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ORIGINAL ARTICLE

Closing the employment gap: Estimations of Indigenous employment in Indigenous- and non-Indigenous-owned businesses in Australia

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Abstract

Indigenous-owned businesses in Australia are strong employers of Indigenous people, maintaining rates of Indigenous employment that are not seen across the breadth of the Australian economy. Despite an increasing focus from governments and private organisations to improve rates of Indigenous employment, there is limited evidence to suggest that substantial improvements are being made. Despite acknowledgement from government of the crucial role played by Indigenous employers in creating Indigenous employment, there has been little focus on what may be learned from the Indigenous business sector in informing public and private Indigenous workplace and recruitment policies. Given the significantly strong levels of Indigenous employment in Indigenous-owned businesses, it is important to interrogate the extent to which this employment differs from that in non-Indigenous businesses and the potential explanations for such divergence. Using data from Supply Nation (2,291 Indigenous-owned businesses) and a survey of 680 non-Indigenous businesses, this paper finds that Indigenous businesses employ Indigenous people at a rate 12 times higher than non-Indigenous businesses. Regression analyses and Oaxaca–Blinder decompositions reveal that these divergent employment outcomes cannot be explained by the broad characteristics of the two sectors (such as industry, location, or profit status). These findings help confirm that the unique workplace practices of Indigenous businesses may explain their strong Indigenous employment and, therefore, provide the template for all Australian businesses to be better employers of Indigenous people.

Keywords: discrimination; employment conditions; Indigenous business; Indigenous employment; industrial/employment relations policy; racism; social inequality

Introduction

Indigenous businesses in Australia create many positive socio-economic and socio-cultural outcomes for Indigenous peoples. This includes the capacity to support economic self-determination (Foley 2003; Shirodkar and Hunter 2021), the opportunity to utilise Indigenous knowledge within the workplace (Bodle et al 2018), the creation of culturally safe workplaces (Jones 2023; Eva et al 2024), and a commitment to social impact initiatives (Eva et al 2023a). Thus, it may be unsurprising that the employment rates between

Indigenous- and non-Indigenous-owned businesses are vastly different (Hunter 2015), given that Indigenous businesses demonstrate a commitment to creating strong Indigenous employment (Evans et al 2021). Consequently, of all those employed across the Indigenous business sector, 35% of these employees are Indigenous peoples (Eva et al 2023b), a rate that is almost ten times that of the proportional Indigenous population in Australia (i.e., 3.8%; ABS 2021a). This commitment is crucial, especially given that non-Indigenous businesses struggle to maintain Indigenous employment levels even at parity with the proportional Indigenous population rate (Minderoo Foundation et al 2022). The most recent estimate resident population data finds that the proportional Indigenous population is 3.8% (ABS 2021a), with the most recent Census data estimating the Indigenous employment rate within Australian businesses at 2.2% (ABS 2021b). This disparity is of national importance, particularly in light of Australia's Closing the Gap framework and the centrality ascribed to Indigenous employment. Yet, as with many Closing the Gap outcomes, the gap between Indigenous and non-Indigenous employment is failing to close (Monem and McDonald 2023).

Given the overall context of Indigenous employment in Australia, the positive outcomes of the Indigenous business sector sit as an outlier. As there is a substantial focus on Indigenous employment in both private and public policymaking, it is vitally important to understand how the Indigenous business sector differs in its capacity for creating substantially strong Indigenous employment so that this information could be used to strengthen Indigenous employment in all businesses. This research details similarities and divergences in the rates of Indigenous employment within a sample of Indigenous-owned and non-Indigenous-owned businesses in Australia. It does so to determine whether the high rates of Indigenous employment within the Indigenous business sector can be explained by variances in observable characteristics such as profit status, location, business size, and industries compared to a sample of non-Indigenous businesses. By comparing Indigenous employment across the two sectors, this paper can demonstrate the rate of Indigenous employment that may be explained by factors unobserved in these two datasets, such as significant differences in workplace practices (Eva et al 2024). Whilst existing research has attempted to do this (Hunter 2015), an enhanced data environment and the growth of the Indigenous business sector in the intervening years merit updated and more rigorous analysis.

Literature review

Indigenous business in Australia

An Indigenous-owned business is currently defined as such, if the owning partnership company or trust is at least 50% owned by an Aboriginal and/or Torres Strait Islander person/s (NIAA 2018; Supply Nation 2020). However, there is some demand to increase this definition to at least 51% (Wahlquist 2021), representing a controlling stake in the business.[1] Supply Nation, Australia's largest registry of Indigenous-owned businesses, currently verifies and identifies equal partnerships and majority-owned businesses differently within their registry (Supply Nation 2023), with the vast majority of Supply Nation businesses being at least 51% Indigenous-owned. Maintaining strict verifications is important to ensure that any market advantage with identifying as an Indigenous business is protected and prevents against the threat of 'black cladding' (Janke and Sentina 2018).

Substantial literature details the characteristics of Indigenous entrepreneurship in Australia, with these characteristics influencing Indigenous employment. The act of entrepreneurship can be defined as 'identifying and acting on opportunities to create value (economic and noneconomic) by starting and growing enterprises' (Mika 2020,6). What is key in this definition is what is meant by 'opportunities', and what is meant by 'value' in

the eyes of the individual entrepreneur. Dana (2015) notes that the identification of opportunity is culturally influenced in that 'different cultures have different goals and culturally specific needs.' Mika (2020) and (Bodle et al 2018) argue that Indigenous entrepreneurship differs from 'Western' definitions of entrepreneurship, where the acquisition of wealth is made in culturally appropriate ways, and with clear value propositions and embodying Indigenous ways of 'knowing, being, and doing'. This can be seen through those Indigenous businesses that maintain values-driven approaches to business and often operate as social enterprises (Seet et al 2021; First Australians Capital 2022). Evans and Williamson (2017) detail a tension that can arise for Indigenous entrepreneurs between individual and collective motivations whilst also detailing the broader context of the expectation placed upon Indigenous entrepreneurs by policy-makers to pursue collective good. This tension was further described by Eva et al (2023a), highlighting the circumstances of some Indigenous businesses that sacrifice business growth and personal wealth for pursuits in community investment, social impact, and Indigenous employment. Existing scholarship has demonstrated that a major motivating factor of Indigenous entrepreneurship is to create Indigenous employment and to facilitate the broader socio-economic effects that Indigenous employment can have (Foley 2000, 2003; Hindle and Moroz 2010; Collins and Norman 2018; Eva et al 2024).

Scholars have argued that the reason behind these community-based decisions comes not solely from cultural imperatives (Mika 2020; Evans and Williamson 2017) but also from a long history of Indigenous exclusion from the labour market and the welfare state (Altman 2000). Therefore, whilst it may be a characteristic of Indigenous entrepreneurs to support Indigenous employment within their businesses, this exists within broader political, cultural, and historical contexts. Leroy-Dyer (2021) provides a historical overview of Aboriginal and Torres Strait Islander involvement within the Australian labour market. This analysis details the long history of exclusion, dispossession, and exploitation regarding Indigenous resources and labour and, in so doing, debunks the continuing overtures of racist stereotypes regarding employment and Indigenous peoples. It is this deficit discourse that prevails through the over-emphasised focus on socio-demographic characteristics of the Indigenous population (such as education, health, and culture) and their interrelation with Indigenous employment outcomes (Forrest 2014), without capturing the breadth of broader interrelated factors (Klein 2014) nor their root causes (Leroy-Dyer 2021). As such, the prevailing narrative around Indigenous employment is one of deficit. In this context, Indigenous businesses may prioritise creating and supporting Indigenous employment (Eva et al 2024) above other imperatives. There are indeed several barriers that impact Indigenous employment more acutely than that of the broader population. Such obstacles include lower levels of education, higher rates of incarceration and interactions with the criminal justice system, poorer health outcomes, and poorer access to a local labour market for those living in more remote areas (Shepherd et al 2020; Gray et al 2012; Savvas et al 2011), many of which are targets within the Closing the Gap framework, highlighting the interacting nature of these structural disadvantages (Commonwealth of Australia 2022). It should be noted, however, that these barriers are not a consequence of Indigeneity but a plethora of social problems that are associated with Australia's policy history and its interactions with the Indigenous population (see e.g., Altman 2000; Kidd 2007; Moreton-Robinson 2015; Miley and Read 2018).

Indigenous employment

The most recent estimate from the 2021 Census of the national rate of Indigenous employment was 51%, with the figure for the rest of the population at 74%, despite the government's target to raise the Indigenous employment rate to 60% by 2018 (Monem and McDonald 2023). There has been an increased focus on improving Indigenous employment

outcomes, with governments at the federal (NIAA 2020) and state (e.g., First Peoples State Relations and Victorian State Government 2023) levels implementing various policies aimed at boosting Indigenous employment. Such policies include employment subsidisation, grants, training, and targets. Similar focuses are also being implemented at the organisational level, with the number of businesses developing Reconciliation Action Plans (RAPs) increasing (Reconciliation Australia 2022), with RAPs intending to incorporate practical actions towards reconciliation (Reconciliation Australia 2021). RAPs maintain diverse focuses depending on the context of individual businesses, but often, these focuses include actions to support Indigenous recruitment, employment, and retention (e.g., Australian National University 2021).

