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EARLY CHILDHOOD EDUCATION –  
PRESCHOOL ATTENDANCE AMONG  
INDIGENOUS 3-YEAR-OLDS

H CRAWFORD AND N BIDDLE

2016 CENSUS PAPERS

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# Early childhood education – preschool attendance among Indigenous 3-year-olds

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## Abstract

There is much evidence of the benefits of 2 years of early childhood education, but relatively little research focusing specifically on the benefits to Aboriginal and Torres Strait Islander children. Australian governments are currently committed to providing universal access to early childhood education in the year before full-time school, articulated in the first National Partnership Agreement on Early Childhood Education (NPECE), which was signed by the Council of Australian Governments in 2008. The most recent Closing the Gap target relating to Aboriginal and Torres Strait Islander children's participation in early childhood education aligned with this national approach. Ten years on from the first NPECE, there have been calls to extend universal access to early childhood education to include children 2 years before they start school (generally, when children are aged 3–4 years).

Many Australian children of this age already participate in early learning in formal child-care settings or through '3-year-old preschool' programs directed towards particular cohorts. In this paper, we examine preschool participation among Indigenous 3-year-olds. By 'preschool participation', we mean participation in a quality early childhood education program, regardless of whether the program is delivered in a dedicated preschool service or in another setting such as a long day-care centre, as defined in the NPECE.



Existing data sources do not provide complete coverage of participation in early childhood education 2 years before the start of school according to this definition. Despite some limitations, the Australian Census of Population and Housing captures at least some preschool participation across diverse settings (see also Census Paper No. 3, *Preschool participation*) and yields useful indicative information about longer-term trends in preschool participation among 3-year-olds. According to the Census, in 2016 about one-third of Australian 3-year-olds were attending preschool. Preschool participation rates among Indigenous 3-year-olds increased substantially during this period, from 26% in 2006 to 33% in 2016. In comparison, the preschool participation rate among non-Indigenous 3-year-olds remained steady during the same 10-year period, at around 33–34%.

In 2016, the preschool participation rate among Indigenous 3-year-olds was highest in New South Wales, where most preschool programs are delivered in long day-care centres, and the participation rate tended to increase with household income. It is important to interpret differences across states and territories in the context of differences in early childhood education delivery models, funding arrangements, school starting ages, and targeted policies for 3-year-olds and Indigenous children. In South Australia and the Northern Territory – where preschool participation rates among Indigenous 3-year-olds were relatively high in 2016 compared with other jurisdictions – participation tended to be higher among those living in lower-income households.

Our analysis suggests that diverse factors are driving increased participation in early childhood education among Indigenous preschoolers. These include an increasing demand for child care and educational services from a growing ‘Indigenous middle class’, and government policies to support educational participation by Indigenous children and those in disadvantaged circumstances. The strengths and challenges of different policy approaches to supporting increased preschool participation (e.g. universal versus targeted) are discussed in the literature. More evidence is needed about outcomes for Indigenous children attending programs of different types and in different settings, taking into account differences in children’s characteristics and circumstances, to inform policy deliberations about universal access to 2 years of early childhood education.

**Keywords:** Aboriginal and Torres Strait Islander, Indigenous, early childhood education, preschool

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**Acronyms**

ABS	Australian Bureau of Statistics
ANU	Australian National University
CAEPR	Centre for Aboriginal Economic Policy Research
NECECC	National Early Childhood Education and Care Collection

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## Introduction

This report examines information from the Australian Census of Population and Housing, conducted by the Australian Bureau of Statistics, relating to broad trends in, and patterns of, preschool participation among 3-year-old Aboriginal and Torres Strait Islander Australian children. Analysis of census data is supplemented with analysis of information from the National Early Childhood Education and Care Collection (NECECC).

The term ‘preschool education’ is typically used to refer to education programs aimed at children, generally aged 4–5 years, who are in the year before full-time school. ‘Preschool participation’ is used to refer to children’s attendance at a service offering such programs. In recent years, the benefits of 2 years of preschool education have been advocated, and many Australian 3-year-olds already attend such programs.

High-quality early childhood education is important for children’s cognitive, emotional and social development (e.g. see reviews in Baxter & Hand 2013, PC 2014, AIHW 2015, Fox & Geddes 2016, SCRGSP 2016, Warren et al. 2016, Biddle et al. 2017a, Pascoe & Brennan 2017). In *Schools, skills, and synapses*, Nobel Prize-winning economist James Heckman (2008) argued that the greatest return on investment for the development of human capital is in the early years. *Preschool: two years are better than one* summarises a body of evidence showing that ‘two years of preschool has more impact than one, especially for the children most likely to be developmentally vulnerable’ (Fox & Geddes 2016:5). The report’s authors argued that Australia should offer 2 years of preschool to all children, effectively extending ‘universal access’ to high-quality early learning programs to 3-year-olds.

There is a smaller body of quantitative evidence of the benefits of participating in preschool or formal child care for Aboriginal and Torres Strait Islander children (Biddle & Bath 2013, Arcos Holzinger & Biddle 2015, Azpitarte et al. 2016, Grace et al. 2017). The results of these studies indicate that Indigenous children who participated in preschool or formal child care have better outcomes according to certain measures than those who did not, but these benefits may be largely or entirely attributable to higher participation rates among children from relatively advantaged circumstances (Biddle & Bath 2013, Azpitarte et al. 2016). However, one study estimated that the beneficial effects of participation would be greater among those who did

not attend than among those who did attend (Azpitarte et al 2016). One study found benefits associated with attending preschool or child care, but weak evidence that longer hours in child care had a detrimental effect (Arcos Holzinger & Biddle 2015).

None of these studies specifically examined program quality; as discussed in our previous paper on preschool participation among 4–5-year-olds, the question of what constitutes a ‘quality’ program for Indigenous children is an important one (Crawford & Biddle 2018). Biddle (2007) suggests that, although characteristics of quality identified by Raban (2000) – more highly qualified staff, involvement of outside experts, lower child–staff ratios, parental inclusion and involvement, and low staff turnover and stable arrangements – may also apply to Indigenous children, another important characteristic of quality early childhood education that is specifically relevant to Indigenous children (identified by various authors cited in Biddle [2007]) is the involvement of Indigenous people at all levels. A number of these aspects of quality relate to many of the enablers of, and barriers to, preschool participation among Aboriginal and Torres Strait Islander children.

## Enablers of, and barriers to, Indigenous preschool participation

We previously identified some of the enablers of, and barriers to, preschool participation among Aboriginal and Torres Strait Islander children, based on a brief review of the literature in this area (see Crawford & Biddle [2018]:11–13 for more detail). In that report, we cited Hewitt and Walter (2014), who observed that the environments in which Indigenous children engage with preschool are diverse, so that ‘for children in remote areas, preschool will be a primarily Indigenous social and cultural environment, with the majority of classmates and teachers also Aboriginal or Torres Straits Islander people ... [whereas] most urban and regional Indigenous children will attend preschools where they are racially, socially and culturally a minority’ (Hewitt & Walter 2014:42). Grace et al. (2017) noted the ‘ongoing challenge in Australia to engage Indigenous people in an education system that they may not experience as culturally meaningful to them’ and restated the need to view inequities between Indigenous and non-Indigenous Australians in the context of ‘a legacy of inter-generational trauma and mistrust of government service systems for many Indigenous Australians’ (Grace et al. 2017:36).

A number of recurring themes are seen in the mainly qualitative studies that have explored the factors potentially affecting preschool participation among Indigenous children. Although some barriers are practical or socioeconomic (lack of services, distance, transport difficulties, cost), other factors such as trust, communication, Indigenous involvement in providing and staffing services, and cultural awareness and respect are also important (see review in Crawford & Biddle [2018]). A recent study identified some of the motivations for Indigenous families to enrol their children in early childhood education and care. The study found that benefits reported by parents included 'educational and social benefits for children', opportunities for parents to participate in education or work, and preparation for school in various ways (not just academically), for parents as well as children (DET 2016). A review of early learning programs that promote children's developmental and educational outcomes (Harrison et al. 2012) reported that services developed in partnership with local communities increased the uptake of early childhood education programs. In a review of factors that influence families when enrolling their children in early childhood education, Fox and Geddes (2016:44) identified financial factors, parental workforce participation and beliefs about the benefits of early childhood education, but also noted that many children of this age may simply be continuing to obtain positive early childhood experiences in parental care or informal care (e.g. with grandparents). Again, different factors will have different relevance to particular families and children because of the diversity of the environments in which Indigenous children engage with preschool.

