a range of social criteria that represent the empowering effect of entrepreneurship. One such effect is breaking the shackles of the historical oppressive 'Indigenous Australian economic status quo' (Foley 2000:11), which still defines the experience of many First Australians today. Crucially, Indigenous entrepreneurs offer their community an avenue for greater and long-overdue economic self-determination; create positive role models within families and communities; and can serve as mentors to young, entrepreneurial Indigenous Australians. The difficulty in using the above definition is the impracticality of assessing the social goals of individuals from data sources such as the census.

2.3 What is an Indigenous owner–manager?

Measuring the number of Indigenous business owner–managers is a much simpler task. The census offers the most comprehensive means of capturing Indigenous owner–managers across Australia. It is based on the ABS's census classification of owner–managers. The measure offers the most robust source of information on the sector's scope and growth.

Accordingly, the census definition and the associated census counts form the starting point for this paper's estimate of the total number of Indigenous owner–managers. The 2016 census dictionary provides the following definitions:

An owner–manager of an unincorporated enterprise is a person who operates his/her

own unincorporated economic enterprise, that is, a business entity in which the owner and the business are legally inseparable, so that the owner is liable for any business debts that are incurred. It includes those engaged independently in a profession or trade.

An owner–manager of an incorporated enterprise is a person who works in his/her own incorporated enterprises, that is, a business entity which is registered as a separate legal entity to its members or owners (also known as a limited liability company).



3 Recent trends in Indigenous business ownership

3.1 Number of Indigenous owner-managers

The Indigenous business community grew strongly in the 10 years to 2016, reaching 19 400 owner-managers in 2016 (Figure 1). The estimate provided in this paper is greater than previously offered in Shirodkar et al. (2018), which gave a 2016 estimate of around 17 900. Starting with the raw census count (shown in brown in Figure 1), the estimate adjusts for the undercount of Indigenous Australians in the census (using the estimated residential population, shown in grey in Figure 1). It also accounts for the relatively large number of owner-managers who identified as Indigenous only in later censuses. Biddle and Markham (2018) used the ACLD to show that the net increase in the total Indigenous population from identification change was around 84 600 between 2011 and 2016. Both Biddle and Markham (2018) and Shirodkar et al. (2018) used the two-wave 2011–16 ACLD.

The updated estimate of 19 400 Indigenous owner-managers reflects the increased information derived from the release of the three-wave 2006–16 ACLD, which follows a sample of the population from 2006 to 2011 and then 2016. The latest ACLD release provides greater and more accurate information about the tendency for people to switch their Indigenous status over a longer period. The information enables us to re-estimate the ‘rate of switching’ parameter for Indigenous identity, which results in an overall boost in the number of Indigenous owner-managers (shown in blue in Figure 1).

Applying the new method for 2011, we estimate that there were approximately 14 900 Indigenous owner-managers operating in that census year. Therefore, the number of Indigenous owner-managers grew by around 30% between 2011

and 2016. We estimate that there were around 10 500 Indigenous owner-managers in 2006.