Despite the enhanced focus on Indigenous employment, the national Indigenous employment rate is failing to increase substantially (Monem and McDonald 2023), and many Australian businesses are still struggling to reach their Indigenous employment targets (Minderoo Foundation et al 2022). Multiple recent surveys of Indigenous people within the Australian labour market have returned similar findings that over 50% of respondents cite recent direct or indirect incidences of racism in the workplace (Brown et al 2020; Minderoo Foundation et al 2022; Polity Research and Consulting 2022). Such reported instances of racism and poor follow-up responses by organisations have been cited as one of many reasons driving Indigenous people from the workforce (i.e., retention) and preventing Indigenous people from entering the workforce (Biddle and Lahn 2016; Brown et al 2020). Unsurprisingly, when businesses have racism compliance procedures and anti-discrimination training, these result in better employment outcomes for Indigenous employees (Brown et al 2020). However, only a fifth of Brown et al's (2020) survey respondents worked in businesses with these procedures and training.

Supporting Indigenous employees at work

Given the numerous factors that influence Indigenous employment, creating employment opportunities can come at a greater investment for individual businesses. Yet, the willingness to invest in such measures varies across businesses. Studies by Evans and Williamson (2017) and Eva et al (2024) have found that Indigenous entrepreneurs generally make this investment, often at the expense of re-investing in other parts of the business (Eva et al 2023a). In comparison to non-Indigenous businesses, when working in an Indigenous business, Indigenous employees have noted the stark differences in values, culture, experiences of racism, and the evaluation of Indigenous knowledge and cultures within the business (Eva et al 2023a, 2024). Foley (2006) argues that a trait among Indigenous entrepreneurs is not just supporting their immediate families but also broader kinship ties, which may translate into creating employment opportunities.

While important, these qualitative studies provide limited insight into the drivers of Indigenous employment, specifically the characteristics of the businesses that successfully support Indigenous employees to thrive at work. Indigenous-owned businesses may have unique factors that influence Indigenous employment outcomes beyond specific workplace policies and practices. For example, Indigenous employees may have a comparative advantage in working within Indigenous businesses that require specific Indigenous knowledges (Blackwell et al 2019), such as in areas of traditional resource management (Zander et al 2014). This therefore could translate to divergences in Indigenous employment via the industry of businesses. There may also be moderation regarding the profit status of Indigenous and non-Indigenous businesses, with Indigenous-owned not-for-profits likely to serve Indigenous community-specific purposes, and thus may require (or attract) higher numbers of Indigenous employees. The size of businesses may also moderate rates of Indigenous employment; in the case of larger Indigenous businesses, this relates to a limitation in the supply of Indigenous people in the labour market (Eva et al

2023b). Larger non-Indigenous businesses may have the financial capacity to implement policies targeting Indigenous employees (Minderoo Foundation et al 2022). Conversely, where larger businesses may have more specialisation and skill specificity, and as such, it may be hard to get a good match for the skill set of available Indigenous workers. Hunter and Gray (2017) argue that Indigenous peoples have been systematically excluded from the labour market and have limited experience in jobs with specific skill and educational requirements; not surprisingly then, Indigenous people may be more likely to experience labour market mismatch than non-Indigenous people (Duncan and Hoffman 1981; McGuinness et al 2018). Finally, local labour market conditions may also influence Indigenous employment, as the Indigenous population rate differs across different regions in Australia (Evans et al 2021). In some remote locations, this means that the local population maintains a higher proportion of Indigenous people.[2] This may result in greater access to an Indigenous labour market compared to areas where this is not the case, and as such may mean remote businesses have a higher proportion of Indigenous people within their workforce.

Hunter (2015) was able to undertake a similar analysis to what is presented in this paper, in making comparisons of Indigenous employment between Indigenous-owned and other businesses listed within the Industry Capability Network (ICN). This analysis was based on data from 2013, and in the intervening decade, a significant amount of growth has been seen within the Indigenous business sector (Evans et al 2021). Hunter's analysis relied on a nascent dataset with only 183 Indigenous businesses and far fewer variables available for multivariable analysis. The ICN dataset also consists of primarily Queensland-based businesses. Most importantly, Hunter (2015) could not control for sole traders, who in the case of Indigenous-owned businesses maintain 100% proportional Indigenous employment rates. In comparing Indigenous employment rates, it is important to exclude sole traders as they are not employing a workforce. Therefore, the analysis in this paper can use updated and timely data, undertake multivariate approaches to the analysis given the enhanced access to additional variables, have nationwide datasets, and make more appropriate comparisons in Indigenous employment.

Theoretical development

The study presented in this paper forms part of a larger research project that creates a detailed articulation of Indigenous employment within Indigenous and non-Indigenous businesses in Australia. This is motivated by the existing research environment which demonstrates that Indigenous businesses better support Indigenous employment outcomes (Hunter 2015; Eva et al 2023b) in the broader context of the Australian economy. This is especially important, given that not only are Indigenous unemployment rates comparatively high (Monem and McDonald 2023) but also where non-Indigenous businesses are struggling to support Indigenous employees in the workplace (Brown et al 2020; Minderoo Foundation et al 2022; Polity Research and Consulting 2022). Despite this articulation of Indigenous employment rates and workplace practices of non-Indigenous businesses, there has not been sufficient exploration of exactly how Indigenous-owned businesses create their substantially high Indigenous employment outcomes and subsequently how understanding this might better inform government and private-level policymaking regarding Indigenous employment.

The 'Making Indigenous Friendly Businesses' research project first articulated the rates of Indigenous employment across the Indigenous business sector (Eva et al 2023b). It subsequently undertook qualitative interviews with representatives of the Indigenous business sector to develop a theoretical explanation as to how Indigenous businesses create their substantially strong rates of Indigenous employment (Eva et al 2023a, 2024).

Finally, this information is compared to a similar sample of non-Indigenous owned businesses in order to investigate and articulate potential divergence in rates of Indigenous employment and Indigenous-focused workplace practices. In doing so, the project undertakes a constructivist grounded theory approach (Charmaz 2017). It does so not only to provide a descriptive account of Indigenous employment but also to develop a detailed theoretical explanation as to how Indigenous-owned businesses create their strong rates of Indigenous employment, how and why this differs to non-Indigenous businesses, and subsequently build a more detailed understanding of how public and private policymakers might respond.

Research questions

Four research questions are derived from the existing research, provided below:

1. What is the overall Indigenous employment rate in a sample of non-Indigenous-owned Australian businesses, and how does this compare to Indigenous-owned businesses?
2. How do rates of Indigenous employment differ between Indigenous and non-Indigenous businesses, conditioned on explanatory factors such as location, industry, and profit status?
3. What factors are correlated with higher rates of Indigenous employment, and what does this tell us about potential drivers of Indigenous employment?
4. How much of the divergence in Indigenous employment rates between Indigenous and non-Indigenous businesses can be explained by these observable characteristics, and what is left unanswered?

Method

Participants and procedure

This article uses two datasets for its analysis. The first is administrative data provided in December 2021 by Australia's largest registry of Indigenous-owned businesses, Supply Nation, encompassing 2,291 unique businesses. This sample excludes Supply Nation listed businesses with 1 or 0 employees as these are likely to include a large number of sole traders. As this study investigates employment, sole traders are not the target sample. Supply Nation is not a registry of all Indigenous-owned businesses across Australia, with research from Evans et al (2021) and Shirodkar et al (2020) showing that Indigenous business registries like Supply Nation likely maintain an underrepresentation of the actual size of the Indigenous business sector. Businesses list themselves voluntarily on Supply Nation, meaning that the decision to be listed (or not listed) on Supply Nation may influence the sample. Whilst it is possible to identify a larger number of Indigenous businesses through Census information (Shirodkar et al 2020) or through Australian Bureau of Statistics (ABS) datasets (Evans et al 2021), Supply Nation provides detailed metrics on Indigenous employment, geography, industry, and the like that the ABS datasets cannot provide. Moreover, whilst Supply Nation is not a register of all Indigenous-owned businesses, the best estimation of the true number of Indigenous-owned businesses is provided by Evans et al (2024) who identify 13,693 unique and active Indigenous-owned businesses. However, over 8,700 of these businesses are classified as sole traders or partnerships, which would likely exclude them from analysis regarding employment should they have no employees. Therefore, for this analysis, Supply Nation data is likely to be the most representative dataset for analysis of Indigenous employment in the Indigenous business sector.