## Recap of findings about preschool participation rates among Indigenous children aged 4–5 years

Our previous report in this series included the following findings about preschool participation rates among Indigenous children aged 4–5 years (Crawford & Biddle 2018). Over the decade 2006–16, preschool participation increased substantially among Aboriginal and Torres Strait Islander children aged 4–5 years who were not yet attending school. In 2016, these rates were on a par with, or exceeded, those of their non-Indigenous counterparts in comparable circumstances. This contrasts with results of the 2011 Census showing that preschool participation rates were generally lower among Indigenous children than among non-Indigenous children in comparable circumstances. Preschool participation rates were lower among children – both

Indigenous and non-Indigenous – in families where no parent was in paid employment, and in low-income households, than in other households. Similarly, one of the lessons from universal access for 4-year-olds highlighted by Fox and Geddes (2016:103–111) was inequitable delivery, with those missing out more likely to be those in disadvantaged circumstances. Indigenous families are overrepresented in families where no parent is in paid employment and low-income households; as a result, the lower preschool participation rate among children in these categories has a disproportionate effect on the national preschool participation rate for Indigenous children. This is an important policy-relevant finding, because it represents a marked change since 2011 when preschool participation among Indigenous children was lower than among their non-Indigenous counterparts across most parental employment and household income categories (Crawford & Biddle 2018). It suggests that there needs to be a greater policy focus on the barriers to participation among those in disadvantaged circumstances.

## Policy context

In December 2017, the report of the review to achieve educational excellence in Australian schools through early childhood interventions, entitled *Lifting our game*, was released. Commissioned by state and territory officials, this review took the terms of reference from the recently established Review to Achieve Educational Excellence in Australian Schools<sup>1</sup> and applied them to the years before school. One of the report's recommendations was that 'Australian governments progressively implement universal access to 600 hours per year of a quality early childhood education program, for example preschool, for all 3-year-olds, with access prioritised for disadvantaged children, families and communities during roll out' (Pascoe & Brennan 2017:12). 'Universal access' does not mean that participation is compulsory and does not necessarily mean that a service is provided for free or subsidised for all participants. One option described in the report is 'proportionate universalism', where disadvantaged children may receive greater subsidies or free access, or additional support (Pascoe & Brennan 2017:70). Other recommendations were for initiatives to support the participation of vulnerable or disadvantaged children, and to foster parent and community engagement with children's early learning.

Australia is not the only country where early childhood education for 3-year-olds is in the spotlight.

Most recently, the French President announced that compulsory schooling would start at age 3 years, although it was noted that this appeared to be largely symbolic because, in France, 95% of 3-year-olds were already enrolled in preschool programs (ABC 2018). The *Lifting our game* report notes that ‘most other [OECD] countries provide access for 3-year-olds to some form of universal early childhood education’ (Pascoe & Brennan 2017:61). In 1998 in the United Kingdom, the then Labour government announced a free entitlement to part-time early education for all 3- and 4-year-olds in England. The entitlement was expanded through time, and now covers 15 hours per week for 38 weeks per year. The main finding from the evaluation of that program was that there was a statistically significant short-term increase in child development from the introduction of the entitlement; however, the effect was smaller than would otherwise be the case because many low-income families did not take up the entitlement, and ‘the policy simply transferred money from the state to parents to pay for early education that they would have used anyway’ (Brewer et al. 2014:8). It is therefore important when considering expansion of preschool opportunities to 3-year-old Indigenous children to look not only at the effect of that preschool education on those who do attend, but also the distribution of attendees.

An overview of the Australian early childhood education landscape and policy context was provided in our previous paper on preschool participation among Aboriginal and Torres Strait Islander children aged 4–5 years (Crawford & Biddle 2018). Table 1 provides a broad summary of Australian governments’ early childhood education and care policy arrangements as they relate to all children in the year before school, 3-year-olds, and Aboriginal and Torres Strait Islander children.

**Table 1** Summary of relevant Australian, state and territory ECE policies for all children, and for Aboriginal and Torres Strait Islander children<sup>a</sup>

Government	Service providers with ECE program delivered to 4–5-year-olds by a qualified teacher (%) <sup>b</sup>		Summary of ECE policy
Australian	Not applicable		<p>The Australian Government Child Care Subsidy payment (from 1 July 2018) provides financial assistance for all eligible families using child-care services.<sup>c</sup> The Australian Government also provides funding to state and territory governments to support universal access to ECE, and for the National Quality Framework.<sup>d</sup></p> <p>The Australian Government's BBF Program has contributed to the operational costs of early education, child-care and school-age care services, mostly located in rural, remote and Indigenous communities (Australian Government 2018). The cost to families using these services is usually minimal. As of early 2018, Multifunctional Aboriginal Children's Services are funded under the BBF Program; however, as noted in Census Paper 1/2018, these arrangements are changing from 1 July 2018.</p>
NSW	Long day-care centres	77%	<p>Access to ECE in the year before school ('preschool'):</p> <ul style="list-style-type: none"> <li>Age-eligible children (4 years old by 31 July). Fees are set by individual services.<sup>e</sup> State government funding supports affordable access under the Start Strong program, with extra assistance for identified children, including Aboriginal and Torres Strait Islander children.<sup>f</sup></li> </ul> <p>Early access to ECE:</p> <ul style="list-style-type: none"> <li>Subsidised access to community preschools for 3-year-old Aboriginal children and other identified children.<sup>g</sup></li> </ul>
	Community preschools	18%	
	Government preschools	4%	
	Independent schools	0%	
Vic	Long day-care centres	53%	<p>Access to ECE in the year before school ('kindergarten'):</p> <ul style="list-style-type: none"> <li>Age-eligible children (4 years old by 30 April). Fees are set by individual services. State government funding supports affordable access, including targeted assistance for Aboriginal and Torres Strait Islander children, and other identified children.<sup>h</sup></li> </ul> <p>Early access to ECE:</p> <ul style="list-style-type: none"> <li>Free or low-cost kindergarten (in diverse settings) for 3-year-old Aboriginal children and other identified children.<sup>i</sup></li> </ul>
	Community preschools	34%	
	Government preschools	9%	
	Independent schools	3%	
Qld	Long day-care centres	71%	<p>Access to ECE in the year before school ('kindergarten'):</p> <ul style="list-style-type: none"> <li>Age-eligible children (4 years old by 30 June). Fees are set by individual services. The state government provides a subsidy for Aboriginal and Torres Strait Islander children, and other identified children.<sup>j</sup></li> <li>Pilot program to facilitate access to kindergarten in rural or remote areas.<sup>k</sup></li> </ul> <p>Early access to ECE:</p> <ul style="list-style-type: none"> <li>Pre-prep for 3½–4½-year-old Aboriginal and Torres Strait Islander children in Indigenous communities, supported by the Department of Education and Training.<sup>l</sup></li> </ul>
	Community preschools	21%	
	Government preschools	6%	
	Independent schools	1%	

**Table 1** *continued*

Service providers with ECE program delivered to 4–5-year-olds by a qualified teacher (%) <sup>b</sup>			Summary of ECE policy
Government			
SA	Long day-care centres	51%	<p>Access to ECE in the year before school ('preschool' or 'kindergarten'):</p> <ul style="list-style-type: none"> <li>Age-eligible children (4 years old by 1 May). Fees vary according to the service setting. Government preschools, comprising almost half the sector in SA, are free or relatively low cost.<sup>m</sup></li> </ul> <p>Early access to ECE:</p> <ul style="list-style-type: none"> <li>For 3-year-old Aboriginal children and other identified children.<sup>n</sup></li> </ul>
	Community preschools	1%	
	Government preschools	47%	
	Independent schools	2%	
WA	Long day-care centres	38%	<p>Access to ECE in the year before school ('kindergarten'):</p> <ul style="list-style-type: none"> <li>Age-eligible children (4 years old by 1 June). Fees vary according to the service setting. Government preschools, comprising almost half the sector in WA, are free or relatively low cost.<sup>m</sup></li> </ul> <p>Early access to ECE:</p> <ul style="list-style-type: none"> <li>KindiLink (pilot) for 3-year-olds attending with a parent/carer – 6 hours per week of play-and-learn sessions for children and their parent/carer at 38 schools.<sup>o</sup></li> </ul>
	Community preschools	0%	
	Government preschools	45%	
	Independent schools	8%	
	Catholic schools	9%	
Tas	Long day-care centres	36%	<p>Access to ECE in the year before school ('kindergarten'):</p> <ul style="list-style-type: none"> <li>Age-eligible children (4 years old by 1 January). Fees vary according to the service setting. Government preschools, comprising almost half the sector in Tasmania, are free or relatively low cost.<sup>m</sup></li> </ul> <p>Early access to ECE:</p> <ul style="list-style-type: none"> <li>Starting in 2020, the Tasmanian Government will subsidise access to ECE (10 hours per week) for 3-year-old Aboriginal and/or Torres Strait Islander children, and other identified groups.<sup>p</sup></li> </ul>
	Community preschools	0%	
	Government preschools	47%	
	Independent schools	8%	
	Catholic schools	9%	
NT	Long day-care centres	36%	<p>Access to ECE in the year before school ('preschool'):</p> <ul style="list-style-type: none"> <li>Age-eligible children (4 years old by 1 June). Fees vary according to the service setting. Government preschools, comprising almost half the sector in NT, are free or relatively low cost.<sup>m</sup></li> </ul> <p>Early access to ECE:</p> <ul style="list-style-type: none"> <li>Children living in very remote areas can attend preschool from the age of 3 up to the age of 3½, accompanied by a parent or carer.<sup>q</sup></li> </ul>
	Community preschools	0%	
	Government preschools	39%	
	Independent schools	2%	
	Catholic schools	2%	

