



The reach of Playgroups across Australia and their benefits for children's development

A comparison of 2012 and 2015 AEDC data



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1. EXECUTIVE SUMMARY

Despite international evidence demonstrating the great importance of play for children's development, there is limited research quantifying the specific impact of attending playgroup on childhood development and wellbeing. The Telethon Kids Institute was engaged by Playgroup Australia to help fill this gap in knowledge by exploring the impact of playgroup on a child's early development. This follows on from a comprehensive quantitative and qualitative evaluation previously conducted by the Institute throughout 2014 to 2016, examining the barriers and facilitators that influence Community Playgroup attendance, and the impact of attending playgroup on a child's early development based on a national dataset measuring child development for all Australian children who started in school in 2012 (the Australian Early Development Census or AEDC) [1, 2]. The AEDC is conducted triennially, and so with the recent release of the 2015 AEDC data, the current report aims to again explore trends in playgroup attendance and the impacts of playgroup on children's development, drawing comparisons between findings across both 2012 and 2015 cohorts.

Specifically, the objectives of the current report were to explore:

1. Changes in playgroup participation for Australian children between 2012 and 2015 nationally and within specific jurisdictions and population sub-groups.
2. The impact of playgroup participation on children's early development, comparing results between 2012 and 2015 cohorts.
3. The impact of playgroup attendance on children's transition to school.

Results from both 2012 and 2015 AEDC data demonstrate that children who attend playgroup during early childhood have significantly better development when they start school compared to those who do not attend playgroup, and that while a considerable number of children across Australia are attending playgroup prior to school, there remain opportunities to increase the reach of playgroups to extend these benefits to a greater number of children.

Key findings about the reach of playgroups across Australia and playgroup participation for different sub-groups of children are:

- Nationally, 2015 AEDC data demonstrates that 35.5% of children attended playgroup prior to school, half a percentage less than that observed amongst children who started school in 2012.
- Between 24% and 68% of children attended playgroups across the different states and territories of Australia. Playgroup attendance decreased amongst the 2015 cohort slightly in New South Wales, Queensland and South Australia, but increased in all other jurisdictions.
- Playgroup attendance was higher for children living in more regional and remote areas of Australia than for children living in major cities, and this pattern was consistent across both 2012 and 2015 cohorts of children.
- Playgroup attendance increased incrementally for children living in less socio-economically disadvantaged communities from 26% in the most disadvantaged communities to 44% in the least disadvantaged communities. Again, this pattern was observed in 2012 and 2015 data.



- Boys, Indigenous children and children with a language background other than English were less likely to attend playgroup, and this pattern was consistent across both 2012 and 2015 cohorts.
- Children who spoke English only were considerably more likely to have attended playgroup than children with a language background other than English, however the percentage of children attending playgroup with a language background other than English was considerably higher amongst the 2015 cohort, compared to children who started school in 2012.
- Playgroups continue to have a wide reach across the country, impacting one in four disadvantaged children and close to one in two less disadvantaged Australian children.

Importantly, results from both 2012 and 2015 AEDC data also demonstrate that playgroup is universally beneficial to *all* children from a range of different backgrounds. Specifically, findings from analyses on the impact of playgroup on child development demonstrate that:

- The benefits of playgroup were seen across all domains of child development: physical, social, emotional, language and cognitive development, and communication.
- Children who do not attend playgroups were 1.70 times more likely to be developmentally vulnerable on one or more domains of the AEDC at school entry, after adjusting for socio-economic and demographic differences between the two groups.
- Results from 2012 and 2015 data showed that playgroups are universally beneficial for children from a range of different backgrounds, with adjusted odds ratios ranging from 1.55 to 1.82 for different population groups for children from the 2015 AEDC cohort.
- Across both 2012 and 2015 cohorts, large differences between jurisdictions in the beneficial impacts of playgroups were observed, with adjusted odds ratios ranging from 1.24 in the Northern Territory to 2.57 in Tasmania for children who started school in 2015.

As well as looking at child development outcomes from the AEDC, we also explored teacher judgements about how well each child was transitioning to school. Results from the 2015 AEDC data confirmed that children who did not attend a playgroup prior to school were almost two times more likely to be having trouble in their school transition compared to children who attended playgroup (OR = 1.82). This finding adds further evidence that playgroup attendance is associated with better outcomes for children when they start their formal schooling.

This research provides Playgroup Australia and the Playgroup Associations with insights about recent changes in playgroup participation across Australia. Moreover, this evaluation fills the gap in knowledge around the impact of playgroup attendance on early child development and school transitions in Australia, and provides Playgroup Australia with a strong evidence-base on which to advocate for the importance of playgroups in the lives of Australian families, and the positive impacts that can be experienced by all Australian children when participating in playgroup.



2. INTRODUCTION

2.1 Background

The importance of play for a child's development is well established, indeed, play is considered so important for childhood development that it has been recognised by the United Nations High Commission for Human Rights as a basic right of every child [3]. Accordingly, parents and caregivers should be encouraged to provide opportunities for their children to engage in regular, unstructured play, however evidence suggests that today's children are engaging in much less play with other children than previous generations due to a range of factors, such as demographic changes in family structures, an increased focus on literacy and numeracy, an increase in passive entertainment, as well as the perception of a lack of safe outdoor areas for children to play [4].


Playgroups provide a safe environment where children can play with similar aged children on a regular basis, and as such they offer an important opportunity for parents to assist in their child's development. In addition, playgroups also have a range of positive effects on parents and caregivers which are likely to translate into better outcomes for children. Community Playgroups, led by parents and carers, are one of the most common forms of playgroup. These gatherings for parents and young children under school age generally meet once a week for one or two hour sessions. They provide an opportunity for children to learn through unstructured play and enable parents to develop social networks and improve parenting skills [5-7]. Playgroup attendance is likely to have an impact on child development through several pathways. Stimulating play environments have well known positive impacts on children as detailed above, but in addition, community playgroups also have a range of positive effects on parents and caregivers which are likely to translate into better outcomes for the child. For instance, parents attending playgroup with their children report reduced social isolation, improved parenting skills and self-confidence, increased knowledge of relevant community services, and a greater awareness of their child's needs [5, 8, 9].

Though the importance of play is clear, there is limited research quantifying the specific impact of attending playgroup on childhood development and wellbeing. The Telethon Kids Institute was engaged by Playgroup Australia to explore the impact of playgroup on a child's early development. This follows on from a comprehensive quantitative and qualitative evaluation previously conducted by the Institute throughout 2014 to 2016, examining the barriers and facilitators that influence Community Playgroup attendance, and the impact of attending playgroup on a child's early development [1, 2].

2.2 Findings from the initial evaluation

Throughout 2014 to 2016, the Institute conducted a comprehensive quantitative and qualitative evaluation of the Community Playgroup Program. The qualitative component was conducted in 2014, and sought to explore the factors that have contributed to the gradual decline in membership of Community Playgroups since 2006 [2]. Findings from focus groups and interviews demonstrated a number of factors that families identified as influencing their decisions about which early childhood services and activities they attend with their children. These included factors such as playgroup session





timing and frequency, parents' work schedules, available transport, the social environment of a playgroup, and access to playgroup information. Overall, the qualitative findings echoed the literature, particularly in terms of the benefits of playgroup for parents and their children. Parents identified the benefits playgroup had for both their children (e.g., encourages child learning and development) and themselves (e.g., building social connections and support networks). Community Playgroups in Australia were said to be meeting the needs of families and were identified as an important and valuable activity that both parents and children looked forward to on a weekly basis.


The quantitative component of the evaluation had two key aims [1]. First, it sought to understand playgroup attendance across Australia. Results demonstrated that nationally, 36% of children attended playgroup prior to starting school, with attendance rates ranging from 30% to 66% across jurisdictions. Playgroup attendance was higher for children living in more regional and remote areas of Australia than for those living in major cities, while boys, Indigenous children and children with a language background other than English were less likely to attend playgroup. Playgroup had a wide reach impacting about 20% of disadvantaged children and almost 40% of less disadvantaged Australian children, with playgroup attendance increasing incrementally for children living in less socio-economically disadvantaged communities from 26% in the most disadvantaged communities to 44% in the least disadvantaged communities.

The second objective of the qualitative component of the evaluation was to explore the 2012 AEDC data in order to understand the impact of attending playgroup on children's early development. Results showed that children who had attended playgroup prior to school had better development than those who had not, and these benefits were observed across all domains of child development (physical, social, emotional, language and cognitive development, and communication). Specifically, children who did not attend playgroup were 1.78 times more likely to be developmentally vulnerable on one or more domains of the AEDC at school entry, after adjusting for socio-economic and demographic differences. Large differences were found in the beneficial impacts of playgroup attendance across jurisdictions, with adjusted odds ratios ranging from 1.28 in the Australian Capital Territory to 2.71 in Tasmania. Overall, results demonstrated that playgroup was universally beneficial for children from a range of different backgrounds, with adjusted odds ratios ranging from 1.48 to 1.86 for different population groups.

2.3 Aims of the current report

Results from the initial evaluation provided Playgroup Australia and jurisdictional Playgroup Associations with insights into how they could best focus attention to increase memberships moving forward. Further, it filled gaps in knowledge around the impact of playgroup attendance on early childhood development in Australia, providing a strong evidence base on which to advocate for the importance of playgroup in the lives of Australian families, and the positive impacts that can be experienced by all Australian children when participating in playgroup.





Building on this initial evidence, the current report seeks to explore similar research questions using data from the 2015 AEDC, drawing comparisons between results from 2012 and 2015 data. This allows us to determine if rates of playgroup attendance across Australia have changed or remained similar over time, and understand if the findings around the positive impacts of playgroup on children’s development from the initial evaluation have remained constant for the next cohort of children. Two additional questions have been addressed in this report, which were not included in the previous report, as described below.

In addition to measuring child development, the AEDC data collection also explores how well the child is transitioning to school. The transition to school can be a challenging time for children and their families, and there are a range of reasons to think that children who have attended playgroups prior to school might benefit during this transition. These children may have had more opportunities to develop social skills such as co-operation, sharing, and taking turns, be more able to manage their emotions such as worries, sadness and frustration through repeated opportunities to practice these skills with other children, have better conversational skills such as waiting for a turn, and expressing themselves, and may have developed friendships with other children who will also be starting school at the same time. In this report, we explore differences between children who did and did not attend playgroups in how well they adapted to school.

One of the strengths of the AEDC data is that child development can be explored at a range of different geographical areas – nationally, state/territory, local government area, and suburb – and patterns of child development can be explored based on geographical or socio-economic factors. One way to explore these patterns is to look at every community within a state or territory, and plot the level of developmental vulnerability on 1 or more domains by the level of socio-economic disadvantage in that community. Given that teachers also provide information about children’s playgroup attendance during the AEDC collection, it is also possible to incorporate the community level playgroup attendance into these graphs to understand the relationship between all three factors. In this report, “bubble plots” for each jurisdiction are presented to show the relationship between child development, socio-economic disadvantage and playgroup attendance.