Table 1. Description of datasets

	Survey data	Supply Nation data
Type of dataset	Survey	Administrative
Type of business	Non-Indigenous owned	Indigenous-owned
No. businesses	680	2,291
Mean no. employees	221.7	16.0
Mean no. Indigenous employees	6.3	5.5
Mean proportion of Indigenous employment (%)	5.2%	55.6%
Data on industry type	Yes	Yes
Data on geography (metropolitan, remote, etc.)	Yes	Yes
Data on geography (state level)	Yes	Yes
% of sample that is for-profit	90%	93%

The second dataset is from a primary survey of non-Indigenous-owned businesses in Australia. The survey was designed to directly compare this data to the Supply Nation data by capturing many of the same variables (e.g., employee numbers, industry, geography, and profit status). The survey was distributed through the Qualtrics Research Platform to three of their research panels in 2023. The respondents targeted in the sampling strategy were the cohort 'business-owners, directors, and senior decision-makers' in Australia, as they were most likely to have access to and knowledge of the information required about their business for this study. Parameters were set for survey respondents to ensure that the data reflected the needs of this research. First, respondents were screened out if their business was Indigenous-owned or if they had fewer than two employees to ensure a comparable non-Indigenous dataset to that of Supply Nation. Second, we required a balanced sample of businesses with 2–19 and 20 or more employees. This is because Indigenous-owned businesses of different sizes maintain different distributions of Indigenous employment (Eva et al 2023b) and Indigenous-owned businesses with fewer than two employees maintain an almost 100% rate of Indigenous employment, as this cohort primarily consists of sole traders. The vast majority of Australian businesses have fewer than 20 employees; however, to facilitate a reliable comparison of descriptive statistics and multivariate analyses that are based on the size of the business, equal representation of the two cohorts was sought. Moreover, it may be the case that larger businesses may have a better financial capacity to access workplace policies that differ from smaller businesses. This deliberate sampling strategy explains the divergence in the mean number of employees in the two samples (16 v 222, see Table 1). Third, responses that were flagged by the Qualtrics system as having poor data quality were removed. Fifteen-hundred respondents completed (or partially completed) the survey, with the parameters above reducing the final sample to 680 completed responses. Respondents were notified that the survey was about workplace policy, and thus did not prime respondents that the survey was specifically about Indigenous employment. This was undertaken to ensure that businesses undertook the survey, whether or not they had any Indigenous employees.

The original sample size sought was 500, as this was estimated as sufficient to make inferences about the population of Australian non-Indigenous-owned businesses (de Vaus 2013). However, Qualtrics provided a final sample of 680, enabling the researchers to use smaller standard errors in the confidence intervals than would have been the case with a

smaller sample size. The Business Longitudinal Analysis Data Environment (BLADE) from 2018 to 2019 (ABS 2020) can provide an estimate of the population of businesses. Excluding businesses with zero employees, this sets the population estimate at N = 717,396. Businesses with zero employees are excluded from the population estimate as the samples used in this analysis exclude businesses with 0 or 1 employee, with the BLADE data only able to be disaggregated to exclude businesses with zero employees and not single employee businesses. To collect a reliable sample to make inferences about this population, using a confidence interval of 99% (translating to a Z-score of 2.576), a margin of error +/− 5%, and a standard deviation of .5, the minimum sample required is N = 664, calculated via $(2.576^2 \times 0.5 \times (1 - 0.5))/0.05^2$, as per Smith (2023).

To check the applicability of the data collected in both samples, we compared the industry composition with that of all Australian businesses also using BLADE 2018–2019. Whilst some industries are over- or underrepresented within the sample in comparison to the overall population, Table A1 (see appendix) demonstrates that the sample is broadly comparable to the population in terms of industry. However, not-for-profits are overrepresented in our sample (4% of businesses in BLADE and 10.6% in the sample). This oversampling of not-for-profits was not intentional; however, this does create stronger confidence in the comparability of the findings relating to profit status between the two datasets. Indigenous-owned not-for-profit businesses maintain higher rates of Indigenous employment on average than Indigenous for-profits (Eva et al 2023b), so the oversampling of non-Indigenous owned not-for-profits affords the opportunity to determine whether this is similarly the case in non-Indigenous-owned businesses.

The parameters described in this section relating to the sample of non-Indigenous businesses were set to ensure that the survey could provide accurate and relevant information from the desired population of non-Indigenous-owned Australian businesses. Commissioning Qualtrics to deliver the survey enabled access to their research panels that are designed to be representative of the Australian population.

Measures

The data were analysed using STATA. To answer RQs 1 and 2, descriptive statistics are presented using both samples (Table 2 and Figures 1 and 2). To answer RQ 3 (Tables 3 and 4), an Ordinary Least Squares (OLS) regression is undertaken in the sample of Indigenous-owned businesses, whilst a Heckman selection model is undertaken in the sample of non-Indigenous businesses. This allows for comparative analysis to be undertaken between the two samples. The two models use the proportion of Indigenous employees within a given business as the dependent variable, which is calculated by: (number of Indigenous employees/by the total number of employees) × 100. The statistical model underlying OLS requires that the dependent variable is normally distributed, and as such this assumption is likely to be violated with the sample of non-Indigenous businesses, given the high number ($N = 373$) of businesses in the sample with zero Indigenous employees. To ensure that the analysis is not sensitive to the assumptions of OLS, we use another statistical model that accommodates the non-normality of Indigenous employment, the Heckman selection model (Heckman 1976; 1979). Moreover, the decomposition analysis (as described in the following section) can only be applied using a linear regression model (such as an OLS), or an OLS model that accounts for the selectivity of businesses that have no Indigenous employees (Heckman selection model). These analyses are undertaken to identify if business characteristics such as industry, profit status, location, and business size are significantly related to Indigenous employment. Sensitivity tests were undertaken by performing several additional analyses, including OLS, negative binomial, and zero-inflated negative binomial regressions on both samples, excluding businesses with 0 Indigenous employees from analyses, utilising a

different dependent variable (number of Indigenous employees as opposed to the proportion of Indigenous employees), and moderating the selection of independent variables. These estimations produce differing coefficient values but do not produce significant results. These sensitivity tests therefore help to strengthen the validity of the findings presented in this paper.

Finally, to answer RQ4 (Table 4), the coefficients drawn from the regressions are used in a Blinder–Oaxaca decomposition (Rahimi and Hashemi Nazari 2021) to estimate the difference in the mean value of the dependent variable (proportional Indigenous employment) between our samples of Indigenous- and non-Indigenous-owned businesses. As the samples of Indigenous and non-Indigenous businesses are not uniform in their characteristics (i.e., industry, business size, profit status, and location), a Blinder–Oaxaca decomposition allows us to evaluate what the rate of Indigenous employment would be in non-Indigenous-owned businesses, were they to have the same observable characteristics as the Indigenous business sample (Canedo 2019). This allows researchers to assess what percentage of the difference in rates of Indigenous employment between the samples can be explained by differences in observable characteristics within the datasets, and what might be explained by unobserved factors, such as workplace policies and practices (Blinder 1973; Oaxaca 1973; Rahimi and Hashemi Nazari 2021). In the specific context of our datasets, a Blinder–Oaxaca decomposition allows us to estimate how much of the difference in the mean proportional Indigenous employment rates across the two datasets can be explained by differences in their composition of industry, business size, profit status, and location. Where there is still a difference in the mean proportional Indigenous employment, this then may be explained by unobservable characteristics, such as differing workplace practices or characteristics between Indigenous and non-Indigenous businesses.

Business characteristics

The independent variables that are available in both datasets and reported on within this paper are as follows:

- Profit and not-for-profit status.
- Industry type as per Australian and New Zealand Standard Industrial Classification (e.g., construction, retail trade, mining, etc.)
- Business size (as measured by the number of employees)
- Geography: State-based (e.g., Victoria, Tasmania, Northern Territory, etc.)
- Geography: Australian Statistical Geography Standard (e.g., Major City, Inner Regional, Remote, etc.)

Ethics

Ethics approval was granted in December 2022 by the Australian National University's HREC. Participation in the survey was anonymous. The research project from which this survey and publication originated is funded by the National Indigenous Australians Agency and received stakeholder support from Supply Nation and Indigenous Business Australia. The authors of this article are a cross-institutional and cross-disciplinary team of Indigenous and non-Indigenous researchers, ranging from early career researchers to long-standing scholars in Indigenous business, labour economics, and Indigenous entrepreneurship research disciplines. Relevant processes and guidelines outlined by the National Health and Medical Research Council (2018a, 2018b) and AIATSIS (2020) regarding Indigenous research were followed.