Table 1 *continued*

Government	Service providers with ECE program delivered to 4–5-year-olds by a qualified teacher (%) <sup>b</sup>		Summary of ECE policy
ACT	Long day-care centres	61%	Access to ECE in the year before school ('preschool'):
	Community preschools	0%	
	Government preschools	36%	Early access to ECE:
	Independent schools	2%	

- Age-eligible children (4 years old by 1 April). Fees vary according to the service setting. Government preschools, comprising almost half the sector in ACT, are free or relatively low cost.<sup>m</sup>
- The ACT Government's Koori Preschool Program provides access to early learning for Aboriginal and Torres Strait Islander children from birth to 3 years (when accompanied by a parent or carer), as well as an ECE program for 3–5-year-olds.<sup>r</sup> In Jervis Bay, 3-year-old Aboriginal and Torres Strait Islander children can access 15 hours of preschool per week.<sup>s</sup>

BBF = Budget Based Funded; ECE = early childhood education

- a For more information, see PC (2018), and Fox and Geddes (2016).
- b See Table 2, which presents percentages of service providers providing an ECE program to 4–5-year-olds. These are authors' calculations drawing on data sourced from ABS (2017a:Appendix 1, Table A2).
- c Before 2 July 2018, eligible families who used child-care services were able to claim payments to help meet the costs of child care, including Child Care Benefit (CCB) and Child Care Rebate (CCR) (see <https://www.humanservices.gov.au/organisations/business/your-business-sector/child-care-service-providers#a2>). From 2 July 2018, a child care subsidy will replace the CCB and CCR (see <https://www.education.gov.au/ChildCarePackage>). As part of the new child-care package, the Community Child Care Fund will help services that were previously supported by the BBF Program to transition into the new child-care arrangements. The BBF Program, which closed on 30 June 2018, contributed to the operational costs of about 300 early education, child-care and school-age care services, mostly located in rural, remote and Indigenous communities, and the costs to families using these services were usually minimal. Multifunctional Aboriginal Children's Services were funded under the BBF (see <https://www.education.gov.au/budget-based-funded-program-1> and <https://www.mychild.gov.au/families-carers/indigenous>).
- d For more information, see PC (2018).
- e See <https://education.nsw.gov.au/early-childhood-education/information-for-parents-and-carers/choosing-a-service>.
- f See <https://education.nsw.gov.au/early-childhood-education/operating-an-early-childhood-education-service/grants-and-funded-programs/start-strong>.
- g See [https://education.nsw.gov.au/media/ecec/pdf-documents/start-strong/25082\\_Start-Strong-factsheet-1\\_v2.pdf](https://education.nsw.gov.au/media/ecec/pdf-documents/start-strong/25082_Start-Strong-factsheet-1_v2.pdf).
- h See [www.education.vic.gov.au/childhood/parents/kindergarten/Pages/fees.aspx](http://www.education.vic.gov.au/childhood/parents/kindergarten/Pages/fees.aspx).
- i See [www.education.vic.gov.au/childhood/parents/kindergarten/Pages/earlystart.aspx](http://www.education.vic.gov.au/childhood/parents/kindergarten/Pages/earlystart.aspx).
- j See <https://www.qld.gov.au/families/babies/childcare/pages/rebates>.
- k See <https://qed.qld.gov.au/earlychildhood/families/remote-kindergarten-pilot>.
- l See <http://ppr.det.qld.gov.au/education/community/Pages/Pre-Prep-in-State-Schools-in-Identified-Indigenous-Communities.aspx> and <http://ppr.det.qld.gov.au/education/community/Pages/Pre-Prep-in-State-Schools-in-Identified-Indigenous-Communities.aspx>.
- m See PC (2018).
- n See <https://www.sa.gov.au/topics/education-and-learning/early-childhood-education-and-care/preschool-and-kindergarten>.
- o See <https://www.education.wa.edu.au/kindilink>.
- p See <https://www.education.tas.gov.au/about-us/projects/working-together-3-year-olds/>.
- q See <https://nt.gov.au/learning/early-childhood/age-your-child-goes-to-child-care-and-preschool>.
- r See [https://www.education.act.gov.au/school\\_education/aboriginal-and-torres-strait-islander-education](https://www.education.act.gov.au/school_education/aboriginal-and-torres-strait-islander-education).
- s See [https://www.education.act.gov.au/\\_\\_data/assets/pdf\\_file/0005/912272/ATSI-Education-Report-FA-web.pdf](https://www.education.act.gov.au/__data/assets/pdf_file/0005/912272/ATSI-Education-Report-FA-web.pdf).



**Table 2** Service providers with an early childhood education program delivered to 4–5-year-olds, percentage in each category, 2017

<b>Preschool program</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>SA</b>	<b>WA</b>	<b>Tas</b>	<b>NT</b>	<b>ACT</b>	<b>Australia</b>
Service providers with a preschool program delivered by a qualified teacher	100	100	100	100	100	100	79	100	99
<i>Preschool</i>	23	47	28	51	62	64	43	38	38
<i>Government</i>	4	9	6	47	45	47	39	36	17
<i>Nongovernment</i>	18	37	22	4	18	17	4	2	22
Community	18	34	21	1	0	0	0	0	17
Private for profit	0	0	0	0	0	0	0	0	0
Independent schools	0	3	1	2	8	8	2	2	3
Catholic schools	0	0	0	1	9	9	2	0	2
<i>Preschool program in long day-care centre</i>	77	53	71	49	38	36	36	62	61
<i>Government</i>	7	4	1	8	2	4	1	0	4
<i>Nongovernment</i>	71	50	71	40	36	32	35	62	57
Service providers with a preschool program not delivered by a qualified teacher	0	0	0	0	0	0	21	0	1
Total service providers with a preschool program	100	100	100	100	100	100	100	100	100

Source: Authors' calculations based on ABS (2017a:Appendix 1, Table A2)

## Structure of this report

The remainder of this report is structured as follows:

- ‘Data sources and measurement’ examines issues associated with measuring preschool participation among 3-year-olds, and the strengths and limitations of key data sources.
- ‘National, state and territory trends in preschool participation among 3-year-olds’ describes national, state and territory trends in preschool participation rates for Indigenous and non-Indigenous children, drawing on census data from 2006, 2011 and 2016. Data from the 2016 NECECC are used to look at participation in preschool programs in different settings.
- ‘Regional differences in preschool participation among Indigenous 3-year-olds’ compares rates of preschool participation among Indigenous 3-year-olds across regions.
- ‘Indigenous 3-year-old preschool participation rates by parental employment and household income’ looks at the family and household context of preschool participation.
- ‘Discussion and concluding comments’ provides a discussion of our findings and implications.

## Data sources and measurement

A detailed discussion of data sources and measurement is provided in our previous 2016 Census paper *Preschool participation* (Crawford & Biddle 2018:16–21). In that paper, we discussed the strengths and limitations of the census and the NECECC – the main sources of data about preschool participation for Indigenous and non-Indigenous children. Census information about preschool attendance is obtained by self-report from householders, while NECECC information is obtained from service providers delivering preschool education programs to enrolled children aged 3–6 years. Our analysis does not examine whether children attended the service regularly, or the total duration in months or years of their attendance.

We previously discussed other challenges associated with measuring preschool participation (focusing on 4–5-year-olds). For example, using generally available census datasets, it is not possible to determine whether a child is in the year before full-time schooling, although such information could potentially be derived from the

child’s month of birth and state or territory of residence, given jurisdictional variation in school starting ages (e.g. see ABS [2017a]).

Some of these issues also apply when considering preschool participation among 3-year-olds. For example, based on age (in years) alone (the information readily available from the census), it is impossible to identify children who would not be starting school for 2 years. Including only 3-year-olds understates the actual number of children who would potentially be eligible for 2 years of preschool, but including 4-year-olds would include many who would be starting school in the following year. For the purposes of this paper, we focus on 3-year-olds. Other data limitations referred to in our previous paper include quality of information about Indigenous status and identification change.

However, the following issues might apply differently when measuring preschool participation among 3-year-olds.