Specifically, this report addresses four questions:

1. Changes in playgroup attendance across Australia over time

The 2012 AEDC results suggested that about 36% of Australian children attended a playgroup prior to starting school. In this report, we explore whether participation for children who started school in 2015 has increased, decreased or remained constant. If there are changes between 2012 and 2015, do we see the same patterns across different states and territories, for children living in major cities compared with regional centres, and for children living in more and less socio-economically disadvantaged communities? Have there been big changes in playgroup attendance for some children (e.g. Indigenous children, children who speak English as a second language, and children who were born outside of Australia) but not others? This first question will help to provide insights into where the Playgroup Associations can best focus their attention to increase memberships moving forward.



2. The impact of playgroup participation on children's development

The 2012 AEDC results provided one of the first opportunities to explore the impacts of playgroup on children's development across Australia. This report focuses on children born a full three years later, and aims to see whether the benefits of playgroups can be confirmed in a different cohort of children. The playgroup sector in Australia has developed and adapted significantly over the past 10 years, so children in the 2012 AEDC cohort (born 2006/07) and children in the 2015 AEDC cohort (born 2009/10) may have had very different playgroup experiences to one another. As such, it is possible that there may be differences in the impacts of playgroups for these different groups of children. The impact of playgroup on child development was estimated separately for each of the jurisdictions providing both national and jurisdiction-specific evidence that Playgroup Australia and the Playgroup Associations can use when advocating for the importance of playgroups for children's development.

3. The impact of playgroup participation on children's transition to school

During the 2015 AEDC data collection, teachers were asked whether the child was making good progress in adapting to the structure and learning environment of the school. This item provides information about how well the child was transitioning to school, and we explored whether children who attended playgroup prior to school were more likely to be transitioning well than children who did not.

4. The relationship between playgroup participation, children's development and socio-economic disadvantage in communities

In some Australian communities, most of the children attend playgroup prior to starting primary school whereas other communities have almost no children who have had any playgroup experience. There are also substantial differences across jurisdictions with the 2012 AEDC data showing playgroup attendance ranged from 30% to 66% across states and territories of Australia. We explored each state and territory separately, and explored the percentage of children in each community who had attended playgroup prior to school as well as the level of socio-economic disadvantage and developmental vulnerability in one or more domains of the AEDC in the community.



3. METHOD

3.1 Research questions

Several different analyses were conducted to answer the four key research questions. These are described below.

1. Playgroup attendance across Australia, and changes between 2012 and 2015 cohorts.
2. The impact of playgroup on child development, and changes between 2012 and 2015 cohorts.
3. The impact of playgroup on children's transitions to school.
4. The relationship between playgroup participation, children's development and socio-economic disadvantage at a community level

To investigate **playgroup attendance across Australia** we utilised data from the 2015 Australian Early Development Census (AEDC) to estimate the number and percentage of children attending playgroups at the national level and within each of the states and territories. We additionally explored differences in playgroup attendance for children living in metropolitan, regional and remote areas of Australia, children living in areas of high and low socio-economic disadvantage, and children with different demographic characteristics such as boys and girls, and children with English as a Second Language. Attendance rates and patterns from the 2015 data were then compared to those observed in 2012 in the previous evaluation, in order to highlight any changes in playgroup attendance over time.

We investigated the **impact of playgroups on child development** by exploring the relationship between playgroup participation prior to school and children's development at school entry as measured by the 2015 Australian Early Development Census (AEDC). Results around impact were compared to those found in the initial evaluation using 2012 data, in order to determine if the positive impacts of playgroup on children's development were consistent for the 2015 AEDC cohort. Socio-demographic information about the child and the community where they lived, were used to adjust for differences between children who did and did not attend playgroups that might impact on their child development outcomes.

To explore the **impact of playgroup on children's transition to school** we utilised a single item from the 2015 AEDC collection (*"Would you say this child is making good progress in adapting to the structure and learning environment of the school?"*) as an indicator of the success of the child's school transition. Socio-demographic information about the child and the community where they lived, were used to adjust for differences between children who did and did not attend playgroups that might impact on their transition to school.



The **relationship between playgroup participation, children’s development and socio-economic disadvantage at a community level** was explored graphically. For each state and territory of Australia, we have created a “bubble plot” that shows the percentage of children who attended a playgroup prior to school, the percentage of children who were developmentally vulnerable, and the level of socio-economic disadvantage in the community. These graphs also clearly show the variability in playgroup participation for different communities within the jurisdiction.

3.2 Australian Early Development Census

In this section, we provide information on the Australian Early Development Census, which is the key data source used to measure playgroup attendance and child development. Appendix A provides detailed technical information on the methodology used to answer these three questions.

The Australian Early Development Census (AEDC) is a national census of early childhood development conducted once every three years on *all* children in their first year of full time schooling. In 2012, AEDC data were collected on 289,973 children and in 2015 data were collected on 302,003 children, providing a rich population wide data source. The AEDC is publicly available (www.aedc.gov.au) and provides data at the national and jurisdictional level, and community level. Information is available about children’s development on five developmental domains as shown in Figure 1.



Figure 1: Developmental domains measured in the AEDC



In this report, we focus primarily on the main summary indicator from the AEDC (vulnerable on 1 or more domains) but we also present information on the individual domains where possible.

In 2012 and 2015, teachers were asked whether each child in their class had attended playgroup prior to school (*“Did this child attend playgroup before entering full time school?”*). This item was used as the measure of playgroup participation throughout this report. It is important to note that teachers were not asked specifically about whether the child attended a community playgroup or a Playgroup Association run playgroup – instead they answered ‘Yes’ if they were aware that the child had attended any type of playgroup run by any organisation prior to starting school. As mentioned above, teachers also answered an item about the child’s transition to school (*“Would you say this child is making good progress in adapting to the structure and learning environment of the school?”*), and this was used to explore the relationship between playgroup attendance and school transitions.

4. PLAYGROUP PARTICIPATION – POPULATION ESTIMATES FROM THE AEDC

4.1 Playgroup participation in Australia

In the 2012 and 2015 Australian Early Development Census (AEDC) data collections, teachers were asked whether children attended playgroup before entering full-time school. Teacher responses from both 2012 and 2015 are presented in Table 1 below, with contrasts made for children living in each of the different states and territories. As was observed in 2012, many teachers did not know whether their students had attended playgroup prior to starting school. At the national level, teachers responded “don’t know” to this item for over 60% of children, and this varied from 48% for children living in Tasmania to 80% for children living in the Australian Capital Territory.

The variation in these figures is likely to be accounted for by jurisdictional differences in available playgroup programs and providers. For instance, in some jurisdictions (e.g. Tasmania) playgroups are provided as a government initiative through schools and this may impact how well informed teachers are of children’s playgroup attendance. Further, variation may also be accounted for by differences in transition practices across jurisdictions (i.e. variation in information sharing between early years and school programs). There was an overall increase in the percentage of “don’t know” responses between 2012 and 2015, particularly in Victoria, Queensland, ACT and the Northern Territory.

Table 1: Playgroup attendance for 2012 (n = 289,973) and 2015 (n = 302,003) AEDC cohorts

	Did the child attend playgroup before entering full time school?					
	2012			2015		
	Yes N (%)	No N (%)	Don't know N (%)	Yes N (%)	No N (%)	Don't know N (%)
Australia^a	42,952 (14.9)	76,293 (26.4)	169,342 (58.7)	40,743 (13.5)	73,999 (24.6)	186,250 (61.9)
NSW	10,483 (11.1)	27,429 (29.1)	56,324 (59.8)	9,318 (9.7)	29,078 (30.3)	57,558 (60.0)
VIC	10,530 (15.5)	13,560 (20.0)	43,654 (64.4)	9,988 (14.0)	11,056 (15.4)	50,543 (70.6)
QLD	9,957 (16.2)	21,300 (34.7)	30,040 (49.0)	8,716 (13.4)	20,253 (31.2)	35,956 (55.4)
WA	5,772 (18.0)	8,647 (27.0)	17,584 (54.9)	6,674 (19.8)	8,810 (26.2)	18,195 (54.0)
SA	3,114 (16.7)	2,214 (11.8)	13,365 (71.5)	2,946 (15.0)	2,150 (11.0)	12,502 (74.0)
TAS	2,133 (33.3)	1,087 (16.9)	3,195 (49.8)	2,247 (35.0)	1,083 (16.9)	3,082 (48.1)
ACT	516 (10.6)	987 (20.3)	3,365 (69.1)	369 (6.8)	703 (13.0)	4,327 (80.1)
NT	447 (13.4)	1,069 (32.1)	1,815 (54.5)	485 (14.1)	866 (25.2)	2,087 (60.7)

Note. ^a Data on playgroup attendance were missing for 1,386 children in 2012 and 1,011 children in 2015.

While many teachers selected “don’t know”, very few left this item blank with missing data on just over 1,000 children (< 1%) in the whole 2015 AEDC cohort. Given that “don’t know” was a viable option, we can be confident that those teachers who did not select this option had credible information about whether children attended playgroups.



There are two different ways to look at the statistics presented in Table 1. The first is to ignore the “don’t know” category and simply ask – what percentage of children living in each jurisdiction do we know attended playgroup at some stage prior to starting school? From the “Yes” column, it is clear that about 15% of Australian children attended playgroups prior to starting school in 2012, with this figure decreasing to 13.5% in 2015. In 2015, playgroup attendance was below the national average in New South Wales (9.7%), Queensland (13.4%), and the Australian Capital Territory (6.8%). Between 14% and 19.8% of children had attended playgroup in each of the other states and territories, again with the exception of Tasmania in which more than one third of all children attended playgroup before school entry.

The second method is to ask – of the children whose playgroup attendance status we know (i.e. the Yes and No columns in Table 1), what percentage of children attended playgroup prior to school? This approach takes into account the fact that teachers working in different jurisdictions were more or less likely to know whether their students attended playgroups, and gives a better population estimate of playgroup attendance. Table 2 below allows us to explore this second question¹.