Table 2. Employment in Indigenous and non-Indigenous businesses with two or more employees

		All businesses	2–19 employees (for-profits)	20+ employees (for-profits)	NFPs
No. of businesses	Indigenous-owned	2,291	1,852	238	197
	Non-Indigenous owned	680	333	275	72
No. of employees	Indigenous-owned	36,836	8,824	22,228	5744
	Non-Indigenous owned	150,790	2,062	120,815	27,913
No. Indigenous employees	Indigenous-owned	12,561	4,477	4,691	3,360
	Non-Indigenous owned	4,288	95	3,319	874
Total % of Indigenous employees	Indigenous-owned	34.1%	50.7%	21.1%	58.5%
	Non-Indigenous owned	2.8%	4.6%	2.7%	3.1%

This table uses data on Indigenous-owned businesses from Supply Nation, and data on non-Indigenous businesses from the survey.
Abbreviation: NFPs, not-for-profits.

Findings

RQ1:. *What is the overall Indigenous employment rate in a sample of non-Indigenous-owned Australian businesses, and how does this compare to Indigenous-owned businesses?*

The total number of Indigenous employees in non-Indigenous businesses was 2.8% of the total number of employees (N = 4,288), which is below the proportional Indigenous population of Australia (i.e., 3.8%; ABS 2021a). Thus, this study shows that compared to the non-Indigenous business, Supply Nation listed Indigenous-owned businesses (34.1%) employ Indigenous people at a 12 times higher rate. Using the most recent Census data, the Indigenous employment rate within Australian businesses is estimated at 2.2% (the same figure cited in Minderoo Foundation et al 2022), indicating the results in our study are likely an overestimate. This may be a sampling bias in that businesses in the sample have higher rates of Indigenous employment than the overall population, or respondents overestimating the number of Indigenous employees in their businesses. Per the National Aboriginal and Torres Strait Islander Health Survey 2018–19 (ABS 2018–19), 49.1% of Indigenous people of working age are employed. This context should be considered when interpreting Indigenous employment totals in non-Indigenous and Indigenous businesses.

RQ2:. *How do rates of Indigenous employment differ between Indigenous and non-Indigenous businesses, conditioned on explanatory factors such as location, industry, and profit status?*

Table 2 presents descriptive statistics of both datasets, conditioned on business size and profit status. Despite the sample of non-Indigenous businesses maintaining over four times the total number of employees than the sample of Indigenous-owned businesses, the Indigenous-owned businesses employ over three times as many Indigenous employees as the non-Indigenous-owned businesses. This demonstrates the significant capacity of the Indigenous business sector to maintain Indigenous employment.

For both the Indigenous and non-Indigenous samples, larger businesses have lower overall rates of Indigenous employment than smaller businesses. This likely reflects the

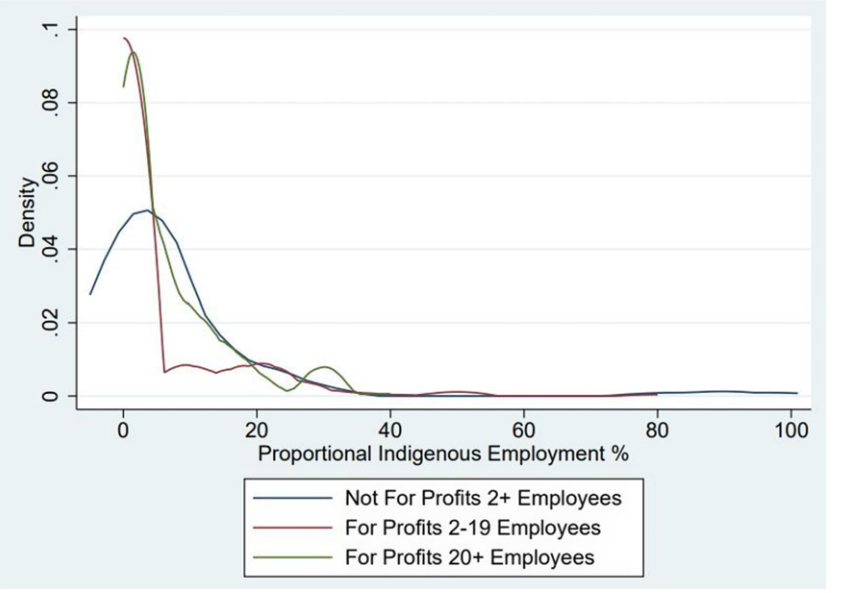

Figure 1. Distribution of proportional Indigenous employment (MIFB Survey). Density graph on the proportion of Indigenous employees (%), conditioned on business type.

limitations of the supply of Indigenous workers in the labour market. For example, businesses with 10 employees only need 1 Indigenous employee to maintain a 10% Indigenous employment rate. To meet that same rate, businesses with 1,000 employees would need 100 Indigenous employees.

Looking at all non-Indigenous businesses in the survey, a large majority of small businesses have 0 Indigenous employees (79%), compared to 26% of large businesses. Larger non-Indigenous businesses are more able to access workplace and employment policies that can enhance Indigenous employment outcomes, as demonstrated in The Woort Koorliny Report (Minderoo Foundation et al 2022). This is important, as where smaller Indigenous businesses may be more readily able to create workplace environments that support Indigenous employment, small non-Indigenous businesses are less likely to be able to provide such workplaces without direct access to relevant experience and expertise, or the capital to purchase access.

Figures 1 and 2 present kernel density graphs, which depict the proportional Indigenous employment rate conditioned on profit status and business size. They do so given the findings of Eva et al (2023b) that show Indigenous employment is functionally different across these cohorts. Figure 1 uses data from the sample of non-Indigenous businesses, and it shows that the proportions of Indigenous employment do not differ substantially across for-profit (2–19 employees, 20+ employees) and not-for-profit businesses. This is in contrast to the sample of Indigenous businesses in Figure 2, which shows these distributions look very different and indicate that Indigenous employment is influenced more acutely by business size and profit status within Indigenous-owned businesses than in non-Indigenous-owned businesses. Taken together, Table 3 and Figures 1 and 2 demonstrate that the processes that drive Indigenous employment are different within non-Indigenous businesses compared to Indigenous businesses.

RQ3:. *What factors are correlated with higher rates of Indigenous employment, and what does this tell us about potential drivers of Indigenous employment?*

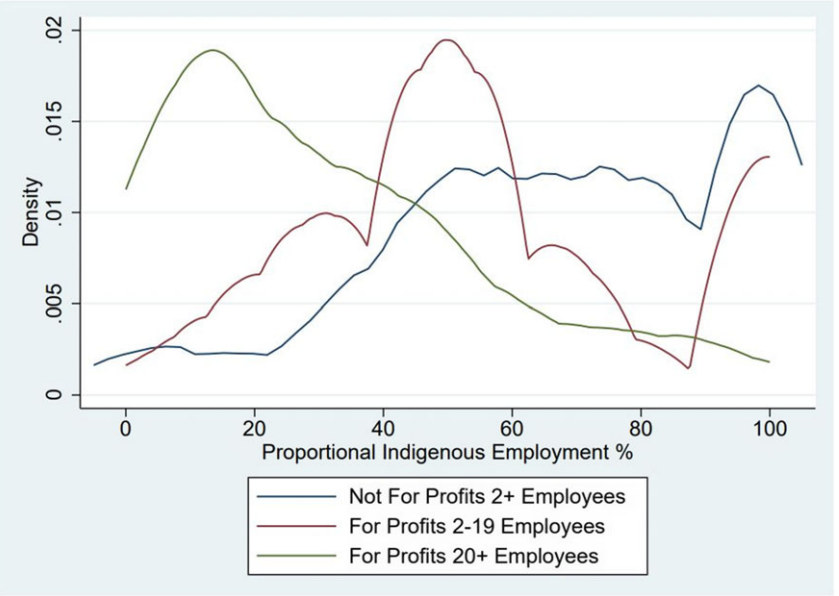

Figure 2. Distribution of proportional Indigenous employment (Supply Nation). Figure 2 from Eva et al (2023b). Density graph of proportional Indigenous employment conditioned on business type.

Regression analyses were undertaken to compare which variables may be correlated with Indigenous employment. Using both an OLS regression and a Heckman correction model (Table 3) on the proportion of Indigenous employees, direct comparisons are made between samples of Indigenous- and non-Indigenous-owned businesses. It is first important to note that whilst both these regressions use the proportion of Indigenous employees as the dependent variable, the mean value of this in the sample of Indigenous-owned businesses is considerably higher than the non-Indigenous business sample (56.3 and 4.4, respectively). Therefore, the coefficients presented in the non-Indigenous dataset are considerably smaller than in the Indigenous dataset. Both regression models need to be interpreted relative to the reference business that is defined by the omitted dummy variables. The omitted category is a small business in the retail sector with one employee, operating in non-remote NSW. Table A2 in the appendix shows the descriptive statistics for the parameterised samples used in the regression analyses.