In the previous paper, we noted that the NECECC, which essentially obtains information from providers’ administrative systems, covers early childhood education programs in dedicated preschool services and long day-care centres. In the census, preschool participation is framed as attendance at an educational institution, and there is no explicit reference to preschool programs provided within long day-care centres. It therefore seemed likely that the census may undercount preschool participation among 4–5-year-olds. Even so, our comparison of data from the 2016 Census and the 2016 NECECC showed that, for 4–5-year-olds, the census question appeared to capture much attendance at preschool programs, regardless of the setting. However, whereas preschool attendance for 4-year-olds is a long-established social norm in Australia, the same does not apply to 3-year-olds. For parents of 3-year-olds attending long day care, there may be more uncertainty about whether their child is attending a preschool program, even though these services have mandatory educator–child ratios and half the educators are required to have, or to be working towards, an approved diploma-level qualification (Sheppard 2015). Attendance at a preschool program may therefore be underreported in the census to a greater extent for 3-year-olds than for 4-year-olds.

However, certain jurisdictions (New South Wales, Victoria, South Australia and the Australian Capital Territory – see Table 1) have programs that explicitly support preschool participation for all 3-year-old Aboriginal and Torres Strait Islander children. Parents of

3-year-old Indigenous children in these jurisdictions may therefore have less uncertainty about whether their children are attending preschool, or a preschool program, than other parents of 3-year-olds. This would be reflected in greater alignment of 2016 Census and 2016 NECECC data for Indigenous 3-year-olds than for their non-Indigenous counterparts.

Obtaining a denominator to calculate the preschool participation rate is simpler for 3-year-olds. In the case of 4–5-year-olds, it is difficult to estimate how many are ‘preschool eligible’ because of jurisdictional differences in school starting ages. In contrast, 3-year-olds are not eligible to attend full-time school, so the whole population of 3-year-olds can be considered ‘preschool eligible’. The formula for the preschool participation rate for 3-year-olds can therefore be expressed as follows:

$$\text{Preschool participation rate for 3-year-olds (\%)} = \frac{\text{Number of 3-year-olds attending preschool}}{\text{Number of 3-year-olds in the population}} \times 100$$

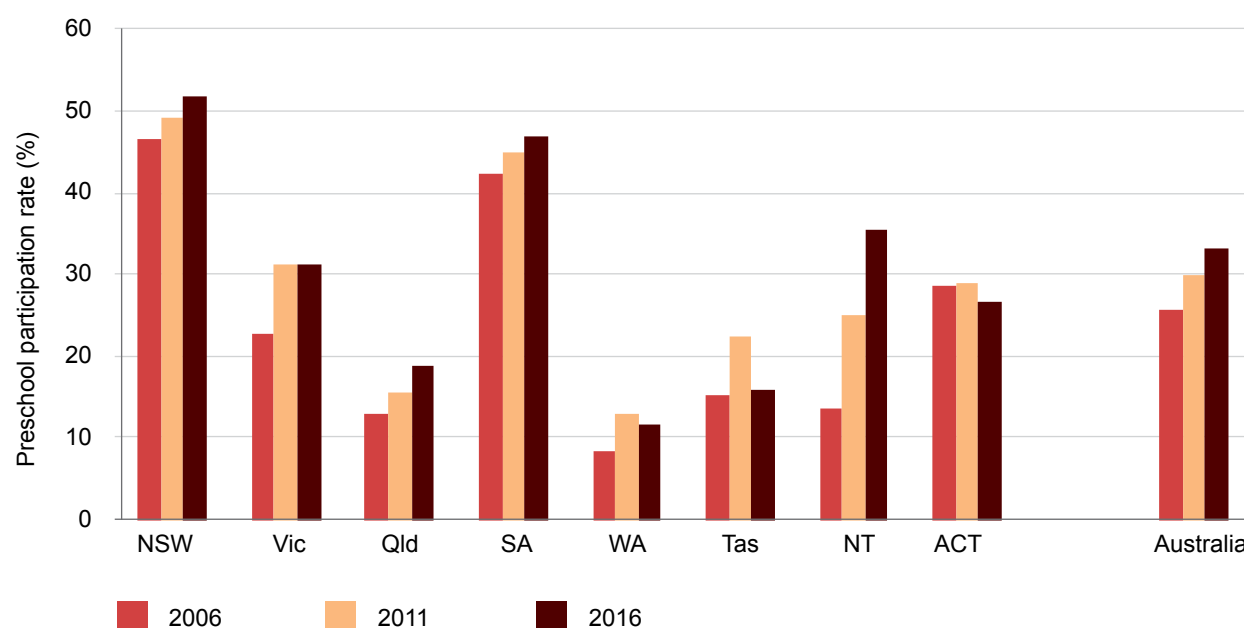
Finally, it should be noted that in some jurisdictions (particularly Western Australia, Tasmania and the Australian Capital Territory), the number of 3-year-olds attending preschool is small, so relatively small changes in the number from census to census can have a large effect on the participation rate.

## National, state and territory trends in preschool participation among 3-year-olds

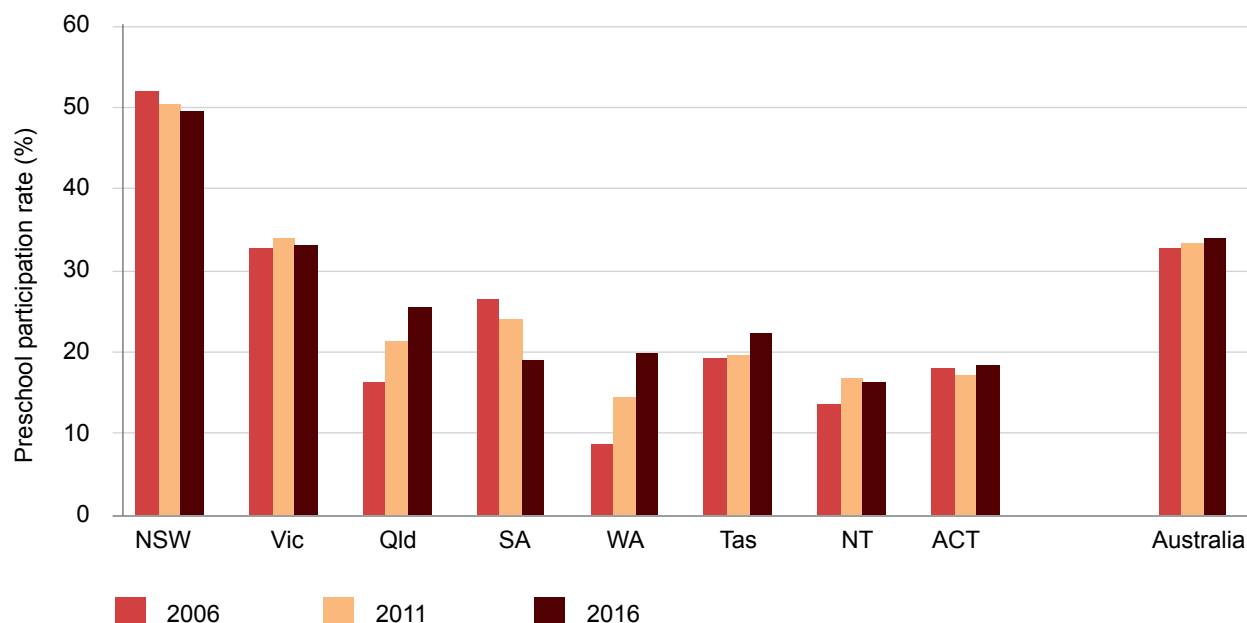
Similar to the trends in the preschool participation rate among 4–5-year-olds not already attending school (Crawford & Biddle 2018), analysis of census data for the decade 2006–16 shows that national rates of preschool participation among Indigenous 3-year-olds have increased substantially. The national preschool participation rate among 3-year-old Indigenous children increased from 26% in 2006 to 33% in 2016, on a par with the 2016 rate of 34% among their non-Indigenous counterparts (Figures 1 and 2).

There is greater variation from jurisdiction to jurisdiction in preschool participation rates among Indigenous 3-year-olds than among Indigenous 4–5-year-olds. Overall, rates of preschool participation among Indigenous 3-year-olds were highest in New South Wales and South Australia (this was consistent across the decade). There was a marked increase in the preschool participation rate of Indigenous 3-year-olds in the Northern Territory between 2006 and 2011, and between 2011 and 2016. Similarly, for Indigenous 4–5-year-olds, the most notable increase in the

**Figure 1** Preschool participation rates among 3-year-old Indigenous children, 2006, 2011 and 2016



Source: Authors' calculations using the 2006, 2011 and 2016 Censuses of Population and Housing, ABS TableBuilder data

**Figure 2** Preschool participation rates among 3-year-old non-Indigenous children, 2006, 2011 and 2016

Source: Authors' calculations using the 2006, 2011 and 2016 Censuses of Population and Housing, ABS TableBuilder data

preschool participation rate occurred in the Northern Territory (Crawford & Biddle 2018).