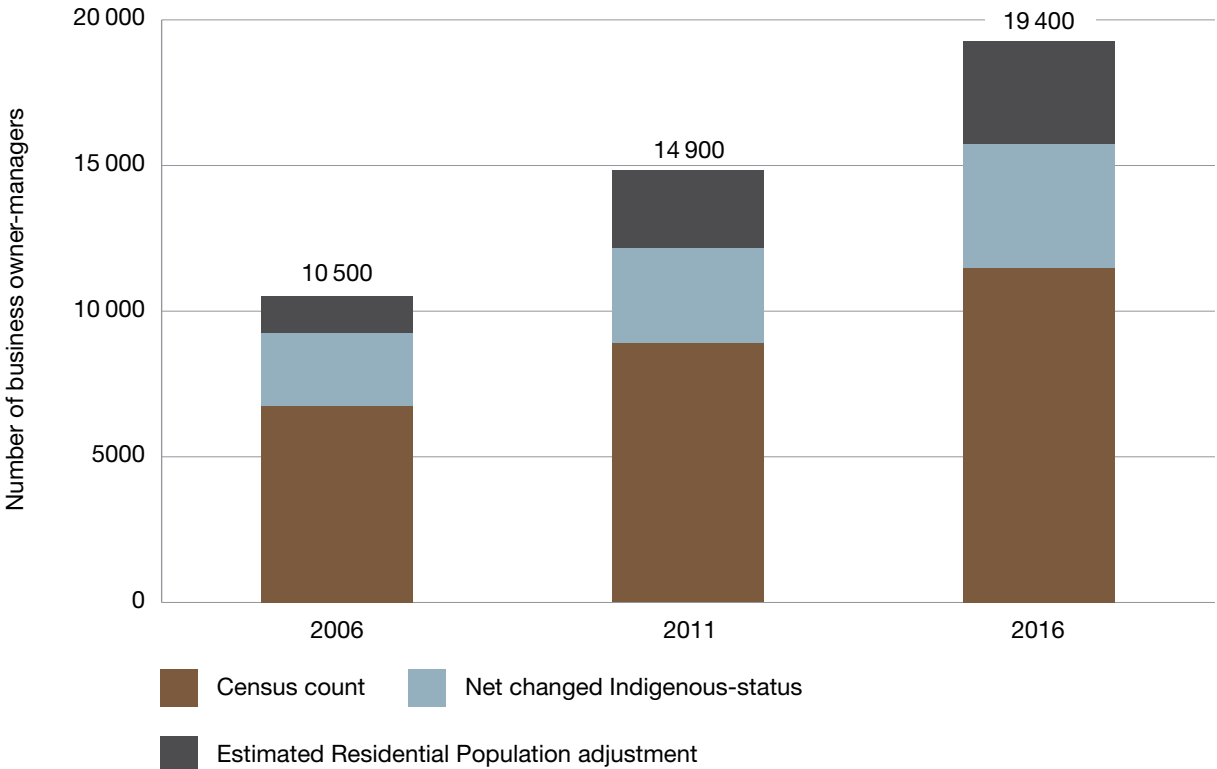
3.2 Rates of Indigenous and non-Indigenous business ownership

Despite the strong growth in the number of Indigenous Australians choosing a life in business, the rate of Indigenous business ownership as a share of the population aged 15 years and over is still significantly lower than the non-Indigenous rate (Figure 2). But some positive signs have emerged. The proportion of Indigenous owner-managers is increasing as a share of the 15+ population, from 3.3% in 2006, to 3.5% in 2011 and 3.7% in 2016. This increase in the rate of Indigenous business ownership has occurred at a time when the proportion of non-Indigenous owner-managers is decreasing – from 10.0% in 2006 to 9.2% in 2011 and 8.6% in 2016. The general decline in the non-Indigenous rate of business ownership reflects the difficulties that have affected the Australian economy since the global financial crisis in 2008. Against that backdrop, the growth in the share of Indigenous owner-managers is noteworthy. It implies that Indigenous owner-managers are making headway in the economy despite the relatively low-growth environment during the past decade.

3.3 Rate of Indigenous business ownership internationally

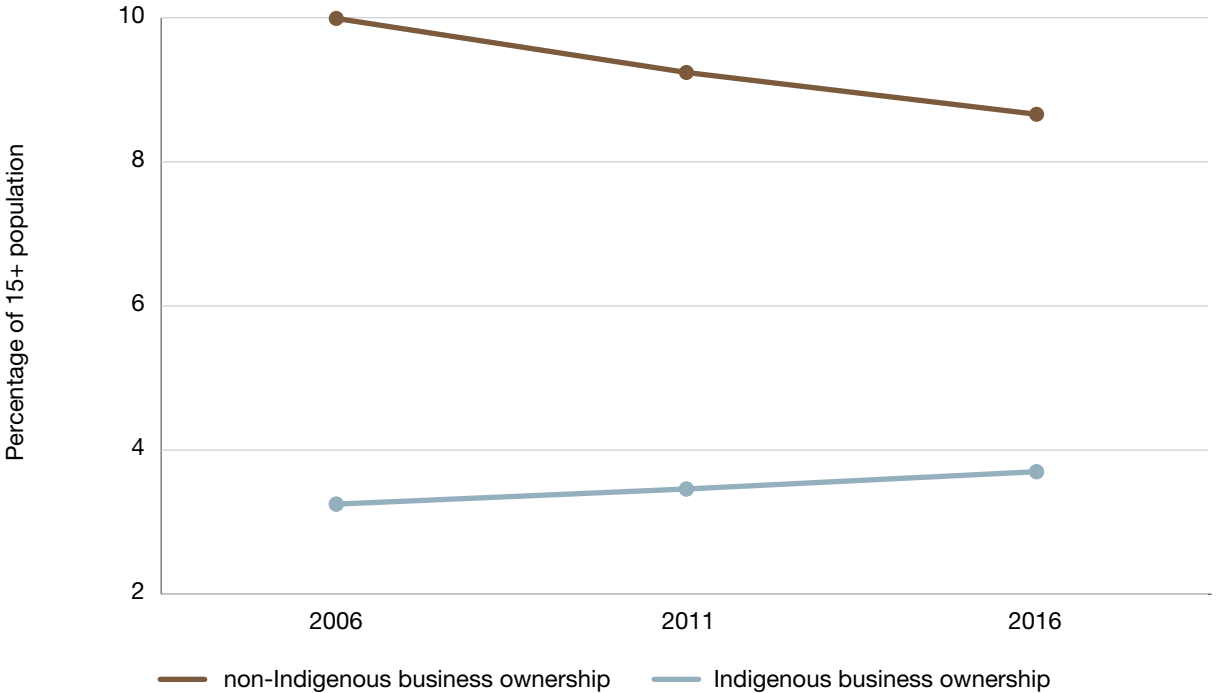
The rate of Australian Indigenous business ownership is lower than rates in First Nations communities in the United States, Canada and Aotearoa/New Zealand (Figure 3). The differences provide some insight into the direction of growth over time of Australian Indigenous