Table 2: Playgroup attendance for 2012 (n = 119,245) and 2015 (n = 114,742) AEDC cohorts

	Did the child attend playgroup before entering full time school?					
	2012			2015		
	Yes N (%)	No N (%)	Total ^a N (%)	Yes N (%)	No N (%)	Total ^a N (%)
Australia	42,952 (36.0)	76,293 (64.0)	119,245 (100)	40,743 (35.5)	73,999 (64.5)	114,742 (100)
NSW	10,483 (27.7)	27,429 (72.3)	37,912 (100)	9,318 (24.3)	29,078 (75.7)	38,396 (100)
VIC	10,530 (43.7)	13,560 (56.3)	24,090 (100)	9,988 (47.5)	11,056 (52.5)	21,044 (100)
QLD	9,957 (31.9)	21,300 (68.1)	31,257 (100)	8,716 (30.1)	20,253 (69.9)	28,969 (100)
WA	5,772 (40.0)	8,647 (60.0)	14,419 (100)	6,674 (43.1)	8,810 (56.9)	15,484 (100)
SA	3,114 (58.4)	2,214 (41.6)	5,328(100)	2,946 (57.8)	2,150 (42.2)	5,096 (100)
TAS	2,133 (66.2)	1,087 (33.8)	3,220 (100)	2,247 (67.5)	1,083 (32.5)	3,330 (100)
ACT	516 (34.3)	987 (65.7)	1,503 (100)	369 (34.4)	703 (65.6)	1,072 (100)
NT	447 (29.5)	1,069 (70.5)	1,516 (100)	485 (35.9)	866 (64.1)	1,351 (100)

Note. ^a Children were excluded where playgroup attendance was missing or the teacher answered “don’t know”.

¹ All subsequent analyses in this report will exclude all children with “don’t know” or “missing” responses, and therefore be based on the sub-set of children in the 2012 and 2015 AEDC cohorts who have valid data on the playgroups question (n = 119,245 and n = 114,742, respectively).



Looking at the data in this way, at the national level playgroup attendance in 2015 was very similar to that in 2012, with 35.5% of children attending playgroup prior to school entry. Playgroup attendance in the 2015 cohort was below the national average in New South Wales (24.3%), Queensland (30.1%), and the Australian Capital Territory (34.4%). Attendance in the Northern Territory was just above the national average (35.9%), and well above the national average in Western Australia (43.1%) and Victoria (47.5%). Consistent with results from 2012, playgroup attendance was highest in South Australia and Tasmania, with almost 60% of children having attended playgroup prior to school in South Australia, and almost 70% having attended playgroup in Tasmania.

Table 2 also demonstrates changes in playgroup attendance in each jurisdiction across 2012 and 2015 AEDC cohorts. Attendance decreased in 2015 slightly in New South Wales, Queensland and South Australia, but increased in all other jurisdictions. In particular, attendance rates increased significantly in the Northern Territory (from 29.5% in 2012 to 35.9% in 2015) and Victoria (from 43.7% in 2012 to 47.5% in 2015).

Table 3 below presents these percentages applied to the full 2012 and 2015 AEDC samples, so as to estimate the number of children in each state and territory who would have attended playgroups prior to school. In 2015 at the national level, 35.5% of children attended playgroup before school, and there were just over 302,000 children in the 2015 AEDC cohort. This suggests that a little over 107,000 children in this birth cohort attended a playgroup at some stage between their birth in 2009/10 and starting full time school in 2015.

Table 3: Number of children in population who attended playgroup prior to school

	No. children in 2012 AEDC cohort	% attending playgroup	No. children in 2012 AEDC cohort who attended playgroups	No. children in 2015 AEDC cohort	% attending playgroup	No. children in 2015 AEDC cohort who attended playgroup
Australia	289,973	36.0	104,390	302,003	35.5	107,211
NSW	94,572	27.7	26,196	96,156	24.3	23,366
VIC	67,931	43.7	29,686	71,737	47.5	34,075
QLD	61,593	31.9	19,648	65,200	30.1	19,625
WA	32,158	40.0	12,863	33,819	43.1	14,576
SA	18,921	58.4	11,050	19,669	57.8	11,369
TAS	6,430	66.2	4,257	6,425	67.5	4,337
ACT	4,898	34.3	1,680	5,415	34.4	1,863
NT	3,470	29.5	1,024	3,582	35.9	1,286



4.2 Playgroup attendance in metropolitan, regional and remote areas of Australia

Community playgroups operate in all parts of Australia from inner city Sydney, Melbourne and Brisbane, to regional towns such as Dubbo, Townsville, Geraldton, and Launceston, to remote communities in Alice Springs, Mount Isa, and Broome. In this section, we explore how playgroup attendance varies for children living in these different parts of the country, and examine if these patterns of attendance differed between the 2012 and 2015 AEDC cohorts.

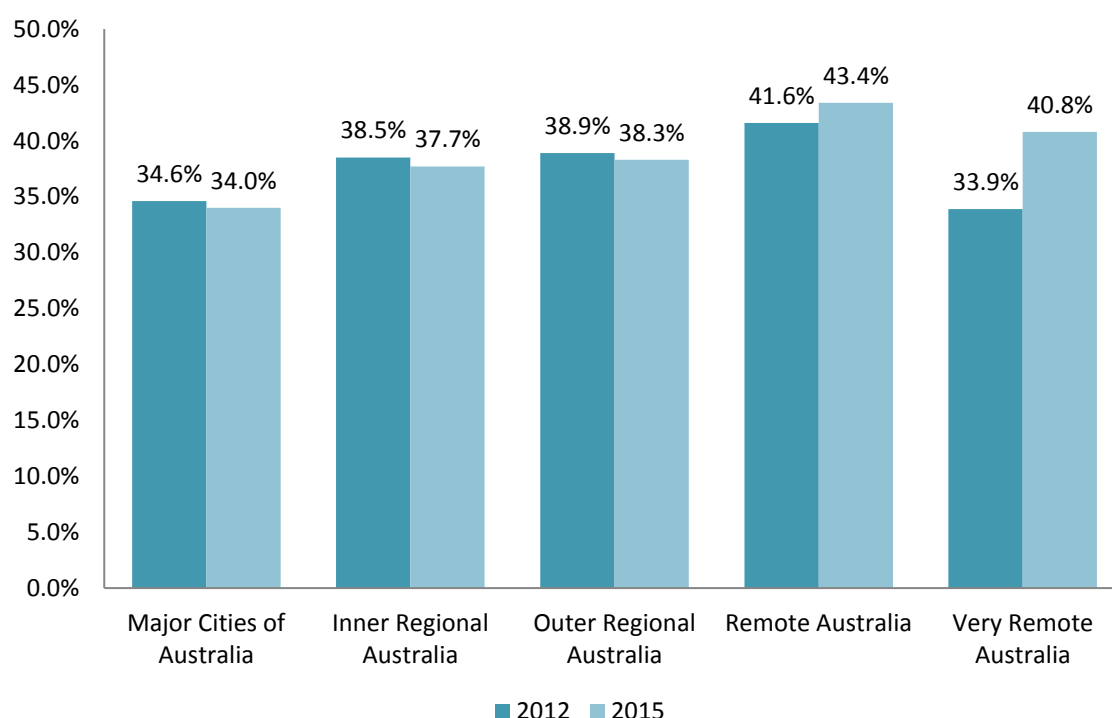



Figure 2: Playgroup attendance for 2012 and 2015 AEDC cohorts by geographical remoteness

For the 2012 cohort, there was an incremental increase in playgroup participation for children living in more regional and remote areas of the country, with the highest attendance rates amongst children living in Remote Australia, and a drop off in participation for children living in very remote Australia. In 2015, the pattern was similar except for very remote Australia where participation remained high. When comparing attendance by geographical remoteness across 2012 and 2015 cohorts, we see small decreases in attendance rates between 2012 and 2015 for children living in Major Cities and Regional Australia. Conversely, we see increases in attendance rates for the 2015 cohort in Remote Australia and a marked increase (34% to 41%) in Very Remote Australia.





The increase in playgroup participation in Very Remote Australia is a very positive and encouraging finding. However, this is based on a relatively small number of children so the results need to be interpreted with caution. Of the 2,884 children living in Very Remote Australia who were captured in the 2015 AEDC, information on playgroup attendance was available for 1,605 children (55.6%) and 40.8% of these children attended a playgroup prior to school. A range of different federal and state/territory policy initiatives may have influenced the increase in playgroup participation in Very Remote Australia. To help understand the patterns of playgroup attendance within states and territories, Figure 3 splits the data further to explore the impact of geographical remoteness on playgroup attendance within each of the jurisdictions.

The general trend holds that playgroup attendance is highest outside of Australia's major cities. In almost all jurisdictions, children living in regional areas (inner and outer) are more likely to attend playgroups than children living in major cities. Nevertheless, this pattern of attendance varies across jurisdictions and this may provide opportunities to compare the ways in which different policies, contexts and strategies impact playgroup attendance. For example, in New South Wales and the Northern Territory, playgroup attendance is highest for families living in very remote areas of the jurisdiction, whereas in Victoria, Western Australia and South Australia attendance is highest for inner regional parts of the states, and drops off gradually for families living in more remote areas. Understanding the different ways in which these jurisdictions address the challenges of facilitating playgroups in areas with limited services and supports, might provide valuable insights that could be used in the other jurisdictions.

When comparing these trends across the 2012 and 2015 AEDC cohorts, we see some noteworthy changes in attendance by geographical remoteness over time (see Figure 3). In the Northern Territory for example, playgroup attendance in remote and very remote Australia has increased significantly, while attendance in outer regional areas increased only very slightly. This could be due to a large range of factors, including the introduction of Families and First Teachers (FaFT) [10] program across remote areas of the NT targeted at Aboriginal families which is likely to have contributed to increased playgroup attendance in the NT. Issues impacting Aboriginal families in remote communities in the NT are, however, vastly different to those experienced in most other parts of the country. Additionally, the proportion of the population this affects in the NT is much higher than in other jurisdictions with similar issues in remote Aboriginal communities. In these communities issues related to health, food security, family violence, and drug and alcohol dependence may also be impacting on the capacity of families to engage with and benefit from playgroup attendance.



In Tasmania, we see a reverse in the attendance pattern – amongst the 2012 cohort attendance was highest in regional (inner and outer) areas and lowest in very remote areas, whereas for the 2015 cohort the opposite pattern is observed, with the highest attendance rates amongst children living in remote areas, and lowest attendance amongst those in the inner regional parts of the state. Again, this could be the result of a range of factors such as changes that are related to the nature and size of communities in very remote parts of the country or how the state is supporting playgroup in remote areas. Learnings from Tasmania’s experience could potentially be valuable for use in other jurisdictions.