There are also more noticeable jurisdictional differences in the preschool participation rates of Indigenous and non-Indigenous 3-year-olds than among their counterparts aged 4–5 years. For example, in South Australia, the Northern Territory and the Australian Capital Territory, preschool participation rates are markedly higher among Indigenous 3-year-olds than among non-Indigenous 3-year-olds. In Queensland, Western Australian and Tasmania, the reverse is true, with preschool participation rates being lower among Indigenous 3-year-olds than among their non-Indigenous counterparts.

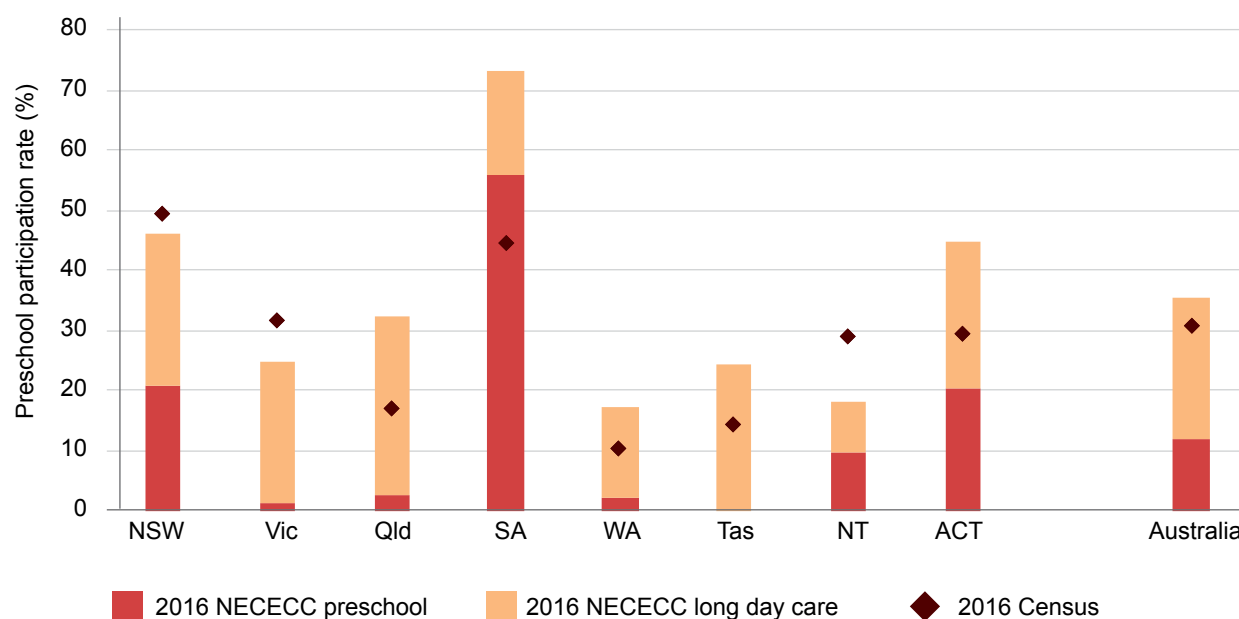
As noted under 'Data sources and measurement', in jurisdictions such as Western Australia, Tasmania and the Australian Capital Territory, the number of 3-year-olds attending preschool is relatively small, so changes from census to census in these jurisdictions are likely to be more variable and should be interpreted with caution.

Also, as discussed in the previous paper (Crawford & Biddle 2018), it is important to interpret our findings in the context of the different models of preschool delivery that predominate in different jurisdictions. This is illustrated by a comparison of 2016 Census and 2016 NECECC data, shown in Figures 3 and 4

(similar to that undertaken in our previous paper – see Crawford & Biddle [2018], Appendix 1). This comparison suggests – again, similar to our previous analysis in relation to 4–5-year-olds – that the Census captures at least some participation in preschool programs beyond traditional preschool settings. However, as expected for the reasons outlined under 'Data sources and measurement', there is greater alignment between the 2016 Census and the 2016 NECECC preschool participation rates for Indigenous 3-year-olds than for non-Indigenous 3-year-olds. The vast majority (more than 90%) of non-Indigenous 3-year-olds attending a preschool program were attending in long day care (Figure 4). In comparison, about 66% of Indigenous 3-year-old preschoolers were attending a dedicated preschool (Figure 3).

Comparing Figures 3 and 4 shows that the two data sources are more divergent for the non-Indigenous population than for the Indigenous population. This illustrates the challenges often associated with making meaningful comparisons of Indigenous and non-Indigenous populations – for example, in the context of the Closing the Gap policy (e.g. see analysis in Biddle et al. [2017b]). For the purposes of this paper, focusing on preschool attendance among Indigenous 3-year-olds, the greater alignment of 2016 Census and 2016 NECECC data for this population provides a degree of confidence in the results of our analyses.

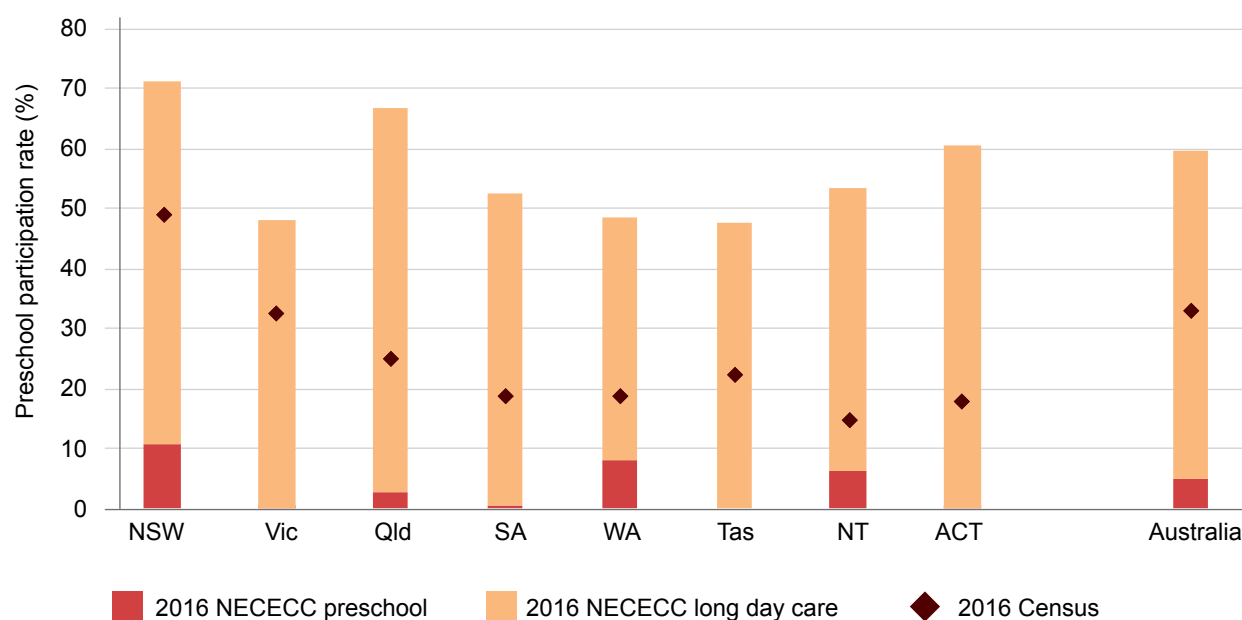
**Figure 3** Preschool participation rates among 3-year-old Indigenous children, 2016 Census (adjusted) and 2016 NECECC



NECECC = National Early Childhood Education and Care Collection

Sources: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data; ABS (2017b); *Preschool education, Australia, 2016*, ABS TableBuilder data, Children enrolled in a preschool program, 2016 – new linking method)

**Figure 4** Preschool participation rates among 3-year-old non-Indigenous children, 2016 Census (adjusted) and 2016 NECECC



NECECC = National Early Childhood Education and Care Collection

Sources: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data; ABS (2017b); *Preschool education, Australia, 2016*, ABS TableBuilder data, Children enrolled in a preschool program, 2016 – new linking method)