Table 3 shows that the size of the business is negatively related to the overall proportional rate of Indigenous employees for both Indigenous businesses ($\hat{\beta} = -23.09$, $p < .05$) and non-Indigenous businesses ($\hat{\beta} = -6.88$, $p < .05$). This highlights a similar limitation in the supply of Indigenous employees that was discussed earlier. In terms of the sector, for non-Indigenous businesses, the industries of Professional, Scientific and Technical Services ($\hat{\beta} = -13.34$, $p < .05$) and Wholesale Trade ($\hat{\beta} = -10.38$, $p < .05$) were negatively related to Indigenous employment. For Indigenous businesses, Health Care and Social Assistance were positively related to Indigenous employment ($\hat{\beta} = 10.85$, $p < .05$) and Rental, Hiring and Real Estate Services were negatively related ($\hat{\beta} = -15.90$, $p < .05$). Health care is a significant area of Indigenous focus,[3] with several Indigenous-specific organisations that require an Indigenous workforce (Australian Institute of Health and Welfare 2023). On the other hand, the negative relationship seen between Indigenous employment and rental, hiring, and real estate services cannot be explained with a reasonable hypothesis based on the existing literature. For-profit status ($\hat{\beta} = -12.37$, $p < .05$) was also negatively related to Indigenous employment, indicating Indigenous-owned

Table 3. Heckman correction and OLS regression of non-Indigenous and Indigenous businesses, with two or more employees

	Non-Indigenous businesses		Indigenous businesses	
Proportion of Indigenous employees	Coefficient	Std. err.	Coefficient	Robust std. err.
For profit status	−5.93	2.45	−12.373*	2.15
Accommodation and food services	−3.07	3.12	.	.
Administrative and support services	−3.53	4.68	8.052	4.20
Agriculture, forestry, and fishing	−3.34	4.55	6.487	3.95
Arts and recreation services	3.34	3.91	9.459	4.75
Education and training	−9.16*	3.54	6.381	3.01
Construction	−0.2	2.89	−5.296	2.52
Electricity, gas, water, and waste services	5.03	5.66	−8.226	3.31
Financial and insurance services	−5.12	3.73	8.544	6.63
Health care and social assistance	−5.1	3.27	10.848*	3.38
Information media and telecommunications	−9.46*	3.84	−12.660	3.43
Manufacturing	−4.94	3.8	−6.495	3.39
Mining	−3.65	8.43	−1.440	5.06
Other services	−5.2	3.18	.	.
Professional, scientific, and technical services	−13.34*	4.29	3.121	2.83
Public administration and safety	−3.81	5.08	−4.603	2.92
Rental, hiring, and real estate services	−8.53	6.01	−15.900*	4.23
Transport, postal, and warehousing	−2.16	4.2	−3.955	2.70
Wholesale trade	−10.38*	4.64	.	.
NT	2.48	4.7	−6.790	2.72
ACT	−0.27	3.72	−4.628	2.45
TAS	−0.55	3.79	4.714	11.13
SA	−2.4	2.41	−2.256	2.84
WA	−2.03	2.29	−1.212	1.71
QLD	2.93	1.63	0.879	1.56
VIC	−0.19	1.66	−3.426	2.54
Large businesses (20+ Employees)	−6.88*	1.48	−23.088*	1.64
Remote businesses	3.86	3.65	9.472*	1.95
_cons	16.73	3.86	71.821	3.12
	No. of obs.	670	No. of Obs.	2,246
	Wald chi2(28)	72.78	F(25, 2220)	18.43
	Prob > chi2	0.00	R-Squared	0.1571

This table reports on two separate regressions using the same dependent variable, using data from the survey of non-Indigenous businesses and from 2021 Supply Nation data. The reference omitted category for the regressions in this table is small, not-for-profit businesses in the non-remote NSW area that operate in retail trade. *$P > t <= 0.05$

Table 4. Blinder–Oaxaca decomposition of expected proportion of employees who are Indigenous

	Expected Indigenous employment rate		Decomposition	
	Average Indigenous endowments	Average non-Indigenous endowments	% explained by differences in endowments	% explained by differences in coefficients
Indigenous coefficients	56.3	49.5	13%	87%
Non-Indigenous coefficients	7.7	4.4	6%	94%

The data in this table is calculated using the coefficients in Table 3 and mean values in Table A2.

non-for-profits were more likely to hire Indigenous employees. This aligns with previous findings that for Indigenous-owned not-for-profits, there may be more specific expectations or prioritisations to employ Indigenous people (see Evans and Williamson 2017). This relationship was not found in the non-Indigenous sample, indicating this relationship may be specific to Indigenous-owned businesses. There were no significant results from state-based variables in either sample, but remote status was positively related ($\hat{\beta} = 9.47$, $p < .05$) with Indigenous employment in the Indigenous sample. Unfortunately, the data do not provide sufficient detail as to exactly where these remote businesses are located, which may help develop a more robust hypothesis as to why we see a positive relationship between Indigenous employment and remote status in the Indigenous sample, but not the non-Indigenous sample. However, the Community Development Program, which operates in remote areas with limited labour market opportunities, may be one explanation as to why remote-located Indigenous-owned businesses are more likely to employ Indigenous people, given a large number of current CDP providers are Aboriginal Community Controlled Organisations (NIAA 2023). Ultimately, these analyses confirm that the size of businesses is significantly associated with the proportion of Indigenous employees. Further, Indigenous not-for-profit businesses are associated with significantly higher Indigenous employment rates than Indigenous for-profit businesses. However, this is not the case for the non-Indigenous sample, with no significant differences in Indigenous employment rates when controlling for-profit status.

RQ4:. *How much of the divergence in Indigenous employment rates between Indigenous and non-Indigenous businesses can be explained by these observable characteristics, and what is left unanswered?*

Table 4 presents the findings from a Blinder–Oaxaca decomposition on the two datasets, using the coefficients from both samples in Table 3. A Blinder–Oaxaca decomposition allows us to evaluate what the rate of Indigenous employment would be in non-Indigenous-owned businesses, were they to have the same observable characteristics as the Indigenous business sample, and vice versa. This is undertaken using the total of each of the mean values of the non-Indigenous-independent variables (i.e., industry, which can be viewed in Table A2) times by the coefficients of the Indigenous-independent variables (in Table 3). The inverse calculates the values for the non-Indigenous coefficients. Acknowledging that the composition of the two samples is different in terms of industry profile, etc., a Blinder–Oaxaca decomposition allow us to estimate what the average rate of Indigenous employment would be in the Indigenous and non-Indigenous samples, were they to have the same compositions. In doing so, this allows us to estimate how much of the divergence in the average rate of Indigenous employment between the two samples can be explained by the observed characteristics within our datasets (industry, location,

profit status, business size). Table 4 then presents what the average rate of Indigenous employment (coefficients) is for both samples, were they to maintain the composition (endowments) of the other sample. Therefore, we can provide estimations of how much of the divergence in the average rate of Indigenous employment between the samples can be attributed to differences in their composition (Table 4).

The mean proportional Indigenous employment rate in the sample of Indigenous-owned businesses is 56.3%. Were the characteristics of the observed variables (i.e., profit status, industry, location) to be the same as what is seen in the sample of non-Indigenous businesses, the mean proportional Indigenous employment rate would be predicted to be lower, at 49.5%. The reverse is presented with the sample of non-Indigenous businesses maintaining a mean proportional Indigenous employment rate of 4.4%, with it expected to be 7.7% were the sample to have the same observed characteristics of the sample of Indigenous businesses. These results are shown in Table 4.

This analysis shows that some of the variation in the proportion of Indigenous employees for both datasets can be explained by differences in the observed business characteristics (13% in the case of the Indigenous sample, 6% for the non-Indigenous sample). However, the vast majority of the difference between the coefficients for proportional Indigenous employment cannot be explained by the divergence in the observed characteristics within our datasets (industry, location, profit status, business size). Put simply, this means that the divergence in Indigenous employment between the two datasets cannot be explained not only by demographic characteristics but also by other factors that are not present within the two datasets.

Discussion

This paper presents several key findings contributing to the literature on Indigenous employment in Australia. Whilst the sum totals of Indigenous employment should be interpreted tentatively, it is clear that Indigenous-owned businesses are maintaining significantly high rates of Indigenous employment, somewhere in the magnitude of 12 times that of non-Indigenous-owned businesses. This is a somewhat more modest estimation than provided by Hunter (2015) although the data and methods used in this paper provide more robust findings. Ultimately, the findings in this paper comparing the overall rates of Indigenous employment within Indigenous- and non-Indigenous-owned businesses confirm empirically that Indigenous-owned businesses are clearly much more successful employers of Indigenous people.