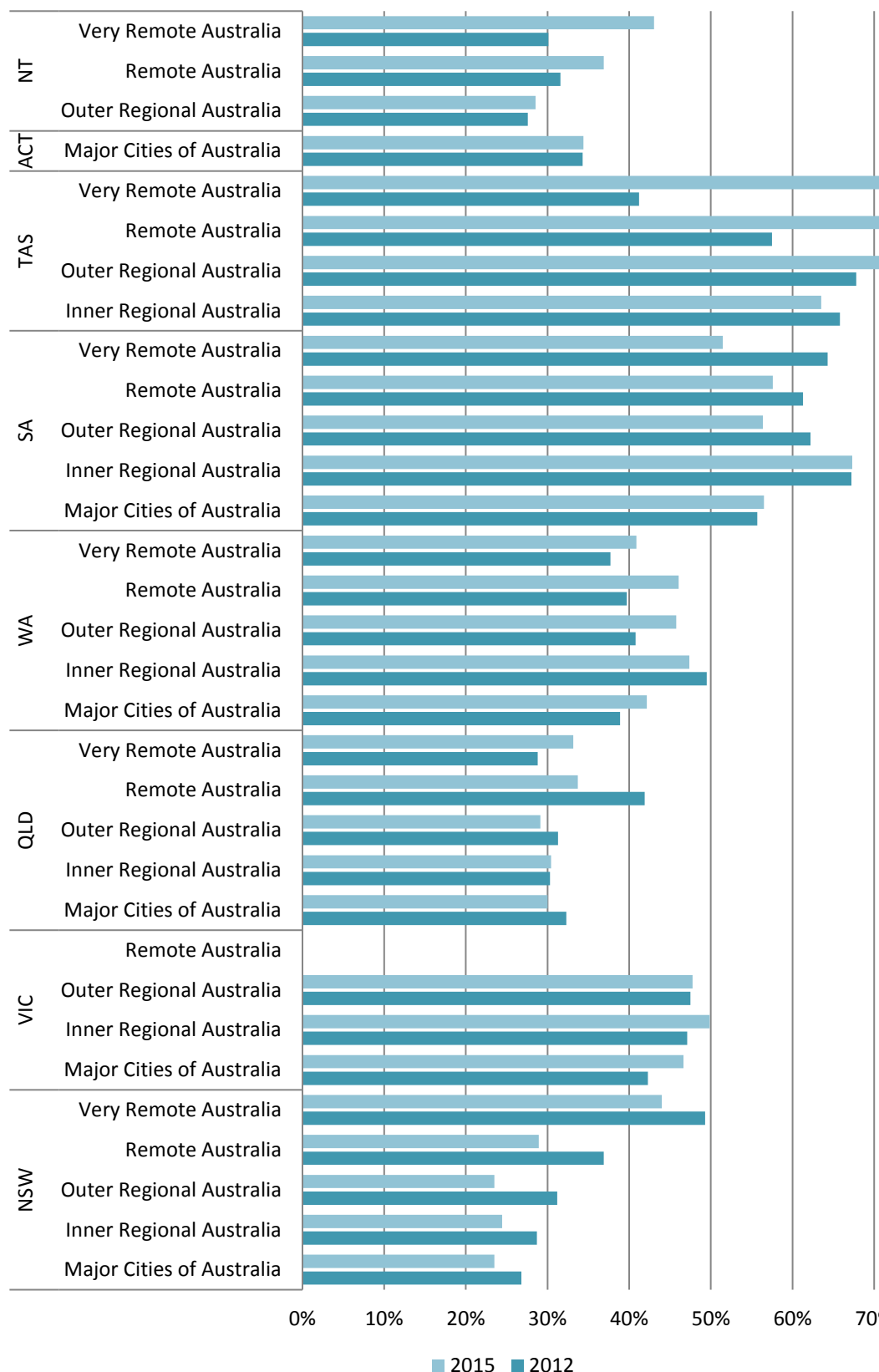


Figure 3. Jurisdictional playgroup attendance across 2012 and 2015 AEDC cohorts by remoteness



4.3 Playgroup attendance in areas of high and low socio-economic disadvantage

Playgroups are one of the most affordable regular activities that parents can do with their children with annual memberships starting at \$30. However, families need to travel to playgroup and this may present difficulties from a financial and logistical perspective for families with limited disposable income and/or access to transportation. There are also a range of non-financial barriers that might prevent some families from attending playgroup. For example, as was demonstrated in the qualitative component of the initial evaluation, parents reported feeling that playgroups weren't always easy to join once established because people had already formed friendship groups [2]. Other parents may feel that playgroups are inaccessible to them because they do not fit in (e.g. playgroup is for middle class families or stay at home mothers).

Figure 4 shows that there is a strong relationship between playgroup attendance and the socio-economic disadvantage of the area in which a child's family lives, and this finding was consistent across children starting school in both 2012 and 2015 with little shift between cohorts. For the 2015 cohort, the likelihood of a child having attended a playgroup prior to school increased incrementally if they lived in less disadvantaged areas from 26% (most disadvantaged areas) to 45% (least disadvantaged areas). These results highlight that children from more affluent backgrounds are much more likely to have attended playgroup before starting school, and this pattern has held true over time.

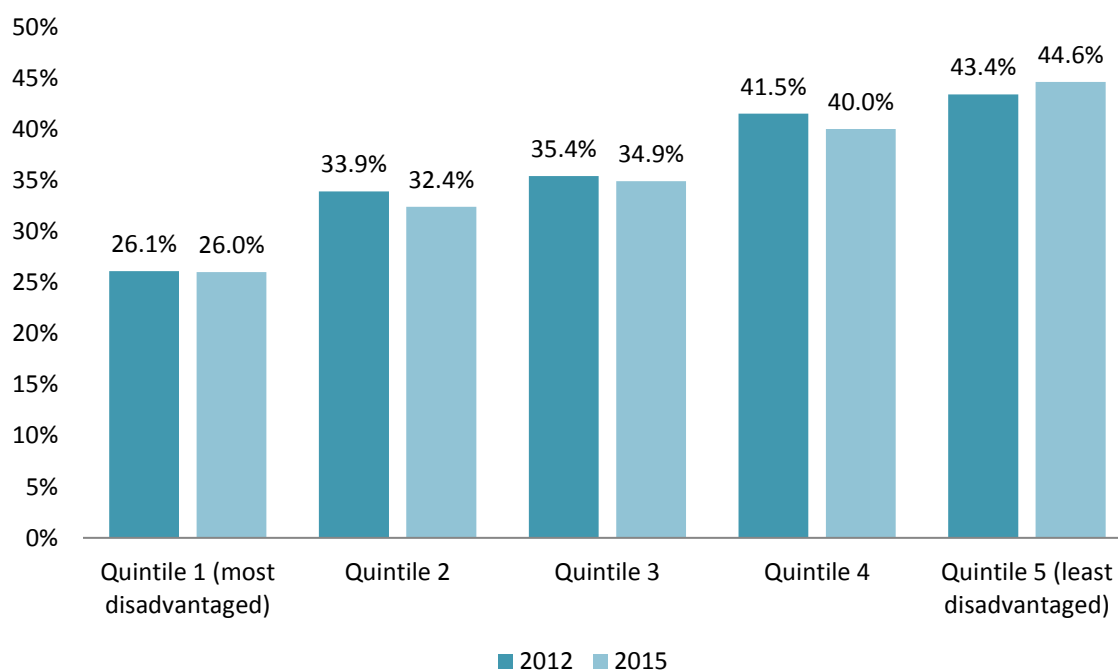


Figure 4: Playgroup attendance for 2012 and 2015 AEDC cohorts by socio-economic disadvantage



4.4 Demographic characteristics of children by playgroup attendance

The previous three sections have shown that there are clear associations between playgroup attendance and where children live. Specifically, the likelihood that a child will have attended playgroup prior to starting school depends on the state/territory they live in, whether they live in a major city, regional town or remote area, and whether they live in a more or less socio-economically disadvantaged area of Australia.

In this section, we explore whether a child is more or less likely to attend playgroup depending on their individual characteristics, including whether they:

- are a boy or girl,
- are of Aboriginal and/or Torres Strait Islander descent;
- were born in Australia, an English speaking country, or a non-English speaking country, and;
- have a language background other than English

If specific children or groups of children are “missing out” on attending playgroup, then this may present an opportunity for Playgroup Australia to target these families in future marketing campaigns.

Table 4: Demographic characteristics of children who did/did not attend playgroup prior to school

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes N (%)	No N (%)	Yes N %	No N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
Sex				
Male	21,590 (35.0)	40,125 (65.0)	20,380 (34.5)	38,639 (65.5)
Female	21,362 (37.1)	36,168 (62.9)	20,363 (36.5)	35,360 (63.5)
Indigenous				
Non-Indigenous	41,285 (37.0)	70,273 (63.0)	38,859 (36.5)	67,522 (63.5)
Indigenous	1,667 (21.7)	6,020 (78.3)	1,884 (22.5)	6,477 (77.5)
Country of birth				
Australia	40,744 (36.8)	70,094 (63.2)	38,700 (36.3)	67,874 (63.7)
Other Country	903 (19.0)	3,838 (81.0)	966 (19.2)	4,058 (80.8)
Other English Speaking Country	1,305 (35.6)	2,361 (64.4)	1,077 (34.3)	2,067 (65.7)
Language background other than English				
No	38,244 (39.5)	58,597 (60.5)	35,202 (38.9)	55,372 (61.1)
Yes	4,708 (21.0)	17,696 (79.0)	5,541 (26.0)	18,627 (77.1)



Facilitated playgroups are often targeted towards particular vulnerable groups such as Indigenous children, children with English as a second language, and children living in socio-economically disadvantaged areas – whereas community playgroups are not. Nonetheless, Table 4 above highlights that children who do and do not attend playgroup in the AEDC cohort differ substantially in their demographic characteristics. The key findings are described below.

- **Gender:** Parents of girls were more likely to take them to a playgroup than parents of boys, and this finding was consistent across both 2012 and 2015 cohorts of children. While this difference might seem small (approximately 2% for each cohort), it represents a large number of children at the population level, and given the considerably poorer AEDC results of boys across all developmental domains than girls, boys are likely to benefit from playgroup just as much, if not more than girls.
- **Indigenous status:** As was the case for the 2012 cohort, amongst children who started school in 2015 Indigenous children were less likely to attend playgroups than non-Indigenous children (22.5% vs. 36.5%). While the percentage is lower, this still suggests that a considerable number of Indigenous children (one in five) attended a playgroup prior to school.
- **Country of birth:** Interestingly, children who were born overseas in an English speaking country were almost just as likely as Australian born children to attend playgroup. However, the children who were born in a non-English speaking country were much less likely to have attended playgroup prior to school. This is likely a reflection both of the prevalence of similar playgroup programs in other English speaking countries, and also the challenges facing parents with limited English skills when they arrive in Australia to attend playgroup. These patterns were observed for both 2012 and 2015 cohorts.
- **Language Background other than English:** Consistent with the findings on country of birth, children who spoke English only were much more likely to attend playgroup than children who had a language background other than English. The percentage of children who had attended playgroup and had a language background other than English was greater amongst the 2015 cohort relative to that of children who started school in 2012 (21% versus 26%), and this could potentially reflect an increase in the number of playgroups specifically for families whose language background is not English.