## Regional differences in preschool participation among Indigenous 3-year-olds

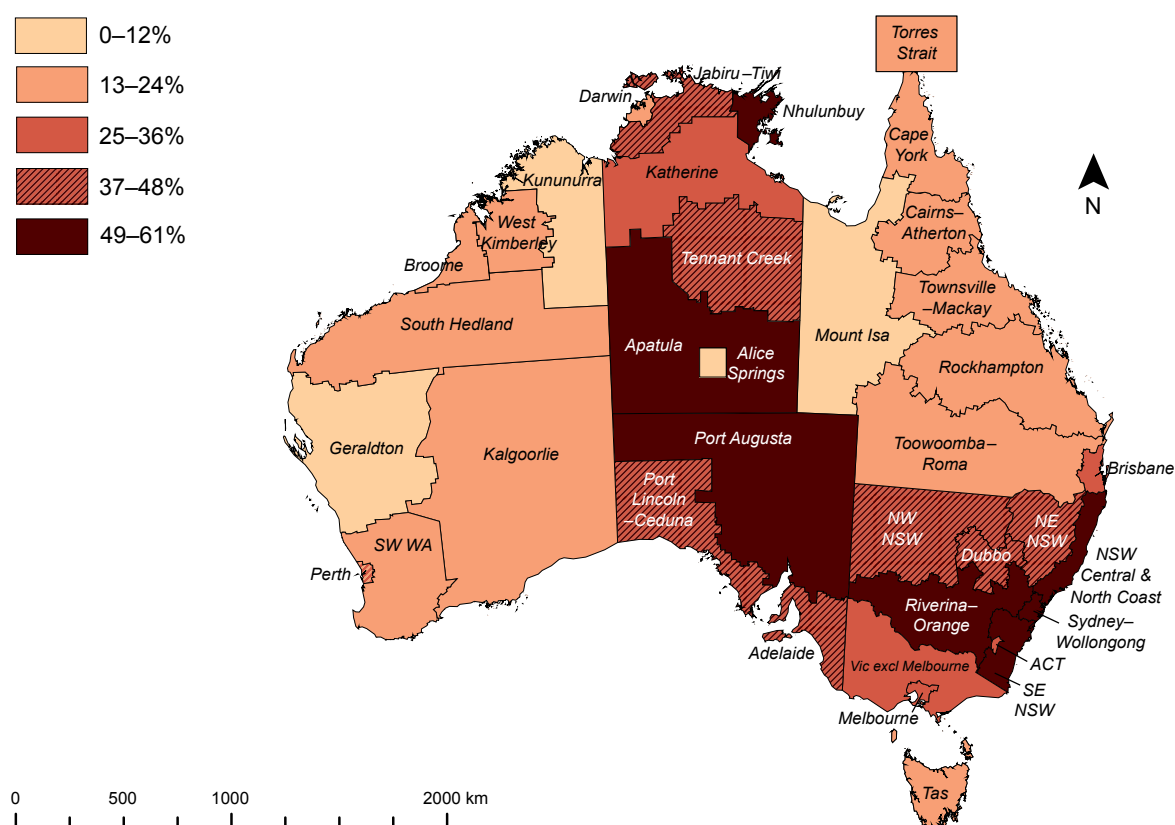
There were some similarities and some differences in the regional distributions of preschool participation rates among 3-year-olds (Figure 5) compared with 4–5-year-olds (see Crawford & Biddle [2018]:Figure 6), based on analysis of 2016 Census data. The main findings of this analysis are as follows:

- Preschool participation rates of Indigenous 4–5-year-olds were relatively high in most regions of Western Australia (except West Kimberley), but preschool participation rates of Indigenous 3-year-olds were relatively low in most regions of Western Australia (the KindiLink program – see Table 1 – began in 2016 as a pilot in 38 primary schools).
- Preschool participation rates of both Indigenous 4–5-year-olds and Indigenous 3-year-olds tended to be relatively high in most regions of New South Wales, South Australia and the Northern Territory.

- In Victoria, preschool participation rates were relatively high among Indigenous 4–5-year-olds.
- Preschool participation rates were relatively high in the Torres Strait region and Cape York among Indigenous 4–5-year-olds, but were relatively low throughout Queensland among Indigenous 3-year-olds.
- Preschool participation rates among both Indigenous 3-year-olds and Indigenous 4–5-year-olds in Tasmania were relatively low.

In summary, preschool participation rates of Indigenous 3-year-olds were lower in jurisdictions – Queensland, Western Australia and Tasmania – that lacked an established, widely available program to support their attendance (Table 1). In two of these states – Queensland and Tasmania – preschool participation rates were also relatively low among Indigenous 4–5-year-olds. In Western Australia, preschool participation rates of Indigenous 4–5-year-olds were relatively high.

**Figure 5** Preschool participation rates among 3-year-old Indigenous children, 2016 Census



Source: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data

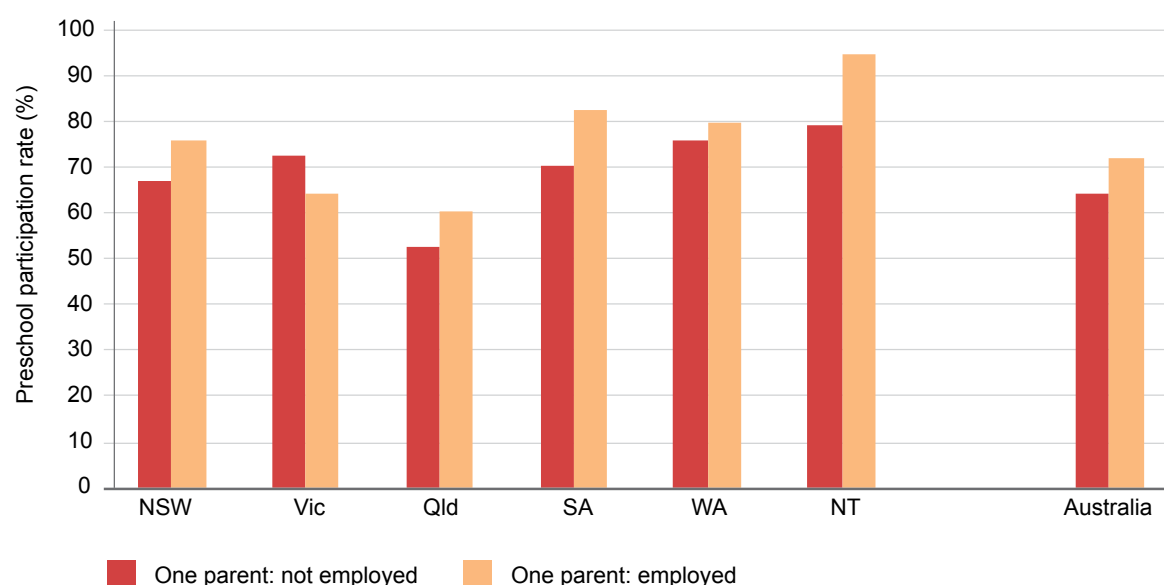


## Indigenous 3-year-old preschool participation rates by parental employment and household income

In our previous paper, we showed that, among Indigenous children aged 4–5 years, the preschool

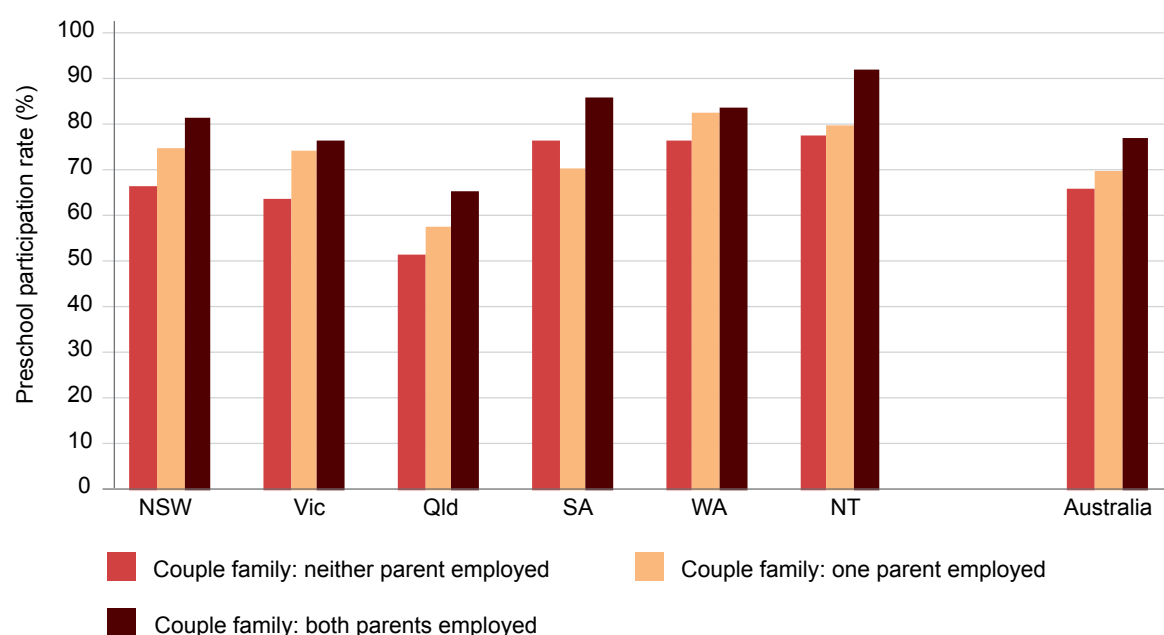
participation rate nationally was lowest in families where no parent was employed (Crawford & Biddle 2018). This pattern is true within most jurisdictions (Tasmania and the Australian Capital Territory are excluded from this discussion because of the relatively small number of Indigenous 3-year-olds attending preschool in these jurisdictions<sup>2</sup>). The results are shown separately for one-parent families (Figure 6) and couple families (Figure 7).