Figure 1 Number of Indigenous owner-managers in Australia, 2006–16



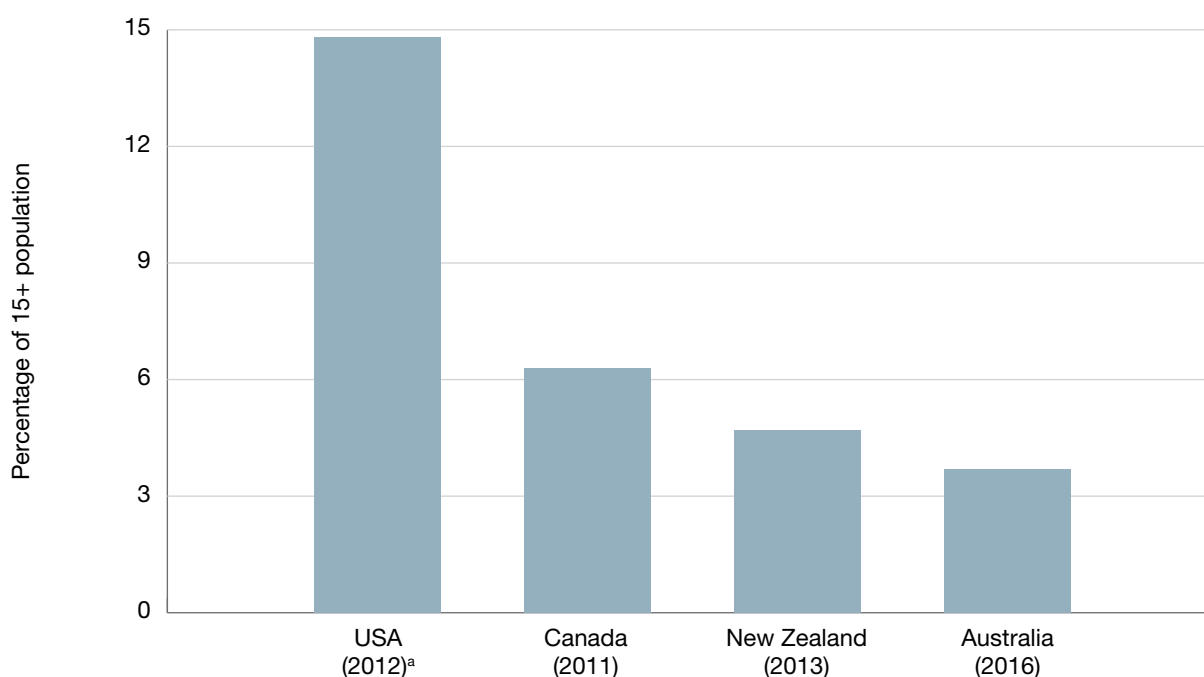
Sources: Authors and Australian Bureau of Statistics; calculations are derived using the methodology developed in this paper

Figure 2 Rates of Indigenous and non-Indigenous business ownership, 2006–16



Sources: Authors and Australian Bureau of Statistics; calculations are derived using the methodology developed in this paper

Figure 3 International comparison of rates of Indigenous business ownership



a United States Indigenous business ownership rate is calculated as a share of the population aged 18 years and over, because figures for the population aged 15 years and over were unavailable.