In Appendix B, we replicate Table 4 for each of the jurisdictions to provide a description of the demographic characteristics of children who do and do not attend playgroup.



One of the key findings from these data is that even in the most disadvantaged areas of Australia, more than a quarter of children are attending playgroup prior to school. Amongst other disadvantaged groups such as Indigenous children and children born in non-English speaking countries, approximately 20% of children had attended playgroup prior to starting school. In the most remote areas of the country, over a third of children had some exposure to playgroup prior to school. All of these patterns were observed in the 2012 AEDC cohort and remained constant for the children who started school in 2015. While there are opportunities to increase the reach of playgroups in Australia, it is evident that playgroups are by no means a small targeted program that reaches a small fraction of the population. Rather, results demonstrated that playgroups have a wide reach impacting one in four disadvantaged children and close to one in two less disadvantaged children across Australia.

4.5 Summary

This section of the report set out to understand patterns of playgroup attendance across Australia based on a teacher completed item (“Did this child attend playgroup before entering full time school?”) collected within two cycles of the Australian Early Development Census (AEDC). We sought to compare attendance patterns of children captured within the 2015 AEDC collection for which data were available for about 302,000 children and data on playgroup attendance available for about 115,000 children, with that of children of the 2012 AEDC collection, for which data were collected on about 290,000 children, with specific playgroup attendance data available for about 119,000 children.

Key findings include:

- Nationally, 2015 AEDC data demonstrates that 35.5% of children attended playgroup prior to school, half a percentage less than that observed amongst children who started school in 2012.
- Between 24% and 68% of children attended playgroups across the different states and territories of Australia. Playgroup attendance decreased amongst the 2015 cohort slightly in New South Wales, Queensland and South Australia, but increased in all other jurisdictions.
- Playgroup attendance was higher for children living in more regional and remote areas of Australia than for children living in major cities, and this pattern was consistent across both 2012 and 2015 cohorts of children.
- Playgroup attendance increased incrementally for children living in less socio-economically disadvantaged communities from 26% in the most disadvantaged communities to 45% in the least disadvantaged communities. Again, this pattern was observed in 2012 and 2015 data.
- Boys, Indigenous children and children with a language background other than English are less likely to attend playgroup, and this pattern was consistent across both 2012 and 2015 cohorts.
- Children who spoke English only were considerably more likely to have attended playgroup than children with a language background other than English, however the percentage of children attending playgroup with a language background other than English was considerably higher amongst the 2015 cohort, compared to children who started school in 2012.
- Playgroups continue to have a wide reach across the country, impacting one in four disadvantaged children and close to one in two less disadvantaged Australian children.



5. IMPACT OF PLAYGROUP ATTENDANCE ON CHILD DEVELOPMENT

The importance of play for children’s development is undeniable. Playgroups provide an opportunity for children to regularly engage in unstructured play with other children of a similar age and developmental stage, offering opportunities to develop their physical development as well as their emotional, social, and language skills. Playgroup also provides opportunities for parents and carers to socialise, learn new parenting skills, and seek emotional support from one another, which improves their wellbeing and parenting abilities leading to secondary benefits for their children. In this section, we explore whether children who attended playgroup prior to commencing school had better child development outcomes on the Australian Early Development Census (AEDC) at school entry, compared to children who did not attend playgroup.

5.1 AEDC results for children who did and did not attend playgroups

There were marked differences between children who did and did not attend playgroup in the 2015 AEDC cohort on all five developmental domains (see **Table 5**). Given that playgroup primarily involves play based activities, one might expect to see the biggest impact of playgroup on children’s social skills and emotional development. However, of all domains, the biggest differences between children who did and did not attend playgroups were in their Communication Skills and General Knowledge (5.2% versus 12.3% developmentally vulnerable) and their Language and Cognitive Skills (3.9% versus 9.8% developmentally vulnerable). When looking at these skills, children who did not attend playgroups were *approximately two times more likely* to be developmentally vulnerable than children who did not.

Table 5: Percentage of children developmentally vulnerable on AEDC domains in relation to playgroup attendance

	Attended Playgroup			
	2012		2015	
	Yes (n = 42,952 ^a) N (%)	No (n = 76,293) N (%)	Yes (n = 40,743) N (%)	No (n = 73,999) N (%)
Developmental domain				
Physical Health and Wellbeing	2,772 (6.8)	8,849 (12.3)	2,881 (7.4)	9,075 (12.9)
Social Competence	2,625 (6.4)	8,538 (11.9)	2,766 (7.1)	9,221 (13.2)
Emotional Maturity	2,309 (5.7)	6,897 (9.6)	2,562 (6.6)	7,618 (10.9)
Language and Cognitive Skills	1,507 (3.7)	7,284 (10.1)	1,534 (3.9)	6,899 (9.8)
Communication and General Knowledge	2,075 (5.1)	8,885 (12.3)	2,042 (5.2)	8,655 (12.3)
Summary indicators				
Vulnerable on 1 or more domains	6,402 (15.8)	19,761 (27.5)	6,464 (16.6)	19,575 (28.0)
Vulnerable on 2 or more domains	2,823 (6.9)	10,589 (14.7)	2,918 (7.5)	10,921 (15.6)

^a Number of children with valid cases will be slightly lower than this number and varies across indicators.



5.2 Adjusted effects of playgroups on child development

It is important to note that children who do and do not attend playgroups vary on a vast range of socio-economic and demographic factors that are related to their child development outcomes. As shown in Table 4, children who did not attend playgroups were more likely to be boys, Indigenous, living in more socio-economically disadvantaged areas, and to speak English as a second language – all factors that are associated with poorer child development outcomes. As such, the next analysis explores the difference in AEDC results for children who did and did not attend playgroups after adjusting for the difference in these background characteristics of the two groups (see Table 6).

Table 6: Logistic regression analyses of playgroup attendance on developmentally vulnerable on one or more domains of the AEDC

	2012 Adjusted			2015 Adjusted		
	N	OR (95% CI)	p	N	OR (95% CI)	p
Playgroup attendance						
Yes	40,514	ref	-	38,802	ref	-
No	71,739	1.75 (1.69-1.81)	<.001	69,914	1.70 (1.64-1.75)	<.001
Indigenous status						
Non-Indigenous	104,912	ref	-	100,968	ref	-
Indigenous	7,086	2.47 (2.35-2.60)	<.001	7,748	2.63 (2.50-2.76)	<.001
LBOTE						
English only	90,829	ref	-	85,622	ref	-
LBOTE	21,169	1.49 (1.44-1.55)	<.001	23,094	1.41 (1.36-1.46)	<.001
Gender						
Male	56,829	ref	-	54,884	ref	-
Female	55,169	0.46 (0.45-0.48)	<.001	53,832	0.45 (0.43-0.46)	<.001
SES						
Quintile 1	23,166	ref	-	22,483	ref	-
Quintile 2	21,955	0.81 (0.78-0.85)	<.001	21,208	0.75 (0.72-0.79)	<.001
Quintile 3	21,896	0.71 (0.68-0.74)	<.001	21,671	0.71 (0.68-0.74)	<.001
Quintile 4	21,467	0.59 (0.57-0.62)	<.001	20,900	0.59 (0.56-0.62)	<.001
Quintile 5	23,514	0.48 (0.46-0.50)	<.001	22,454	0.49 (0.47-0.51)	<.001



There are several key findings from these analyses. For children who started school in 2015, the odds of being developmentally vulnerable on one or more domains of the AEDC were:

- **1.70 times higher** for children who did not attend playgroup prior to school compared with children who did attend playgroup (compared to 1.75 times higher for the 2012 cohort).
- **2.63 times higher** for Indigenous children than non-Indigenous children, an increase from 2.47 times higher as was observed for the 2012 cohort.
- **1.41 times higher** for children who spoke English as a second language than those who spoke English only (compared to 1.49 times higher for the 2012 cohort).
- **0.45 times lower** for girls than boys, almost the same as was observed for children who started school in 2012.
- **Between 0.75 and 0.49 times lower** for children growing up in less socio-economically disadvantaged areas than children in the most disadvantaged areas of Australia, again similar to results from the 2012 cohort.

5.3 Adjusted effects of playgroups on child development for different population groups

From the previous analysis, we know that children who started school in 2015 and had not attended playgroup had 1.70 times higher odds of being developmentally vulnerable than children not attending playgroups BUT do we see the same beneficial impacts for boys and girls, children with a language background other than English, Aboriginal children and children living in more and less socially disadvantaged areas of Australia? For each of the analyses, the adjusted model accounted for all of the demographic factors shown in Table 6.

Table 7 presents the increased odds of being developmentally vulnerable for children who did not attend playgroups in the full population (adjusted OR = 1.70) and for specific sub-groups. Results show that for the 2015 cohort, boys who did not attend playgroup prior to school had 1.71 times higher odds of being developmentally vulnerable than boys who attended playgroup prior to school, whereas the odds ratio for girls was a little lower at 1.69, suggesting that boys benefit more from attending playgroup than do girls. This result (i.e. boys benefit more from playgroup than girls) is the opposite of that found in the 2012 cohort, and a third time point (i.e. the examination of 2018 AEDC data once available), may be able to shed light on this pattern.

Odds ratios in Table 7 below demonstrate that non-Indigenous children benefit more from playgroup than Indigenous children, children who speak English only benefit more from playgroup than children who have a language background other than English, and children living in the most disadvantaged areas benefit from attending playgroup more than children living in the least disadvantaged areas.



Importantly, odds ratios were significantly different from 1 and ranged from 1.55 and 1.82 for all sub-groups, suggesting that playgroups are *universally beneficial* from children from a range of different backgrounds.

Table 7: Adjusted odds ratios for the impact of playgroup attendance on AEDC results for different population sub-groups

	2012	2015
	Adjusted*	Adjusted*
	OR (95% CI)	OR (95% CI)
Full population*	1.75 (1.69-1.80)	1.70 (1.64-1.75)
Males	1.68 (1.62,1.76)	1.71 (1.64-1.78)
Females	1.86 (1.77,1.96)	1.69 (1.60-1.78)
Indigenous	1.75 (1.55-1.98)	1.55 (1.38-1.74)
Non-Indigenous	1.76 (1.70-1.82)	1.73 (1.67-1.79)
Language background other than English	1.59 (1.47,1.72)	1.61 (1.50-1.73)
English only	1.80 (1.73-1.86)	1.74 (1.68-1.81)
SEIFA Quintile 1 (<i>most disadvantaged</i>)	1.84 (1.72-1.97)	1.73 (1.62-1.86)
Quintile 2	1.82 (1.69-1.95)	1.78 (1.65-1.92)
Quintile 3	1.78 (1.66-1.92)	1.82 (1.69-1.96)
Quintile 4	1.80 (1.67-1.94)	1.60 (1.48-1.72)
Quintile 5 (<i>least disadvantaged</i>)	1.51 (1.40-1.62)	1.55 (1.44-1.68)

Note. * Adjusted for gender, Indigenous status, language background other than English and socio-economic status of the area where the child lives (SEIFA).