**Figure 6** Preschool participation rates among 4–5-year-old Indigenous children in one-parent families, 2016 Census



Source: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data

**Figure 7** Preschool participation rates among 4–5-year-old Indigenous children in couple families, 2016 Census

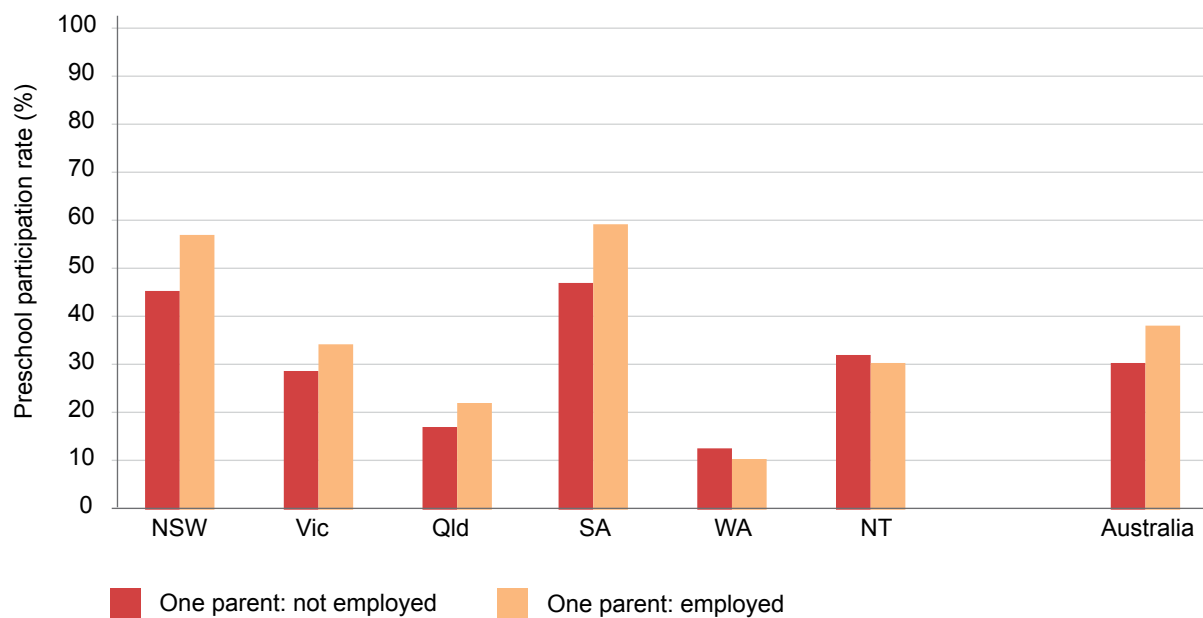


Source: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data

In contrast, in Western Australia, the Northern Territory and South Australia, preschool participation rates of 3-year-old Indigenous children among couple families where no parent was in paid employment were at least

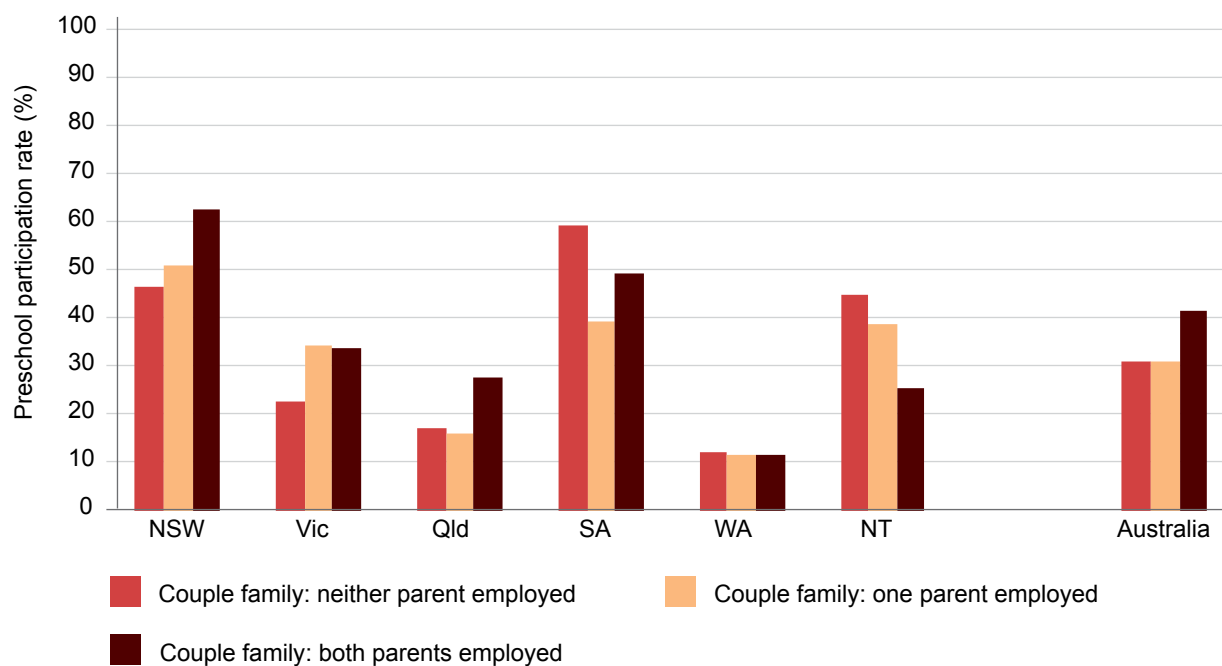
on a par with, or higher than, preschool participation rates among families with an employed parent (Figures 8 and 9).

**Figure 8** Preschool participation rates among 3-year-old Indigenous children in one-parent families, 2016 Census



Source: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data

**Figure 9** Preschool participation rates among 3-year-old Indigenous children in couple families, 2016 Census



Source: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data

It is interesting to contrast New South Wales and South Australia in particular. Preschool participation rates among Indigenous 3-year-olds in these two states are higher than in other jurisdictions. The difference is that in New South Wales (in couple families) the preschool participation rate is higher in families with an employed parent, while in South Australia (in couple families) the preschool participation rate is higher in families where neither parent is employed. This may be attributable to a range of factors, including:

- different demographic characteristics of the Indigenous populations in New South Wales and South Australia, such as the size of the 'Indigenous middle class' (e.g. see Biddle & Markham [2017])
- different geographical and social contexts
- differences in early childhood education and care funding and delivery models for children in the year before full-time schooling (see Table 1). In New South Wales, the 'nongovernment' model applies – service provision is more mixed, and includes state government-funded services provided by nongovernment organisations, preschool programs provided in long day-care centres, and a small proportion of state government-owned services. In South Australia, the 'government' model applies – most preschool services are owned, funded and