Sources: Authors; United States Census; Canadian Council for Aboriginal Businesses; statsNZ

business ownership. The current differences in rates of business ownership are likely to reflect two factors: the length of time that Indigenous communities in each country have had to participate economically in their respective non-Indigenous societies, and the fact that, in the three other countries, land settlements came in the form of treaties, which included financial compensation for the expropriation of Indigenous land. Only following the Australian High Court's recent judgment in the Timber Creek case have Indigenous Australians received any form of financial compensation for the extinguishment of native title, where it has been deemed to exist. Interestingly, the High Court upheld compensation for the cultural loss of land, not just the economic loss.

3.4 Other estimates of the size of the Australian Indigenous business sector

The calculation of the number of Indigenous Australian owner-managers in this paper is a conservative estimate based on information from

the census and the ACLD about the number of Indigenous businesspeople. It offers a proxy for the number of Indigenous businesses, if such a comparison is indeed meaningful. We note other unpublished estimates from Professor Dennis Foley (University of Canberra), who estimated that there were at least 25 000 Indigenous businesses in Australia between 2010 and 2012. The research was based on consultation with leading Indigenous thinkers in the field, including Esme Monaghan (former Chief Executive Officer of the Koori Business Network), Neil Willmetts (former Chief Executive Officer of the Indigenous Business Network), and researchers at the Australian Taxation Office and the NSW Indigenous Chamber of Commerce. The research used various databases to manually count the number of registered Indigenous businesses. Any estimates that use multiple sources for their data must ensure that the databases do not overlap (to minimise the likelihood of double-counting enterprises) and that they are operating during the same period. Further, the estimate may be inflated by use of complex corporate structures that include multiple Australian Business Numbers under the same business.

In addition, PwC Indigenous Consulting and PricewaterhouseCoopers (2018) – referred to as PwC – presented estimates of 8600–11 900 Indigenous businesses (including self-employed individuals, enterprises and trusts) in 2016. The higher estimate (11 900) is based on 2016 Census counts of the number of self-employed people and owner–managers of enterprises identified in the census, and 400 Indigenous trusts identified in reports of the Office of the Registrar of Indigenous Corporations. The lower estimate (8600) uses Supply Nation’s Indigenous Business Direct directory to calculate the number of Indigenous enterprises with employees (i.e. not the self-employed). Note that Supply Nation does not yet have a comprehensive register of Indigenous businesses: it currently has around 1800 verified Indigenous businesses on its register, and had only around 1000 businesses at the time PwC developed its estimate. Based on PwC’s methodology, a degree of double counting is likely that is difficult to overcome. Finally, the PwC estimate does not account for the growing propensity of individuals to switch to ‘Indigenous’ between censuses. Although this paper measures the number of Indigenous owner–managers, whereas the PwC focus was on the number of Indigenous business entities, the methodology adopted in our paper provides a more complete means to measure the Indigenous business sector’s footprint compared with the conservative estimates from PwC.

4 Methods and results

Calculating the number of Indigenous owner-managers is difficult. The census reports a headline figure of 11 592 for the number of Indigenous Australians who were also owner-managers in 2016. However, the headline figure presents only a partial picture of the full size of the Indigenous business population. Using its Post Enumeration Survey, the ABS reports the best estimate of the Indigenous population, which is the estimated resident population (ERP) of Indigenous Australians. The 2016 Census undercount of Indigenous Australians as measured through the ERP was around 19%. Thanks to the ACLD, we are also aware that increasing numbers of Australians are identifying as Indigenous in the census, having previously not identified as Indigenous. Here, we make appropriate adjustments to the headline figure of 11 592 to provide a more complete picture of the rate of Indigenous business ownership. The result is a more accurate estimate of the total number of Indigenous owner-managers in Australia.

4.1 Data sources and key symbols

Data sources are:

- 2016 Census of Population and Housing
- 2006–2011–2016 ACLD (2006–16 ACLD)
- 2016 ERP.

Key symbols used are as follows:

- ρ_t is an unknown population parameter that denotes the true Indigenous residential population aged 15+ in year t .
- β_t is an unknown population parameter that denotes the true rate of Indigenous business ownership as a share of the 15+ population in year t .
- P_t is the Indigenous census population count of people aged 15+ in year t .

- U_t is the Indigenous estimated population undercount of people aged 15+ in year t .
- $E(\rho_t)$ is the Indigenous ERP aged 15+ in year t .
- $E(\beta_t)$ is the ACLD-adjusted census rate of Indigenous business ownership as a share of the Indigenous 15+ population.
- OM_t is the census count of identified Indigenous owner-managers; $OM_{16} = 11\,592$.
- u_{OM} is the net rate of newly identified Indigenous status for owner-managers as measured between the 2006 and 2016 censuses.
- u_p is the net rate of newly identified Indigenous status for people aged 15+ as measured between the 2006 and 2016 censuses.