5.4 Adjusted effects of playgroups on child development for different jurisdictions

Finally, we explored the impact of playgroup on child development separately for each of the states and territories (see **Table 8**). Across all jurisdictions, children who attended playgroups prior to school had lower levels of vulnerability than children who did not. These effects remained significant after adjusting for socio-demographic differences between the two groups with adjusted odds ratios ranging from 1.24 to 2.57 in the different jurisdictions. There were big differences between states and territories in the size of the impact of playgroups on the AEDC results. In Tasmania, children who did not attend playgroups were almost *three times* more likely to be developmentally vulnerable at school entry, whereas the odds ratio was just 1.24 in the Northern Territory.

Table 8: AEDC results x playgroups attendance in each jurisdiction across 2012 and 2015 cohorts

	2012		Adjusted OR (95% CI)	2015		Adjusted OR (95% CI)
	Did the child attend playgroup before entering full time school?			Did the child attend playgroup before entering full time school?		
	Yes	No		Yes	No	
NSW	14.7% (n=1,448)	23.7% (n=6,126)	1.52 (1.43-1.63)	15.1% (n=1,328)	24.2% (n=6,638)	1.59 (1.49-1.70)
VIC	13.7% (n =1,351)	26.0% (n=3,277)	1.85 (1.72-2.00)	14.7% (n=1,401)	29.2% (n=2,997)	1.91 (1.77-2.06)
QLD	18.8% (n = 1,762)	30.6% (n=6,163)	1.75 (1.64-1.86)	20.1% (n=1,675)	31.0% (n=6,002)	1.65 (1.55-1.76)
WA	15.1% (n=840)	30.3% (n = 2,498)	1.99 (1.81-2.18)	15.0% (n=965)	28.5% (n=2,404)	1.85 (1.70-2.02)
SA	16.1% (n=469)	31.8% (n = 646)	2.04 (1.77-2.36)	17.9% (n=499)	31.6% (n=625)	1.73 (1.50-2.00)
TAS	14.1% (n=293)	33.0% (n = 333)	2.72 (2.26-3.29)	14.9% (n=320)	32.3% (n=329)	2.57 (2.14-3.08)
ACT	19.4% (n=92)	25.2% (n = 235)	1.28 (0.97-1.69)	16.6% (n=57)	27.2% (n=182)	1.67 (1.18-2.36)
NT	35.7% (n =147)	49.0% (n=483)	1.67 (1.27-2.21)	47.9% (n=219)	49.6% (n=398)	1.24 (0.95-1.63)



These results should be interpreted with some caution given the number of children in each group. For example, in the Northern Territory, 485 children attended playgroups and 219 of these were developmentally vulnerable (47.9%). Nonetheless, the results indicate that the impact of playgroup on child development are largest within Tasmania, followed by Victoria, Western Australia, South Australia, the Australia Capital Territory, Queensland, New South Wales and finally the Northern Territory. The sizes of these impacts across jurisdictions for children who started school in 2015 were somewhat different to those observed amongst the 2012 AEDC cohort, as can be seen in Table 8 below.

The biggest differences were seen in the smallest jurisdictions - ACT and NT. In the ACT, the odds ratio increased quite a bit from 1.28 to 1.67 reflecting the more substantial difference in developmental vulnerability between children who did and did not attend playgroups in 2015, compared with 2012. In the NT, children who did not attend playgroup were more likely to be developmentally vulnerable in 2012 (OR = 1.67) but there was no significant difference between the two groups in 2015 (OR = 1.24).

5.5 Summary

This section of the report set out to understand the impact of playgroup attendance on child development outcomes using two distinct methods.

Key findings include:

- The benefits of playgroup are seen across all domains of child development: physical, social, emotional, language and cognitive development, and communication.
- Children who do not attend playgroups are 1.70 times more likely to be developmentally vulnerable on one or more domains of the AEDC at school entry, after adjusting for socio-economic and demographic differences between the two groups.
- Results from 2012 and 2015 data showed that playgroups are universally beneficial for children from a range of different backgrounds, with adjusted odds ratios ranging from 1.55 to 1.82 for different population groups for children from the 2015 AEDC cohort.
- Across both 2012 and 2015 cohorts, large differences between jurisdictions in the beneficial impacts of playgroups were observed, with adjusted odds ratios ranging from 1.24 in the Northern Territory to 2.57 in Tasmania for children who started school in 2015.

Previous research has shown that children who are developmentally vulnerable when they start primary school are much more likely to have problems with literacy and numeracy skills throughout their schooling [11]. Specifically, research has shown that children who were developmentally vulnerable on one domain when they started school were 2.3 times more likely to receive a low score in NAPLAN Reading in Grade 7, than children who were not developmentally vulnerable on any domains. The current research suggests an *association* between playgroup attendance and child development, rather than a causal effect. However, if the effect of playgroup on child development *was causal* then the positive effects of playgroup would be expected to have flow on effects onto children's NAPLAN results later in primary school.



6. IMPACT OF PLAYGROUP ATTENDANCE ON CHILDREN'S TRANSITION TO SCHOOL

During the AEDC data collection, teachers were asked how well each child was transitioning to school. There are a range of reasons to think that children who have attended playgroups prior to school might benefit during this transition. These children may have had more opportunities to develop social skills such as co-operation, sharing, and taking turns, be more able to manage their emotions such as worries, sadness and frustration through repeated opportunities to practice these skills with other children, have better conversational skills such as waiting for a turn, and expressing themselves, and may have developed friendships with other children who will also be starting school at the same time.

In this section, we explore differences between children who did and did not attend playgroups in how well they were adapting to school. Specifically, teachers answered the following question (*"Would you say this child is making good progress in adapting to the structure and learning environment of the school?"*) and we used this as an indicator of the success of the child's school transition.

In the 2015 AEDC, teachers answered "very true" for most children (75.7%), "somewhat true" for 21.3% of children, and "not true" for 2.8% of children. To explore the relationship between playgroup attendance and school transition, we have combined together the "somewhat true" and "not true" groups to represent children who are facing some challenge in the transition to school.

Table 9: School transition results for children who did and did not attend playgroup

<i>Would you say this child is making good progress in adapting to the structure and learning environment of the school?</i>	Did the child attend playgroup before entering full time school?	
	Yes	No
	(n = 42,952)	(n = 76,293)
	N (%)	N (%)
Not true/ somewhat true	7,168 (17.6)	22,171 (30.0)
Very true	33,553 (82.4)	51,792 (70.0)

Table 9 shows that 82.4% of children who attended playgroup prior to school were adapting well to the structure and learning environment of the school compared with 70% of children who had not attended playgroups. As expected, children who attended playgroups were more likely to be adapting well to school. However, there are likely to be a range of factors that influence both the likelihood of attending playgroups and having a successful transition to school such as gender, language background and socio-economic background. As such, we have run logistic regression models to adjust for these factors.



Logistic regression analyses suggest that children who did not attend a playgroup prior to school were 2 times more likely to be having trouble in their school transition (not true, somewhat true) compared to children who attended playgroup (OR = 2.00). After adjusting for differences in gender, Indigenous status, language background and socio-economic background, children who did not attend playgroups were still 1.82 times more likely to be having trouble transitioning to school.

Table 10: Logistic regression analyses of playgroup attendance on school transition

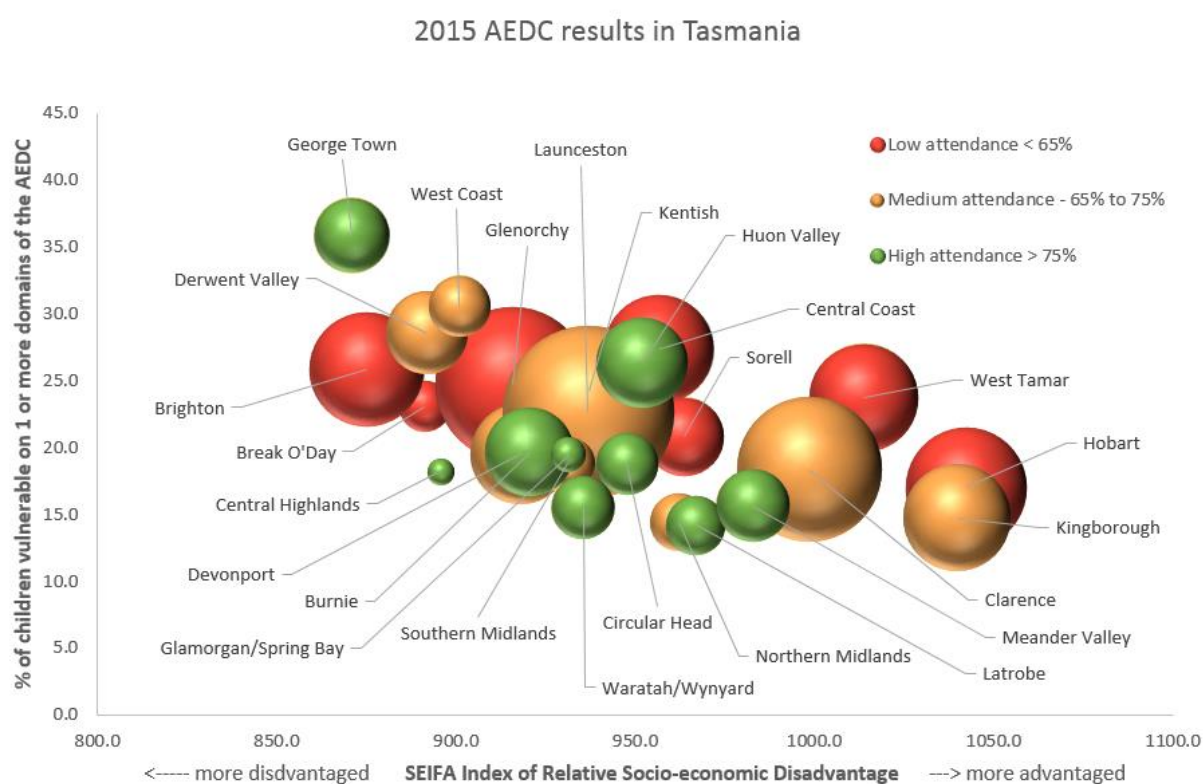
	Unadjusted			Adjusted		
	N	OR (95% CI)	p	N	OR (95% CI)	p
Playgroup attendance						
Yes	40,721	ref	-	40,721	ref	-
No	72,963	2.00 (1.95-2.07)	<.001	72,963	1.82 (1.76-1.88)	<.001
Indigenous status						
Non-Indigenous				106,238	ref	-
Indigenous				8,338	2.16 (2.06-2.26)	<.001
LBOTE						
English only				90,457	ref	-
LBOTE				24,119	1.13 (1.09-1.16)	<.001
Gender						
Male				58,935	ref	-
Female				55,641	0.53 (0.52-0.55)	<.001
SES						
Quintile 1				23,973	ref	-
Quintile 2				22,427	0.81 (0.78-0.84)	<.001
Quintile 3				22,817	0.75 (0.72-0.79)	<.001
Quintile 4				21,933	0.65 (0.62-0.67)	<.001
Quintile 5				23,426	0.56 (0.53-0.55)	<.001

While school transition was only measured by a single item in this analyses, it is encouraging to see that the results were consistent with the AEDC analyses suggesting that children who attend playgroup prior to school have better outcomes in their first year of full time school.