The size of the business within the samples of Indigenous and non-Indigenous businesses both maintain negative correlations with Indigenous employment, indicating the limits of the supply of an available Indigenous workforce. Meanwhile, remoteness and profit status maintained significant correlations for the Indigenous sample, whereas this was not the case for non-Indigenous businesses. This highlights the potential for Indigenous not-for-profits to specifically require an Indigenous workforce (or attract an Indigenous workforce) and for remote Indigenous businesses to access local labour markets with a higher proportion of Indigenous people (Evans et al 2021). The only industry variable that demonstrated a significant and positive correlation with Indigenous employment was Indigenous health care and social assistance businesses, which confirms their requirements for an Indigenous workforce to provide more culturally appropriate care (NACCHO 2023).

Finally, a Blinder–Oaxaca decomposition shows that the divergences in Indigenous employment between the samples of Indigenous and non-Indigenous businesses cannot be explained by the different composition of industry profiles, locations, business size, or profit status. Thus, it indicates that other factors are driving Indigenous employment

within the Indigenous business sector. Equally, it demonstrates that other factors are constraining Indigenous employment in non-Indigenous businesses. Existing theoretical perspectives based on non-Indigenous understandings of the way businesses work do not explain the difference in employment outcomes for Indigenous people.

The existing literature clearly details the divergences in workplace practices between Indigenous- and non-Indigenous-owned businesses. Adjusting for divergences in the broad characteristics of Indigenous and non-Indigenous businesses, this paper confirms that these divergences cannot explain differences in Indigenous employment outcomes between Indigenous and non-Indigenous businesses. Whilst non-Indigenous businesses may be widening their approaches to workplace policy to improve Indigenous employment outcomes, they still maintain significant and consistent challenges (Brown et al 2020; Minderoo Foundation et al 2022). Indigenous businesses are likely to always, on average, maintain substantially higher rates of Indigenous employment than non-Indigenous businesses. The informed, tailored, and significant investments by Indigenous entrepreneurs to create and support Indigenous employment are not going to be easily replicated by non-Indigenous entrepreneurs. Therefore, the continuing growth of the Indigenous business sector is imperative, especially given its room for growth and the broader socio-economic impacts a large Indigenous business sector could bring. In any case, it is clearly imperative that the significant gap between the rates of Indigenous employment between Indigenous- and non-Indigenous-owned businesses needs to be reduced. This paper shows that differences in business characteristics cannot explain this gap, and as such, non-Indigenous-owned businesses should be better at incorporating the best practices of the Indigenous business sector to improve their Indigenous employment outcomes. The analysis presented in this paper contributes to the existing literature on Indigenous employment and the Indigenous business sector, helping to confirm, quantitatively, the findings of previous studies (e.g., Evans et al 2021; Eva et al 2024) that detail how divergent human resource management (HRM) approaches between Indigenous and non-Indigenous businesses create divergent Indigenous employment outcomes. This paper makes a practical contribution to the research and policy environment of Indigenous employment, detailing the crucial need to incorporate Indigenous-led approaches to organisational governance, human resource management, and workplace and recruitment practice within Australian institutions.

Limitations

Given the stratifications undertaken in collecting the sample of non-Indigenous-owned businesses, the descriptive statistics and sum totals should be interpreted carefully. The primary method of this paper is multivariate analysis, to demonstrate potential correlations between Indigenous employment and variables such as location, business size, profit status, and industry. Missing data for three industry variables in the Supply Nation dataset is due to the ANZSIC industry categories used being a constructed variable in which not all Supply Nation industry categories were able to be allocated to every ANZSIC category. The original Supply Nation dataset used broader industry categories that presented more diffuse results, and hence they were re-coded into the ANZSIC categories. Details of the construction can be found in Eva et al (2023b).

Conclusion

This paper provides a unique and timely comparative analysis of samples of Indigenous and non-Indigenous businesses relating to their rates of Indigenous employment. It demonstrates the divergence in rates of Indigenous employment between the two samples

and shows that this divergence cannot be explained by differences in the broad characteristics of the two samples. This provides quantitative findings to support previous qualitative descriptions of Indigenous-owned businesses and the unique workplace practices they undertake to support Indigenous employment. In doing so, this paper highlights the importance of the continued growth of the Indigenous business sector given its uniquely strong outcomes and the need for non-Indigenous institutions to incorporate the best practice of the Indigenous business sector concerning Indigenous-focused workplace policies.

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Notes

1 As of the start of 2024, this definition is currently being considered by government to increase from 50% to 51%. See: https://www.niaa.gov.au/indigenous-affairs/economic-development/strengthening-indigenous-procurement-policy-ipp-through-consultation-and-reform;
2 https://www.aihw.gov.au/reports/australias-welfare/profile-of-indigenous-australians
3 See https://www.naccho.org.au/acchos/

References

AIATSIS (2020) AIATSIS Code of Ethics for Aboriginal and Torres Strait Islander Research. Canberra: AIATSIS. Available at https://aiatsis.gov.au/sites/default/files/2020-10/aiatsis-code-ethics.pdf

Altman, J (2000) The economic status of indigenous Australians. *CAEPR Discussion Paper No.193.* Available at https://openresearch-repository.anu.edu.au/bitstream/1885/40098/2/2000_DP193.pdf

Australian Bureau of Statistics (2020) Microdata and TableBuilder: Business Longitudinal Analysis Data Environment, BLADE, ABS Website (accessed 21 December 2023).

Australian Bureau of Statistics (2021a) Estimates of aboriginal and Torres Strait Islander Australians. ABS. Available at https://www.abs.gov.au/statistics/people/aboriginal-and-torres-straitislander-peoples/estimates-aboriginal-and-torres-strait-islander-australians/latest-release.

Australian Bureau of Statistics (2021b) Employment by Indigenous Status [Census Table Builder] (accessed 16 May 2023).

The Australian National University (2021) Innovate Reconciliation Action Plan January 2021-December 2022. Available at https://www.anu.edu.au/about/strategic-planning/reconciliation-action-plan

Biddle N and Lahn J (2016) Understanding aboriginal and torres strait islander employee decisions to exit the Australian public service. *CAEPR Working Paper No.110/2016.* Available at https://caepr.cass.anu.edu.au/sites/default/files/docs/CAEPR-WP110_2016pdf_0.pdf

Blackwell B, Bodle K, Hunt J, Hunter B, Stratton J and Woods K (2019) Methods for estimating the market value of indigenous knowledge. Report Commissioned by IP Australia, Canberra. Available at https://www.ipaustralia.gov.au/tools-and-research/professional-resources/data-research-and-reports/publications-and-reports/~/-/media/Project/IPA/IPAustralia/PDF/Methods-for-estimating-the-market-value-of-Indigenous-Knowledge.pdf

Blinder A (1973) Wage discrimination: Reduced form and structural estimates. *The Journal of Human Resources* 8(4), 436–455. https://doi.org/10.2307/144855

Bodle K, Brimble M, Weaven S, Frazer L and Blue L (2018) Critical success factors in managing sustainable indigenous businesses in Australia. *Pacific Accounting Review* 30(1), 35–51. Available at https://www.emerald.com/insight/content/doi/10.1108/PAR-02-2016-0017/full/html

Brown C, D'Almada-Remedios R, Gilbert J, O'Leary J and Young N (2020) *Gari Yala (Speak the Truth): Centreing the Work Experiences of Aboriginal and/or Torres Strait Islander Australians*, Sydney, Diversity Council Australia/Jumbunna Institute.

Canedo A (2019) Labor market discrimination against indigenous peoples in Mexico: A decomposition analysis of wage differentials. *Iberoamericana. Nordic Journal of Latin American and Caribbean Studies* 48(1), 12–27. https://doi.org/10.16993/iberoamericana.433

Charmaz K (2017) The power of constructivist grounded theory for critical inquiry. *Qualitative Inquiry* 23(1), 34–45. https://doi.org/10.1177/1077800416657105

Collins J and Norman H (2018) Indigenous entrepreneurship and indigenous employment in Australia. *Journal of Australian Political Economy* 82, 149–170. Available at https://www.ppesydney.net/content/uploads/2020/05/Indigenous-entrepreneurship-and-indigenous-employment-in-Australia.pdf

Commonwealth of Australia (2022) *Commonwealth Closing the Gap Annual Report 2022*. Canberra: National Indigenous Australians Agency. Available at https://www.niaa.gov.au/news-and-media/commonwealth-closing-gap-annual-report-2022

Dana LP (2015) Indigenous entrepreneurship: An emerging field of research. *International Journal of Business and Globalisation*, 14, 158. https://doi.org/10.1504/IJBG.2015.067433

Duncan GJ and Hoffman SD (1981) The incidence and wage effects of overeducation. *Economics of Education Review* 1(1), 75–86. https://doi.org/10.1016/0272-7757(81)90028-5

Eva C, Harris J, Bodle K, Foley D, Nichols N and Hunter B (2023a) Externalities, economics, and expectations of the indigenous business sector. *Journal of Australian Indigenous Issues* 26(3–4), 79–104. Available at https://search.informit.org/doi/pdf/10.3316/informit.466520980608995