4.2 Key equations

1. $\rho_t \times \beta_t =$ true number of Indigenous owner-managers in year t .

$$\rho_t \times \beta_t \approx E(\rho_t) \times E(\beta_t)$$

where

2. $E(\rho_t) = P_t + U_t$

and

$$P_{16} + U_{16} = 428\,772 + 95\,260 = 524\,032$$

Equation 2 shows that the ERP of Indigenous Australians aged 15+ was 524 032 in 2016. This is an uncontroversial result but necessary for estimating the size of the Indigenous working-age population, a key component in calculating the rate of Indigenous business ownership.

3. $E(\beta_t) = \frac{OM_t(1+u_{OM})}{P_t(1+u_p)}$

Equation 3 determines the rate of Indigenous business ownership as a share of the 15+ population, adjusting for the rate of

underreporting of Indigenous status by Indigenous people. Equation 3 is expressed as a share of the total Indigenous 15+ population as counted in the census.

4.3 Net propensity to identify as Indigenous for businesspeople and the general population

One of the key components required in calculating the number of Indigenous owner-managers is the number of Indigenous Australians who did not previously identify as Indigenous in a previous census, but do so in future censuses. For instance, Markham and Biddle (2018) used the ACLD to show that the net increase of 128 500 people (19%) in the Indigenous population between 2011 and 2016 is partly due to a net increase in the number of people identifying as being of Indigenous origin.

The latest ACLD takes approximately 5% sample of census records and links them across the 2006, 2011 and 2016 censuses. This is a new innovation that the ABS has added to its ACLD product range. Previously, the ABS only connected census records over two censuses, either 2006–11 or 2011–16. Matching census records over the three periods provides unparalleled insights into the situation of Australians. For the purposes of this research, the latest ACLD offers information about how people have changed their Indigenous status over the course of a decade.

Biddle and Markham (2018) made the case that Indigenous Australians have many good reasons for not disclosing their ancestry, not least of which is Australia's history of discrimination against Indigenous people. They argued that the 'decision to identify as being of Indigenous origin (or not) in a census should not in any way be interpreted as a reflection on someone's Indigenous identity, which is quite a separate matter from what box gets ticked on a census form'.

Evidence provided by Foley (2003) indicates that Indigenous owner-managers have particular cause not to reveal their Indigenous status. The added sensitivity for Indigenous business

owner-managers relates to the consequences of prejudice and racial discrimination that can occur from suppliers, customers and lenders. Any one of these elements can cripple a productive enterprise's prospects for success. Foley (2000) documented the experiences of a number of Indigenous owner-managers who had previously faced significant hurdles; in some cases, they had to fold their business once their Indigenous identity was revealed to the non-Indigenous business fraternity and clients.

u_{OM} and u_P (Table 1) are fixed population parameters that best estimate those Indigenous businesspeople and Indigenous Australians aged 15 years and over, respectively, who do not identify as Indigenous initially, but do identify as Indigenous a decade (two censuses) later. We use the ACLD to estimate u_{OM} and u_P . Unlike Shirodkar et al. (2018), who used ACLD estimates from 2011–16 only, this paper uses ACLD estimates for u_{OM} and u_P over the 10-year period 2006–16. Note that the ACLD has a different set of base and future years from the census, leading to a slight difference in population estimates between the census and the ACLD.

Figure 4 provides some insights into why we have adjusted the methodology. It shows a net increase of 2000 in the Indigenous business population because of identification change (i.e. businesspeople who identified as Indigenous minus those who stopped identifying as Indigenous) between 2006 and 2011. But an additional net 2500 businesspeople from the 2006 Census subsequently switched to identifying as Indigenous by the 2016 Census.

Two matters arise because of this phenomenon:

- Merely relying on the change in identification over one intercensal period provides a significant underestimate of the true number of Indigenous businesspeople in previous years. We must therefore make an adjustment to the base year to account for this change in status.
- To ensure that estimates are structurally consistent, we must make a similar accommodation for the numbers of businesspeople who will likely identify as Indigenous in subsequent censuses (i.e. in 2021 and 2026), but did not identify as Indigenous in the 2016 Census.