7. PLAYGROUP PARTICIPATION, CHILDREN'S DEVELOPMENT AND SES IN COMMUNITIES

In this final section, we provide information for each of the states and territories about the variation in playgroup attendance for communities in their jurisdiction. We graph this information along with the level of socio-economic disadvantage and developmental vulnerability on one or more domains of the AEDC for each of the communities. In the larger states it was not possible to fit all of the communities onto the graph and still be able to see the patterns. In this case, we have selected a sample of communities and plotted these.

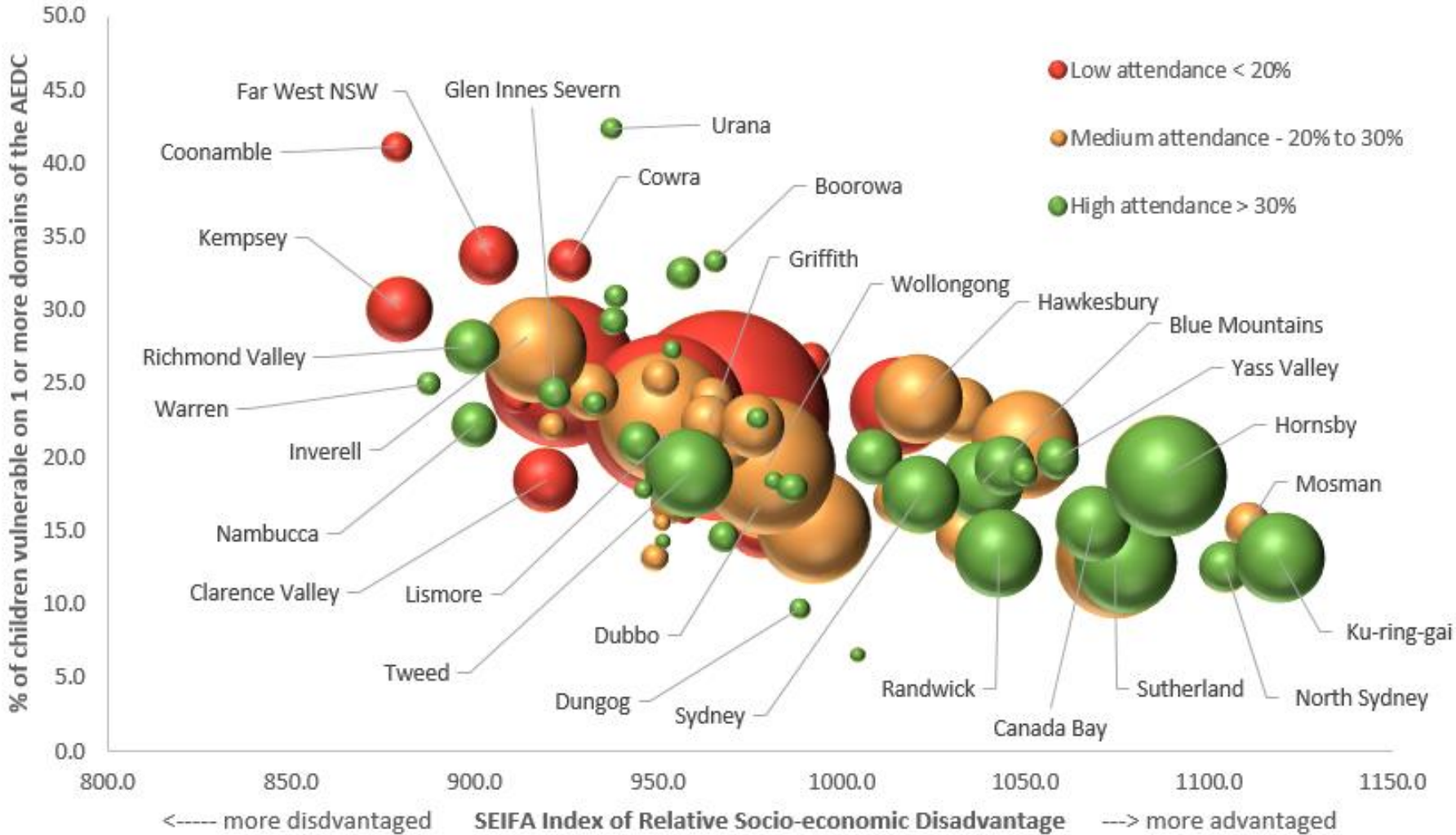


The example above shows the bubble plot for Tasmania. Each “bubble” represents an AEDC community, which is generally equivalent to a local government area.

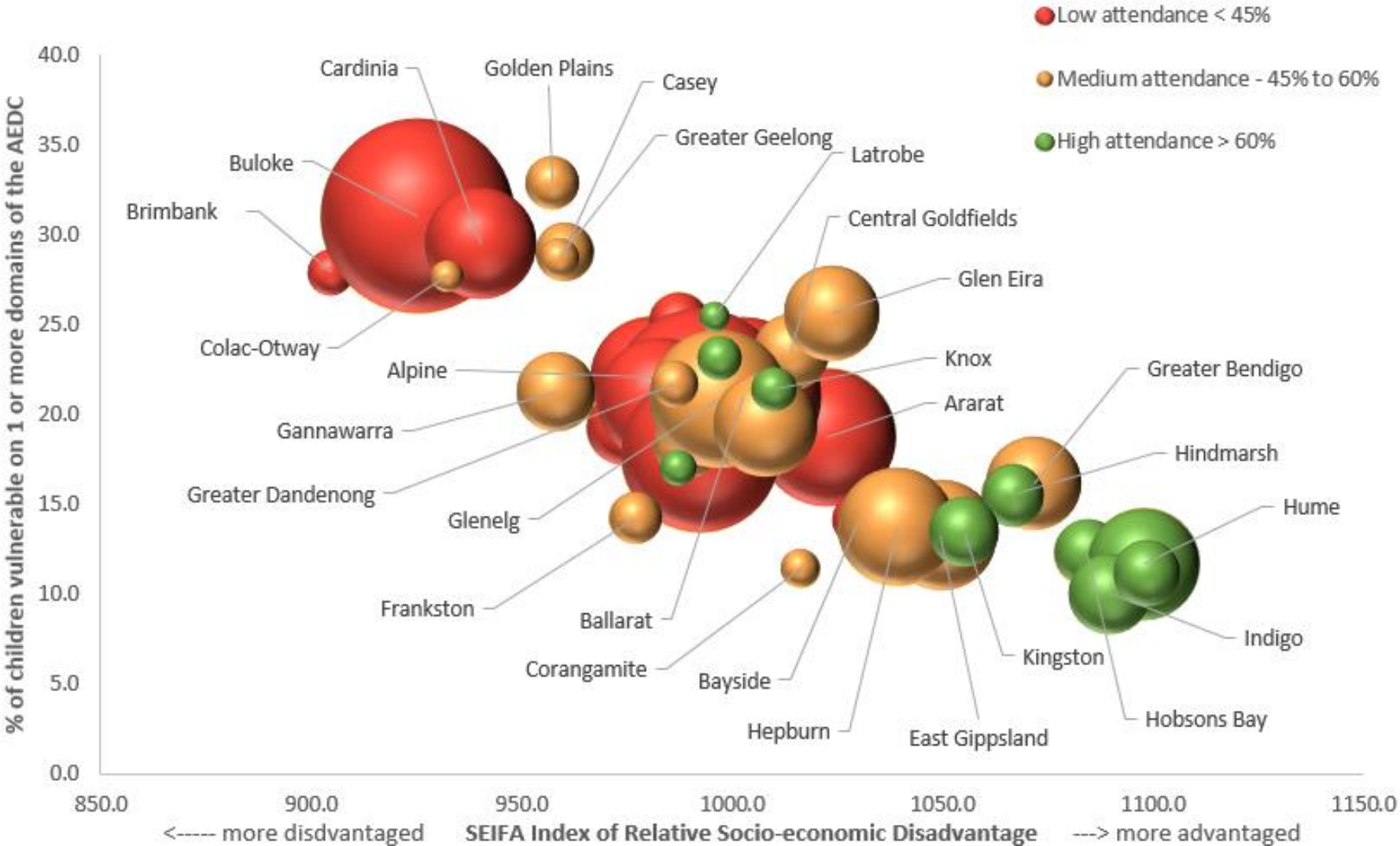
- The position of the bubble on the **x-axis** shows the level of socio-economic disadvantage
- The position of the bubble on the **y-axis** shows the % of children who are developmentally vulnerable on one or more domains in the community.
- The **size of the bubble** shows the number of children who are developmentally vulnerable on one or more domains in the community
- The **colour of the bubble** indicates the % of children who attended playgroup prior to school in that community