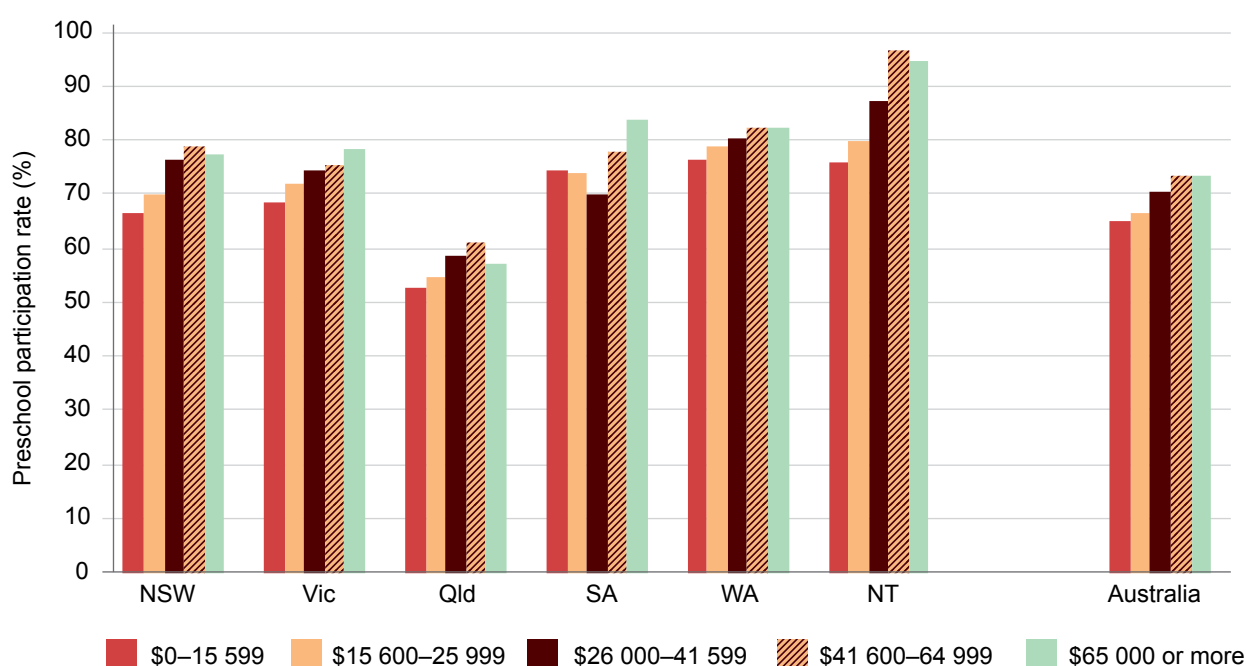
delivered by the state or government (Raban & Kilderry 2017)

- differences in the policies specifically aimed at supporting preschool participation among 3-year-old Indigenous children (see Table 1).

Examining preschool participation rates among Indigenous children by household income provides another perspective on access to preschool services among those living in relatively disadvantaged circumstances (Figures 10 and 11). Even among families where one or both parents are employed, low household incomes may affect their ability to access services, either directly (e.g. because of fees) or indirectly (e.g. by constraining their access to other resources such as transport). Again, Tasmania and the Australian Capital Territory are excluded from this discussion because of the small number of 3-year-olds attending preschool.

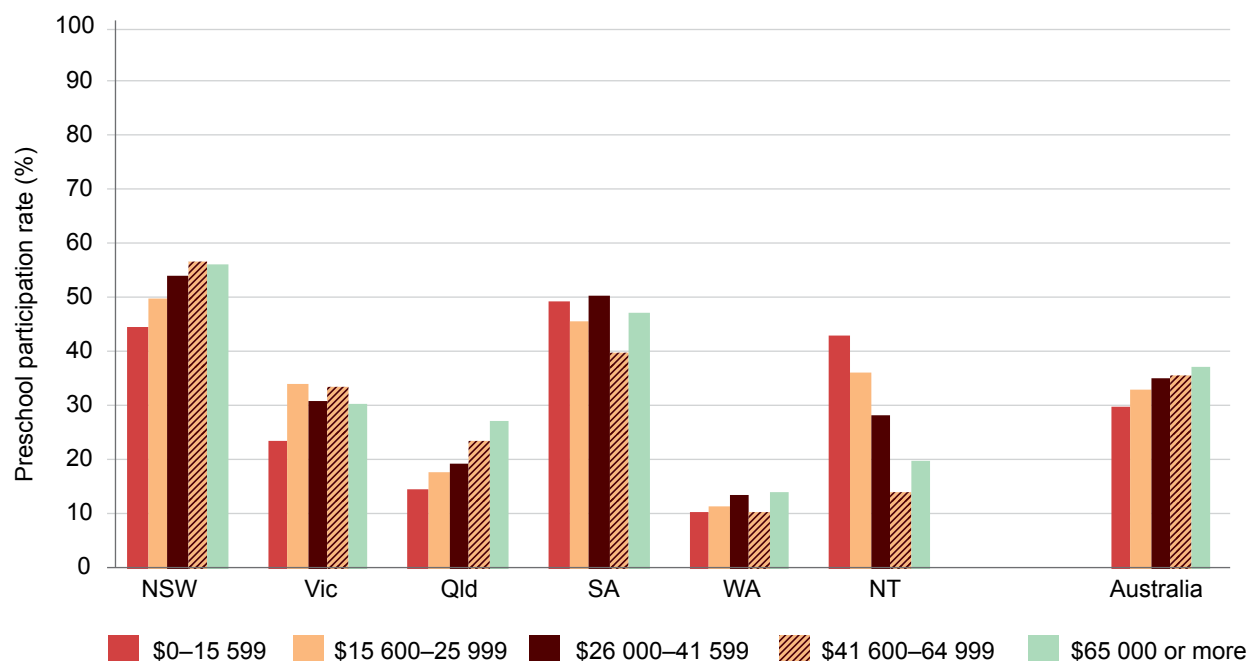
In most jurisdictions, preschool participation rates among Indigenous 4–5-year-olds generally increase with increasing household income, even though the rate sometimes drops back slightly in the highest household income category (Figure 9). In contrast, for Indigenous 3-year-olds, in South Australia and the Northern Territory, the preschool participation rate is highest among children living in households with the lowest household incomes (Figure 9).

**Figure 10** Preschool participation rates among 4–5-year-old Indigenous children by equivalised household income, 2016 Census



Source: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data

**Figure 11** Preschool participation rates among 3-year-old Indigenous children by equivalised household income, 2016 Census



Source: Authors' calculations using the 2016 Census of Population and Housing, ABS TableBuilder data

Again, this suggests that policies aimed at increasing preschool participation among Aboriginal and Torres Strait Islander 3-year-olds in South Australia and the Northern Territory (see Table 1) may be achieving that aim. In New South Wales, Victoria, Queensland and Western Australia, preschool participation rates are generally higher among those living in higher-income households. New South Wales, Victoria and Queensland are characterised by the 'nongovernment' model of early childhood education service delivery, whereas Western Australia is currently piloting a program for 3-year-olds to attend preschool.

Our analyses support two broad conclusions:

- As preschool participation rates among Indigenous 4–5-year-olds increase, it appears to be children from the most socioeconomically disadvantaged backgrounds who are not participating.
- In South Australia and the Northern Territory, preschool participation rates of Indigenous 3-year-olds are higher among those from socioeconomically disadvantaged backgrounds. This may be at least partially attributable to the service delivery models in these jurisdictions, combined with initiatives in these aimed at supporting preschool participation among Indigenous 3-year-olds (see Table 1).

## Discussion and concluding comments

The Prime Minister's 2018 Closing the Gap report showed that the gap between the early childhood participation rates of Indigenous and non-Indigenous children is closing and is on track to meet the target for 95% of all Indigenous 4-year-olds to be enrolled in early childhood education by 2025.

Analysis presented in our previous paper showed that, in 2016, preschool participation rates among Indigenous children aged 4–5 years were on a par with, or exceeded, those among their non-Indigenous counterparts with similar demographic and socioeconomic characteristics. We contrasted this with results of the 2011 Census showing that preschool participation rates were generally lower among Indigenous children than among non-Indigenous children. Our analysis presented in this paper suggests that policies directed at supporting early access to preschool for Aboriginal and Torres Strait Islander children may be achieving their aim, because participation has increased, particularly among those living in the lowest-income households or in households where there is no employed parent.

From a research perspective, it is important to understand the extent to which Indigenous preschool students are not only attending preschool, but benefiting from it cognitively, noncognitively, socially and culturally. In the context of calls for Australian governments to support universal access to early childhood education for 3-year-old children, it is important to ensure that the content and teaching methodology of the preschools that Indigenous students attend are attentive of, and respectful towards, Indigenous needs and aspirations.

One feature of early childhood education that is emerging in state and territory government policy is support for families as first teachers, and parental engagement in children's early learning. Examples include playgroups and jurisdictional policies that engage parents in their children's early learning experiences, such as the Western Australian KindiLink program and the Australian Capital Territory's program for children from birth to 3 years in Koori preschools (Table 1). Although children's transition to school has received much research attention, there is also a need for a continuing focus on children's transitions into formal early learning settings, and the interactions between multiple entities that make up children's social environments, such as family, community and early childhood services.

There is still only a small body of research examining the benefits of participation in early childhood education and care among Indigenous children. As highlighted by Harrison et al. (2012), there is a need for more rigorous evaluation of targeted early learning programs in Australia. To our knowledge, there is no published research on 3-year-old preschool that focuses explicitly on Indigenous children. Although this paper has only looked at levels and patterns of participation, it may provide a basis for rigorous experimental or quasi-experimental analysis of the effects of preschool, and how these effects vary across the Indigenous population and by relevant characteristics of the preschools themselves.

## Notes

1. [www.education.gov.au/review-achieve-educational-excellence-australian-schools](http://www.education.gov.au/review-achieve-educational-excellence-australian-schools)
2. The total number of Indigenous 3-year-olds attending preschool was less than 100 in Tasmania and the Australian Capital Territory.

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