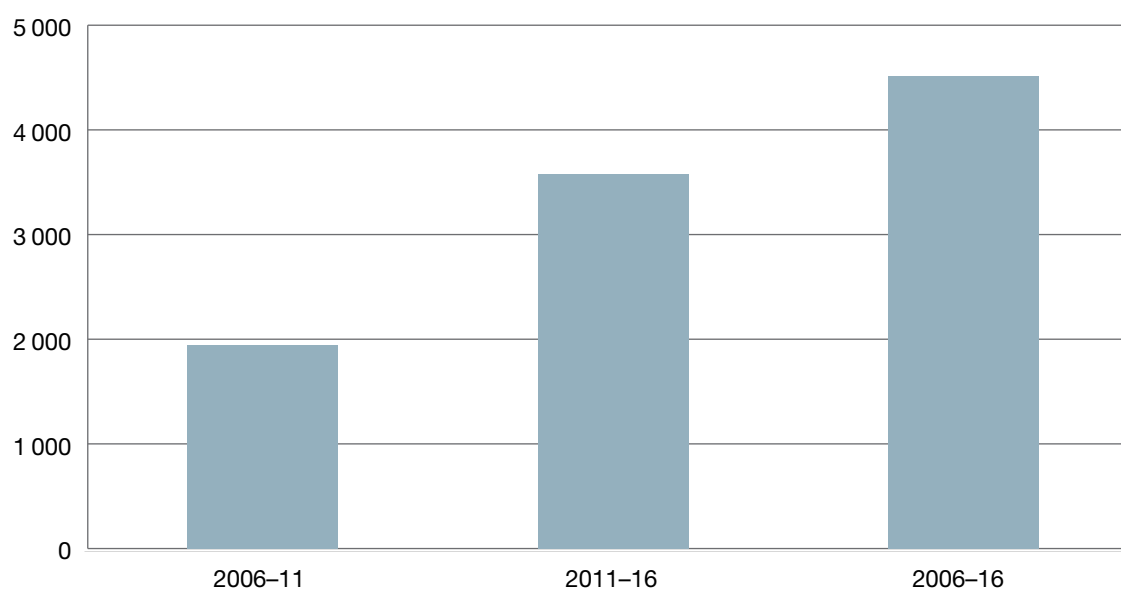
Table 1 Change in Indigenous identification between base year (2006) and later year (2016) in the ACLD

Status	Number or percentage
Indigenous general population (15+)	
Changed to Indigenous in 2016	87 100 ^a
Changed from Indigenous in 2016	41 435
Net change	45 666
Indigenous population that self-identified in 2006	320 637
% of Indigenous population that did not identify in 2006	14.2% (u_{OM})
Indigenous business population	
Changed to Indigenous in 2016	5 962 ^a
Changed from Indigenous in 2016	1 452
Net change	4 510
Indigenous population that self-identified in 2006	8 028
% of Indigenous population that did not identify in 2006	56.2% (u_p)

ACLD = Australian Census Longitudinal Dataset

a Components may not sum to totals because of rounding.

Figure 4 Net change in Indigenous identification for businesspeople in 2006–11, 2011–16 and 2006–16 ACLDs



ACLD = Australian Census Longitudinal Dataset

Source: 2006–11 and 2006–16 ACLDs

Figure 4 also highlights that the net number of businesspeople switching to Indigenous status has increased over the past two intercensal periods.

Both u_{OM} and u_P are required to estimate the rate of Indigenous business ownership (i.e. equation 3, which produces $E(\beta_t)$, the ACLD-adjusted census-based rate of Indigenous business ownership). Given that we currently have only one set of observations for u_{OM} and u_P over a decade, we have applied the estimates as fixed population parameters to help determine the rate of business ownership in 2006, 2011 and 2016.

4.4 Interpretation of $E(\beta_t)$

The way to interpret $E(\beta_t)$ is as follows. If we assume that Indigenous Australians do not shift their Indigenous identity status in the census over the decade, both u_{OM} and u_P are equal to 0.

In such a situation, equation 3 collapses to:

$$\begin{aligned} \frac{OM_t \cdot (1 + u_{OM_t})}{P_t \cdot (1 + u_{P_t})} &= \frac{OM_t(1+0)}{P_t(1+0)} \\ &= \frac{OM_t}{P_t} = E_0(\beta_t), \end{aligned}$$

which is just the unadjusted census-reported rate of Indigenous business ownership: $E_0(\beta_t)$. This rate can be calculated using the ABS TableBuilder function.