Eva C, Bodle K, Foley D, Harris J and Hunter B (2023b) The importance of understanding Indigenous employment in the Indigenous business sector. *Australian Journal of Social Issues* 58, 494–522. https://doi.org/10.1002/ajs4.271

Eva C, Harris J, Bodle K, Foley D, Hunter B and Nichols N (2024) "It's self-determination. Blackfullas Making Right Decisions for Blackfullas": Why Indigenous-owned businesses create better Indigenous employment outcomes. *Australian Journal of Social Issues* 59, 29–56. https://doi.org/10.1002/ajs4.292

Evans M and Williamson, I (2017) Indigenous entrepreneurial motivations: Purpose, profit and leadership. *Journal of Australian Indigenous Issues* 1(20), 6–22. https://doi.org/10.5465/AMBPP.2017.61

Evans M, Polidano C, Moschion J, Langton M, Storey M, Jensen P and Kurland S (2021) *Indigenous Business Sector Snapshot Study, Insights from I-BLADE 1.0*. The University of Melbourne. Available at https://fbe.unimelb.edu.au/cibl/assets/snapshot/RFQ03898-M-and-M-Snapshot-Study.pdf

Evans M, Polidano C, Dahmann SC, Kalera Y, Ruiz M, Moschion J and Blackman M (2024) *Indigenous Business and Corporation Snapshot Study 3.0*. The University of Melbourne. Available at https://fbe.unimelb.edu.au/cibl/research

First Australians Capital (2022) Addressing Indigenous Economic Inclusion in the Social Enterprise Sector. *Social Enterprise World Forum Reflection Report*. Available at https://whiteboxenterprises.com.au/wp-content/uploads/2023/03/Addressing-Indigenous-Economic-Inclusion-in-the-Social-Enterprise-Sector-7.pdf

First Peoples State Relations and Victorian State Government (2023) *Opportunity and prosperity*. Victorian State Government Website. Available at https://www.firstpeoplesrelations.vic.gov.au/victorian-government-aboriginal-affairs-report-2021/opportunity-and-prosperity (accessed 01 July 2024).

Foley D (2000) *Successful Indigenous Australian Entrepreneurs: A Case Study Analysis*. Aboriginal and Torres Strait Islander Studies Unit Research Report Series 4. The University of Queensland. Available at https://espace.library.uq.edu.au/view/UQ:385833

Foley D (2003) An examination of Indigenous Australian entrepreneurs. *Journal of Developmental Entrepreneurship* 8(2), 133–151. Available at https://www.researchgate.net/publication/292700295_An_examination_of_Indigenous_Australian_entrepreneurs

Foley D (2006) *Indigenous Australian Entrepreneurs: Not Community and Not in the Outback*. CAEPR Discussion Paper No.279. Available at https://openresearch-repository.anu.edu.au/handle/1885/44474

Forrest A (2014) *The Forrest Review: Creating Parity*. National Indigenous Australians Agency. Available at https://www.niaa.gov.au/resource-centre/creating-parity-forrest-review

Gray M, Hunter B and Lohoar S (2012). Increasing Indigenous employment rates. *Australian Institute of Health and Welfare*. Issue Paper No. 3 produced for the Closing the Gap Clearinghouse. Available at https://www.aihw.gov.au/getmedia/71bb346a-1b83-4038-a2f7-647e65a21445/ctg-ip03.pdf.aspx?inline=true

Heckman JJ (1976) The common structure of statistical models of truncation, sample selection and limited dependent variables and a simple estimator for such models. *Annals of Economic and Social Measurement* 5, 475–492. Available at https://www.nber.org/system/files/chapters/c10491/c10491.pdf

Heckman JJ (1979) Sample selection bias as a specification error. *Econometrica* 47(1), 153–161. https://doi.org/10.2307/1912352

Hindle K and Moroz P (2010) Indigenous entrepreneurship as a research field: Developing a definitional framework from the emerging canon. *International Entrepreneurship and Management Journal* 6(4), 357–385. https://doi.org/10.1007/s11365-009-0111-x

Hunter B (2015) Whose business is it to employ Indigenous workers? *The Economic and Labour Relations Review* 26(4), 631–651. https://doi.org/10.1177/1035304615598526

Hunter B and Gray M (2017) Occupational mobility of indigenous and other Australians. *Australian Journal of Labour Economics* 20(2), 149–165.

Janke T and Sentina M (2018) Indigenous joint ventures information guide. Indigenous Business Australia. Available at https://www.iba.gov.au/wp-content/uploads/Indigenous_JV_InfoGuide.pdf

Jones M (2023) *First Peoples Enterprise Success: The Third Wave*. RMIT University of Technology, Melbourne. PhD Thesis.

Kidd R (2007) *Hard Labour, Stolen Wages: National Report on Stolen Wages*. Australians for Native Title and Reconciliation (ANTaR). Available at https://roskidd.com/wp-content/uploads/2013/09/HardLabourStolenWages-first-edition.pdf

Klein E (2014) Academic perspectives on the Forrest review: creating parity. CAEPR Topical Issue No. 2. Available at https://caepr.cass.anu.edu.au/research/publications/academic-perspectives-forrest-review-creating-parity

Leroy-Dyer S (2021) A brief history of aboriginal and torres strait islander involvement in the Australian labour market. *Journal of Australian Indigenous Issues 24.* Available at https://search.informit.org/doi/10.3316/informit.046688558409367

McGuinness S, Pouliakas K and Redmond P (2018) Skills mismatch: Concepts, Measurement and Policy Approaches. *Journal of Economic Surveys* 32(4), 985–1085. https://doi.org/10.1111/joes.12254

Mika JP (2020) Indigenous entrepreneurship: how Indigenous knowing, being and doing shapes entrepreneurial practice. In *Entrepreneurship: A Contemporary & Global Approach*. SAGE Publications Inc.

Minderoo Foundation, Bankwest Curtin Economics Centre (BCEC), and Murawin (2022) *Woort Koorliny Australian Indigenous Employment Index 2022 National Report*. Available at https://cdn.minderoo.org/content/uploads/2022/05/22105150/Woort-Koorliny-Australian-Indigenous-Employment-Index-2022.pdf

Moreton-Robinson A (2015) *The White Possessive: Property, Power, and Indigenous Sovereignty*. University of Minnesota Press. Available at www.jstor.org/stable/10.5749/j.ctt155jmpf

Monem R and McDonald H (2023) Closing the First Nations employment gap will take 100 years. The Conversation Australia. Available at https://theconversation.com/closing-the-first-nations-employment-gap-will-take-100-years-205290

Miley FM and Read AF (2018) "This degrading and stealthy practice" Accounting, stigma and Indigenous wages in Australia 1897-1972. *Accounting, Auditing & Accountability Journal* 31(2), 457–477. https://doi.org/10.1108/AAAJ-10-2014-1839

National Aboriginal Community Controlled Health Organisation (NACCHO). (2023). Annual Report 2022–2023. Available at https://www.naccho.org.au/app/uploads/2023/11/NACCHO_AR2022–23_231020_Online.pdf

National Indigenous Australians Agency (NIAA) (2023) Where the Community Development Program (CDP) operates. The Australian Government. https://www.niaa.gov.au/sites/default/files/documents/publications/Community%20Development%20Program%20Regions%20List%20and%20Map%20-%20Aug%202023.pdf

National Health and Medical Research Council (2018a) Ethical conduct in research with Aboriginal and Torres Strait Islander Peoples and communities: Guidelines for researchers and stakeholders. Commonwealth of Australia, Canberra. Available at https://www.nhmrc.gov.au/about-us/resources/ethical-conduct-research-aboriginal-and-torres-strait-islander-peoples-and-communities

National Health and Medical Research Council (2018b) Keeping research on Track II: A companion document to Ethical conduct in research with Aboriginal and Torres Strait Islander Peoples and communities: Guidelines for researchers and stakeholders. Commonwealth of Australia, Canberra. Available at https://www.nhmrc.gov.au/about-us/resources/keeping-research-track-ii

Oaxaca R (1973) Male–female wage differentials in urban labour markets. *International Economic Review* 14, 693–709. https://doi.org/10.2307/2525981

Polity Research and Consulting (2022) Australian reconciliation barometer 2022 full research report. Reconciliation Australia, Canberra. Available at https://www.reconciliation.org.au/wp-content/uploads/2022/11/Australian-Reconciliation-Barometer-2022.pdf

Rahimi E and Hashemi Nazari SS (2021) A detailed explanation and graphical representation of the Blinder-Oaxaca decomposition method with its application in health inequalities. *Emerging Themes in Epidemiology* 18(1), 12. https://doi.org/10.1186/s12982-021-00100-9

Reconciliation Australia (2021) *Reconciliation Action Plans*. Available at https://www.reconciliation.org.au/reconciliation-action-plans/ (accessed 01 July 2024).

Reconciliation Australia (2022) *2021 RAP Impact Report*. Available at https://www.reconciliation.org.au/reconciliation-action-plans/rap-impact/ (accessed 01 July 2024).

Savvas A, Boulton C and Jepsen E (2011) Influences on Indigenous Labour Market Outcomes. Canberra: The Productivity Commission. Available at https://www.pc.gov.au/research/supporting/influences-on-indigenous-labour-market-outcomes/indigenous-labour-market.pdf

Seet PS, Jones J, Acker T and Jogulu U (2021) Meaningful careers in social enterprises in remote Australia: employment decisions among Australian Indigenous art centre workers. *The International Journal of Human Resource Management* 32(8), 1643–1684. https://doi.org/10.1080/09585192.2018.1528556

Shepherd SM, Spivak B, Ashford LJ, Williams I, Trounson J and Paradies Y (2020) Closing the (incarceration) gap: Assessing the socio-economic and clinical indicators of indigenous males by lifetime incarceration status. *BioMed Central Public Health* 20(710), 1–14. https://doi.org/10.1186/s12889-020-08794-3

Shirodkar S, Hunter B and Foley D (2020) A new method of estimating the number of Indigenous business owner-managers. CSRM and SRC Methods Paper. (No. 2). Available at https://csrm.cass.anu.edu.au/research/publications/new-method-estimating-number-indigenous-business-owner-managers

Shirodkar S and Hunter B (2021) The impact of implicit bias on indigenous business ownership. *Australian Journal of Labour Economics* 24(1), 1–24. Available at https://search.informit.org/doi/10.3316/informit.749362223251820

Smith S (2023) Determining sample size sample size. Qualtrics. Available at https://success.qualtrics.com/rs/qualtrics/images/Determining-Sample-Size.pdf

Supply Nation (2020) *Black cladding*. Supply Nation Website. Available at https://supplynation.org.au/about-us/black-cladding/ (accessed 01 July 2024).

Supply Nation (2023) *FAQs - Indigenous Business*. Supply Nation Website. https://supplynation.org.au/resources/faqs/faqs-indigenous-business/ (accessed 01 July 2024).

Wahlquist C (2021) Indigenous entrepreneurs urged to verify their business to weed out "black-cladding." *The Guardian Australia*. Available at https://www.theguardian.com/australia-news/2021/mar/22/indigenous-entrepreneurs-urged-to-verify-their-business-to-weed-out-black-cladding (accessed 01 July 2024).

Zander KK, Dunnett DR, Brown C, Campion O, Daniels C, Daniels G, Nelson E, Daniels G, Blitner G, Carson D and Garnett ST (2014) Indigenous cultural and natural resources management and mobility in Arnhem Land, Northern Australia. *Human Ecology* 42(3), 443–453. https://doi.org/10.1007/s10745-014-9657-5

Appendix

Table A1 is produced using BLADE 2018–2019 (available from ABS Table Builder), and the survey sample of non-Indigenous businesses. This table was created in order to demonstrate that the survey sample collected was broadly representative of the diversity of industries that are present in the overall population of Australian businesses.

Table A1. Industry composition of non-Indigenous sample and population

Industry	% of businesses in each industry	% of businesses in non-Indigenous sample	[95% confidence intervals] of non-Indigenous sample	
Agriculture, forestry, and fishing	6.0%	3.4%	2.0%	4.7%
Mining	0.5%	0.9%	0.2%	1.6%
Manufacturing	5.5%	4.3%	2.7%	5.8%
Electricity, gas, water, and waste services	0.4%	1.2%	0.4%	2%
Construction	16.6%	10.6%	8.3%	12.9%
Wholesale trade	4.6%	3.5%	2.1%	4.9%
Retail trade	8.1%	14.1%	11.5%	16.7%
Accommodation and food services	7.4%	8.7%	6.6%	10.8%
Transport, postal, and warehousing	4.1%	3.2%	1.9%	4.6%
Information media and telecommunications	0.9%	4.7%	3.1%	6.3%
Financial and insurance services	3.9%	5.1%	3.5%	6.8%
Rental, hiring, and real estate services	4.9%	2.2%	1.1%	3.3%

(*Continued*)

Table A1. (*Continued*)

Industry	% of businesses in each industry	% of businesses in non-Indigenous sample	[95% confidence intervals] of non-Indigenous sample	
Professional, scientific, and technical services	13.4%	6.5%	4.6%	8.3%
Administrative and support services	4.5%	2.1%	1%	3.1%
Public administration and safety	0.6%	1.6%	0.7%	2.6%
Education and training	2.2%	5.6%	3.9%	7.3%
Health care and social assistance	7.2%	8.1%	6%	10.1%
Arts and recreation services	1.5%	4.4%	2.9%	6%
Other services	7.7%	9.9%	7.6%	12.1%

This table shows the proportion of businesses within each industry category between the two datasets (survey sample of non-Indigenous businesses and the population of Australian businesses). This table first uses 2018–2019 BLADE data drawn from ABS Table Builder. The data reported in this table refers to businesses in Australia within BLADE that have at least one employee, with the data unable to be further disaggregated to two or more employees (which would be directly comparable to our sample).

Table A2 provides the descriptive statistics of the variables used in the multivariate analyses presented in this paper. The sample of Indigenous businesses comes from an administrative dataset provided by Supply Nation, which included some missing data points. Therefore, whilst 2,291 businesses are listed in the sample in Table 1, 2,246 are included in Table A2 and in the multivariate analysis, as 45 businesses contained a missing variable, which excluded them from multivariate analyses.

Table A2. Descriptive statistics for samples of Indigenous and non-Indigenous businesses

	Indigenous businesses				Non-Indigenous businesses			
	Mean	SD	Min	Max	Mean	SD	Min	Max
No. employees	16.25	85.58	2	2700	220.07	787.97	2	5500
No. Indigenous employees	5.57	16.94	1	450	6.24	18.66	0	200
Proportion of Indigenous employees	56.3	28.22	1.83	100	5.25	10.03	0	96
For-profit status	0.92	0.28	0	1	0.90	0.30	0	1
Accommodation and food services	.	.	.	.	0.09	0.28	0	1
Administrative and support services	0.03	0.17	0	1	0.21	0.14	0	1
Agriculture, forestry, and fishing	0.029	0.17	0	1	0.03	0.18	0	1
Arts and recreation Services	0.02	0.14	0	1	0.04	0.20	0	1
Education and training	0.067	0.25	0	1	0.05	0.23	0	1
Construction	0.23	0.42	0	1	0.11	0.31	0	1
Electricity, gas, water and waste services	0.049	0.22	0	1	0.01	0.11	0	1
Financial and insurance services	0.009	0.1	0	1	0.51	0.27	0	1
Health care and social assistance	0.048	0.21	0	1	0.08	0.27	0	1
Information media and telecommunications	0.036	0.19	0	1	0.48	0.21	0	1

(*Continued*)

Table A2. (*Continued*)

	Indigenous businesses				Non-Indigenous businesses			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Manufacturing	0.056	0.23	0	1	0.04	0.20	0	1
Mining	0.012	0.11	0	1	0.01	0.09	0	1
Other services	.	.	.	.	0.98	0.30	0	1
Professional, scientific, and technical Services	0.114	0.32	0	1	0.06	0.25	0	1
Public administration and safety	0.07	0.25	0	1	0.02	0.13	0	1
Rental, hiring, and real estate services	0.018	0.1	0	1	0.02	0.17	0	1
Transport, postal, and warehousing	0.149	0.36	0	1	0.03	0.17	0	1
Wholesale trade	.	.	.	.	0.04	0.18	0	1
NT	0.093	0.29	0	1	0.02	0.15	0	1
ACT	0.058	0.23	0	1	0.04	0.20	0	1
TAS	0.003	0.05	0	1	0.04	0.20	0	1
SA	0.045	0.21	0	1	0.11	0.31	0	1
WA	0.211	0.41	0	1	0.13	0.34	0	1
QLD	0.215	0.41	0	1	0.30	0.46	0	1
VIC	0.065	0.255	0	1	0.29	0.46	0	1
Large businesses (20+ employees)	0.132	0.34	0	1	0.48	0.50	0	1
Remote businesses	0.193	0.39	0	1	0.05	0.21	0	1
Number of observations	2,246				670			

This table uses 2021 Supply Nation data (Eva et al 2023b) and the primary survey data.

Christian Eva is a Research Fellow at POLIS: The Centre for Social Policy Research at the Australian National University. This paper is one of a series on Indigenous employment in the Indigenous business sector that formed part of his PhD, supervised and supported by the co-authors of this paper. Christian maintains a passion for and research interests in areas of Indigenous economic self- determination, sovereignty and environmental justice.

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