If the net rate of switching to Indigenous for owner-managers (u_{OM}) is greater than the net rate of switching to Indigenous for the general 15+ Indigenous population (u_P), and both values are positive, then $E(\beta_t)$ is greater than $E_0(\beta_t)$, all other things being equal. It can be represented in the following way:

if $u_{OM} > u_P$, then, because

$$E(\beta_t) = \frac{OM_t \cdot (1 + u_{OM})}{P_t \cdot (1 + u_P)},$$

therefore, $E(\beta_t) > E_0(\beta_t)$.

Using the latest release of the ACLD (2006–16), we estimate the following: $u_{OM} = 56.2\%$ and $u_P = 14.2\%$ (Table 1). Clearly, $u_{OM} > u_P$. This means that the net rate of switching to Indigenous

between the 2006 and 2016 censuses was substantially higher for Indigenous owner-managers than for the general Indigenous 15+ population.

Because $u_{OM} > u_P$, it follows that:

$$E(\beta_{16}) = \frac{OM_{16}(1 + 56.2\%)}{P_{16}(1 + 14.2\%)},$$

Therefore, $E(\beta_{16}) > E_0(\beta_{16})$.

This means that, other things being equal, the estimated rate of Indigenous business ownership in 2016, $E(\beta_{16})$, is higher than the estimate obtained using only the static 2016 data from TableBuilder – that is, $E_0(\beta_{16})$, which does not incorporate the added information about identification changes that the ACLD provides.

Given that only one observation covering identification change over a decade exists, we did not attempt to predict the rate of ‘new’ Indigenous identification over future years. Rather, we have assumed that fixed (time-invariant) population parameters apply for the likelihood of people changing their identification status to Indigenous in future censuses (i.e. $u_{OM} = 56.2\%$ and $u_P = 14.2\%$). This is a testable assumption, which we can verify and/or re-estimate following the release of the ACLD for 2011–21 and 2016–26.

The assumptions behind the bold values in Table 1 are largely conservative. If general trends continue, the proportion of Australians who identify as Indigenous could further increase in subsequent censuses. With that rise could come a proportionate rise in the share of Indigenous owner-managers, many of whom do not currently identify as Indigenous, assuming that the propensities to identify as Indigenous among Indigenous owner-managers and Indigenous 15+ are positively correlated. Any proportionate rise in the sensitivities will result in an increase in the rate of Indigenous business ownership, $E(\beta_{16})$. This trend cannot continue indefinitely, and a point in the future should arise when Indigenous Australians do not feel the burdens of discrimination as strongly as many currently do. At such a time, the propensity to reveal Indigenous status will become insensitive to any racial prejudice that still exists.

4.5 Number of Indigenous owner–managers

We can now calculate the census-based rate of Indigenous business ownership:

$$\begin{aligned} E(\beta_{16}) &= \frac{OM_{16} \cdot (1 + u_{OM})}{(P_{16} \cdot [1 + u_P])} \\ &= \frac{11\,592 (1 + 0.562)}{428\,772 (1 + 0.142)} \\ &= 3.7\%. \end{aligned}$$

Using this result, we can estimate the total number of Indigenous owner–managers in Australia as:

$$\begin{aligned} \rho_{16} \times \beta_{16} &\approx E(\rho_{16}) \times E(\beta_{16}) = \\ 524\,032 \times 3.7\% &\approx 19\,400. \end{aligned}$$

The ACLD is a sample and hence is measured with some error (even though it uses a relatively large sample of the population). Accordingly, the calculations are based on census counts of whole populations measured in people and estimated parameters measured to one significant digit. This paper therefore measures expected values of parameters as percentages to one significant digit. Further, the estimated count of Indigenous owner–managers is rounded to the nearest hundred to avoid reporting results at a spurious level of accuracy.

4.6 Summary of results

Using this method, we estimate that there were around 19 400 Indigenous owner–managers operating in 2016. This is about 1500 more than reported by Shirodkar et al. (2018), reflecting the addition of new information from the three-wave 2006–16 ACLD.

Applying the new method for the previous two censuses, we estimate that approximately 14 900 Indigenous owner–managers operated in 2011, and this number grew by 30% between 2011 and 2016. We estimate that around 10 500 Indigenous owner–managers operated in 2006.



5 Policy implications

The ABS's recent innovations in linking censuses over a decade provide significant insights about the increasing willingness of Australians to identify as Indigenous. The new information shows that far more people, in net terms, reveal an Indigenous identity if observed over a 10-year period (i.e. over three consecutive censuses) than over a 5-year period (over two censuses). The observations suggest an increasing propensity of Australians to identify as Indigenous. It is heartening to think that more Indigenous Australians are comfortable with publicly acknowledging their heritage. This implies that Indigenous communities are gaining greater confidence in their identity, despite evidence suggesting that levels of implicit bias in Australia have not decreased during the past decade (Shirodkar 2019).

We have used information about the phenomenon to produce new estimates of the size of the Indigenous business sector in Australia for 2016, 2011 and 2006. We estimate that around 19 400 Indigenous Australians were business owner-managers in 2016. The number almost doubled during the decade between 2006 and 2016. The result is higher than previously reported in Shirodkar et al. (2018), reflecting the additional information provided in the three-wave version of the ABS's ACLD, linking the 2006, 2011 and 2016 censuses. We also estimate that the rate of Indigenous business ownership grew from 3.3% in 2006 to 3.7% in 2016. This occurred at a time when the non-Indigenous rate decreased, reflecting the ongoing consolidation of the Australian economy since the global financial crisis.

The significant growth is indication that more Indigenous Australians are finding pathways into business. The result is at odds with views that Indigenous marginalisation partly reflects a divergence between Indigenous cultural factors and mainstream Australia's capitalist values (Altman 2001, Daly 1993). Indeed, Foley (2012) suggests that a tradition of Indigenous enterprise extends back almost 8000 years – for example,

from evidence of a large-scale eel smoking industry over an area in New South Wales almost the size of western Europe.

Despite this recent surge in growth, the rate of Indigenous business ownership is significantly lower than the corresponding rate for non-Indigenous Australians and for Indigenous communities in other anglophone countries. It reveals that more is required in our society to support Indigenous Australians to enter business. An approach should include improving access to markets, which the Australian Government is supporting through the introduction of the Indigenous Procurement Policy (IPP) and has historically tried to support through Indigenous Business Australia.

The current relatively low rate of Indigenous business ownership suggests that there are structural social and economic barriers that limit the proportion of Indigenous Australians entering business. Indeed, econometric analysis by Shirodkar and Hunter (2019) shows that, holding various socioeconomic factors constant, more than half the difference in rates of business ownership is explained through Indigenous identification. More work is required to encourage and empower greater numbers of Indigenous Australians to access business opportunities. Evidence from Shirodkar (2019) provides the first insights into the extent of implicit biases against Indigenous Australians within Australian society. The paper reports that Australian participants, on average, had an implicit or unconscious bias against Indigenous Australians. Implicit bias is the root cause of racism and discrimination. Discrimination and the societal harm that results can potentially have a real impact on economic participation and socioeconomic status. Societies as a whole need to address the causes of such biases. But government can lead the way. Initiatives such as the Australian Government's IPP are raising the public's awareness of the capabilities of the Indigenous business sector and improving opinions about Indigenous

Australians more generally. The National Indigenous Australians Agency reports that, as of 12 September 2019, the IPP has resulted in Indigenous businesses winning \$2.7 billion in Australian Government contracts since the policy's inception in 2015–16, compared with around \$6.2 million as recently as 2012–13. The success of the policy is showing that Australia is leading the way; Canadian First Nations and Maori in Aotearoa/New Zealand are pushing for similar arrangements in their jurisdictions.

The economic collapse that Australia and the world face as a result of the COVID-19 global pandemic is hitting all businesses hard, and Indigenous businesses are not immune. It remains to be seen whether quarantine measures will have a proportionate, disproportionate or milder impact on Indigenous businesses compared with the rest of the economy. Shirodkar et al. (2018) showed that Indigenous businesses are largely proportionately represented in the same industries as non-Indigenous businesses, except in construction, where they are overrepresented. If government contracts to Indigenous businesses and overall construction activity are largely unimpeded during the quarantine period, Indigenous businesses might, in aggregate, experience a milder downturn than the rest of the economy. But if this pandemic brings to the fore societal biases and irrational behaviours, those considered as 'outsiders' to the mainstream economy may bear a larger impact than most – in business and in employment. Indigenous people are overrepresented in casual and part-time employment (Hunter & Grey 2017), and therefore particularly exposed. If such a scenario were to result in a prolonged period of crisis, the Indigenous economic advancement experienced over the past few years since the introduction of the IPP may partially unravel.

Ensuring the ongoing success of the Indigenous business sector will not only support existing Indigenous business owners but will have flow-on benefits for Indigenous employment and for the Australian economy more generally (Hunter 2014). As a result, it is imperative that governments continue to commit to 'outside the box' approaches such as the IPP in this important domain of public policy.

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