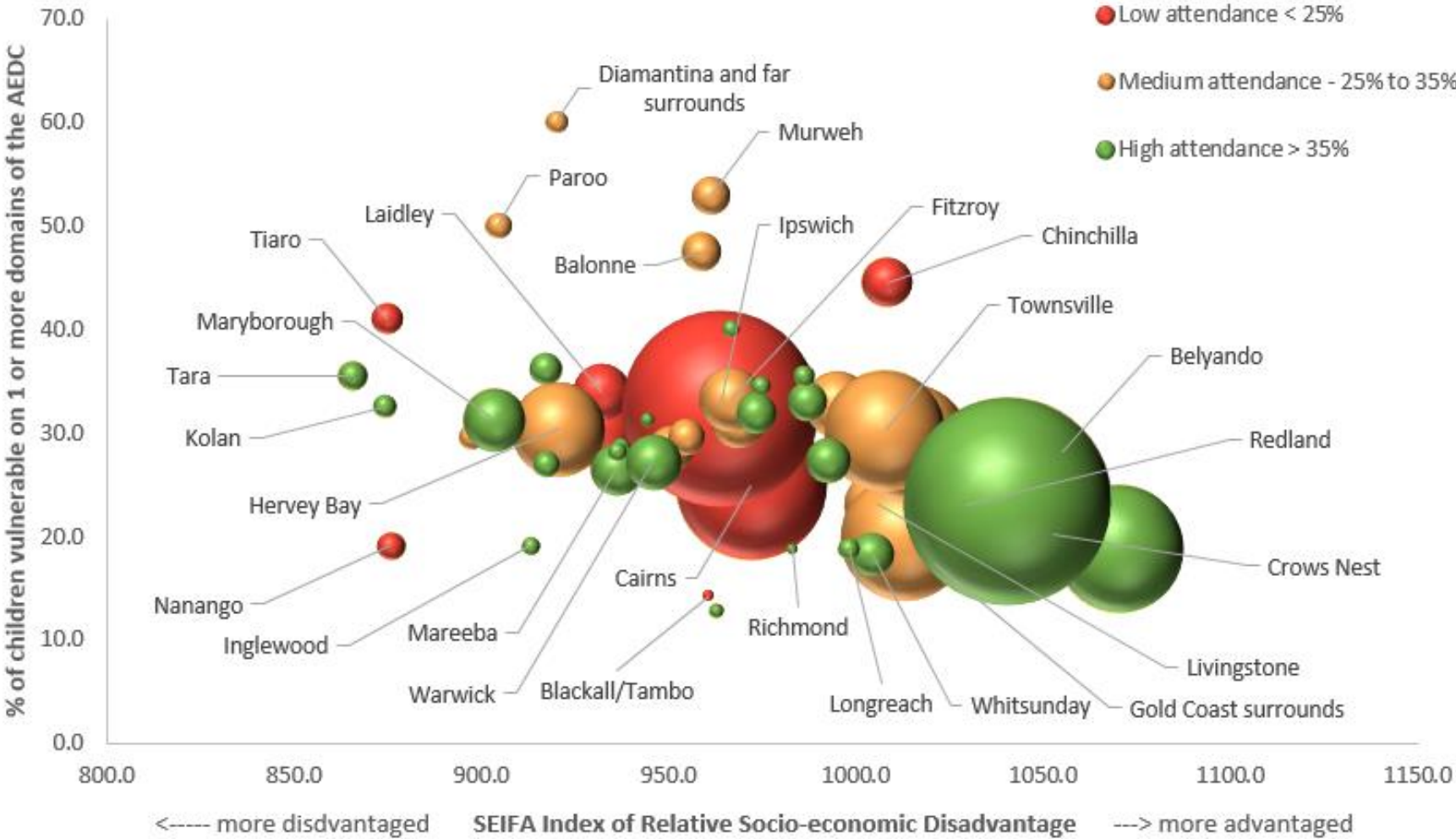
2015 AEDC results in New South Wales



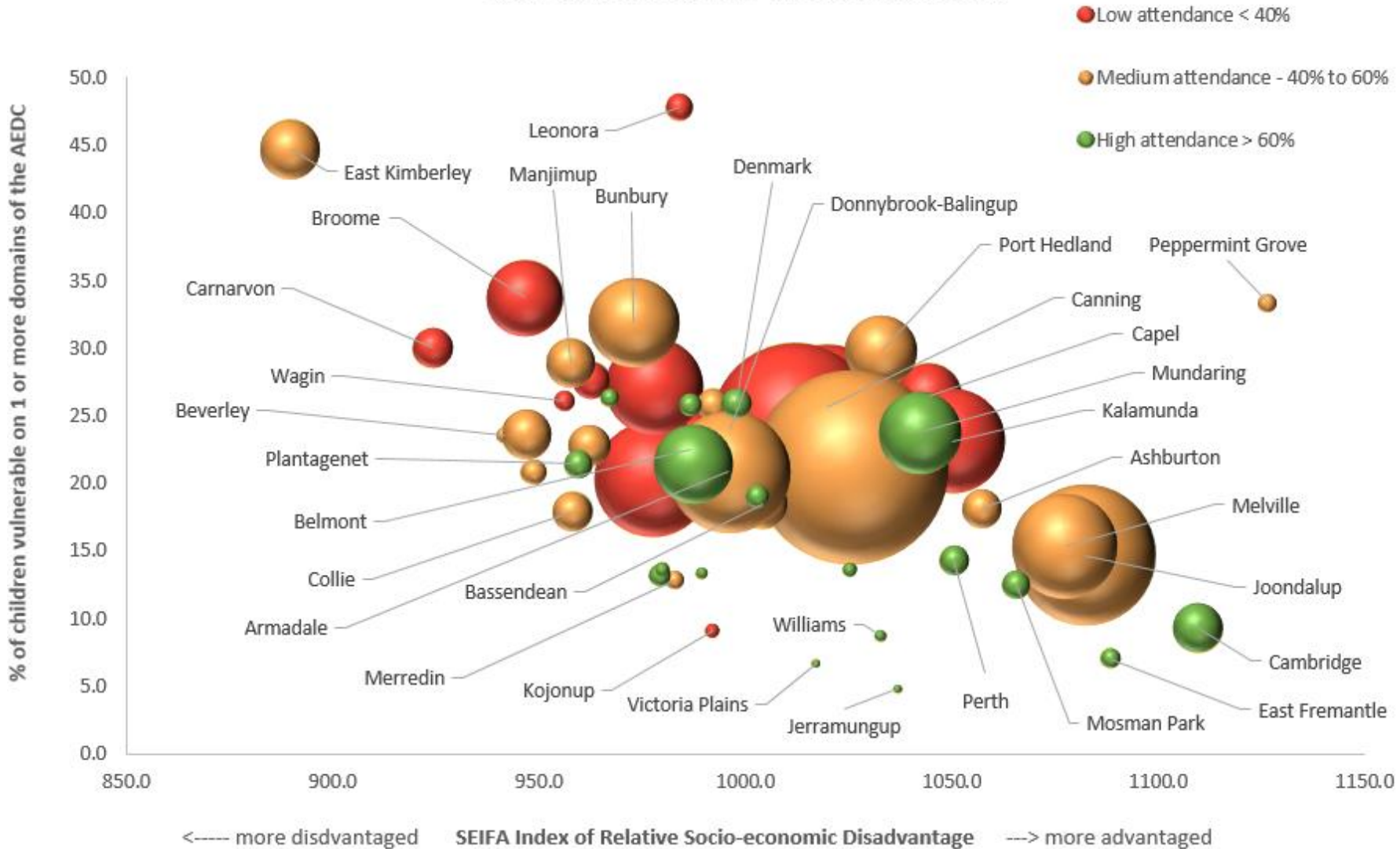
2015 AEDC results in Victoria



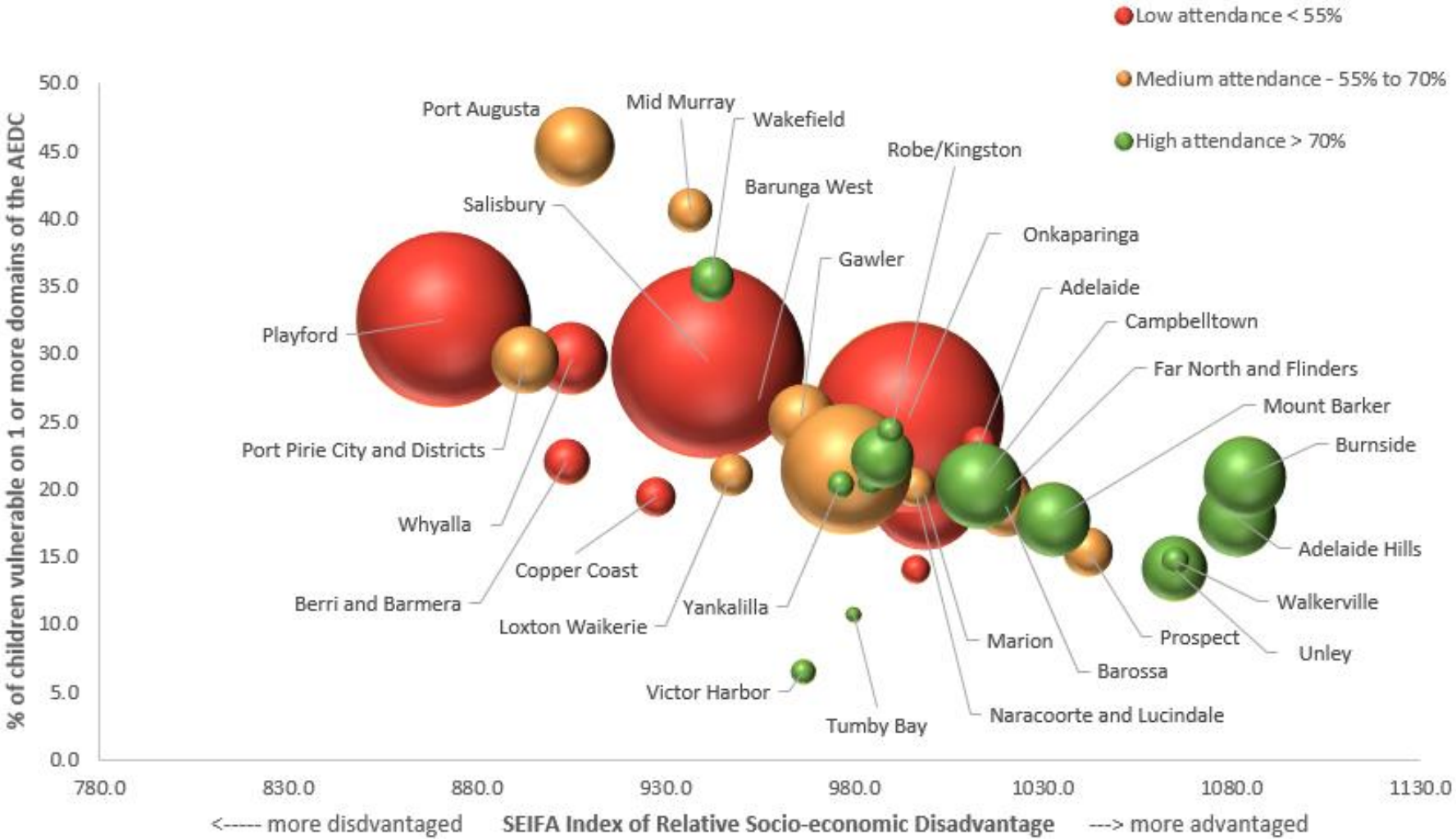
2015 AEDC results in Queensland



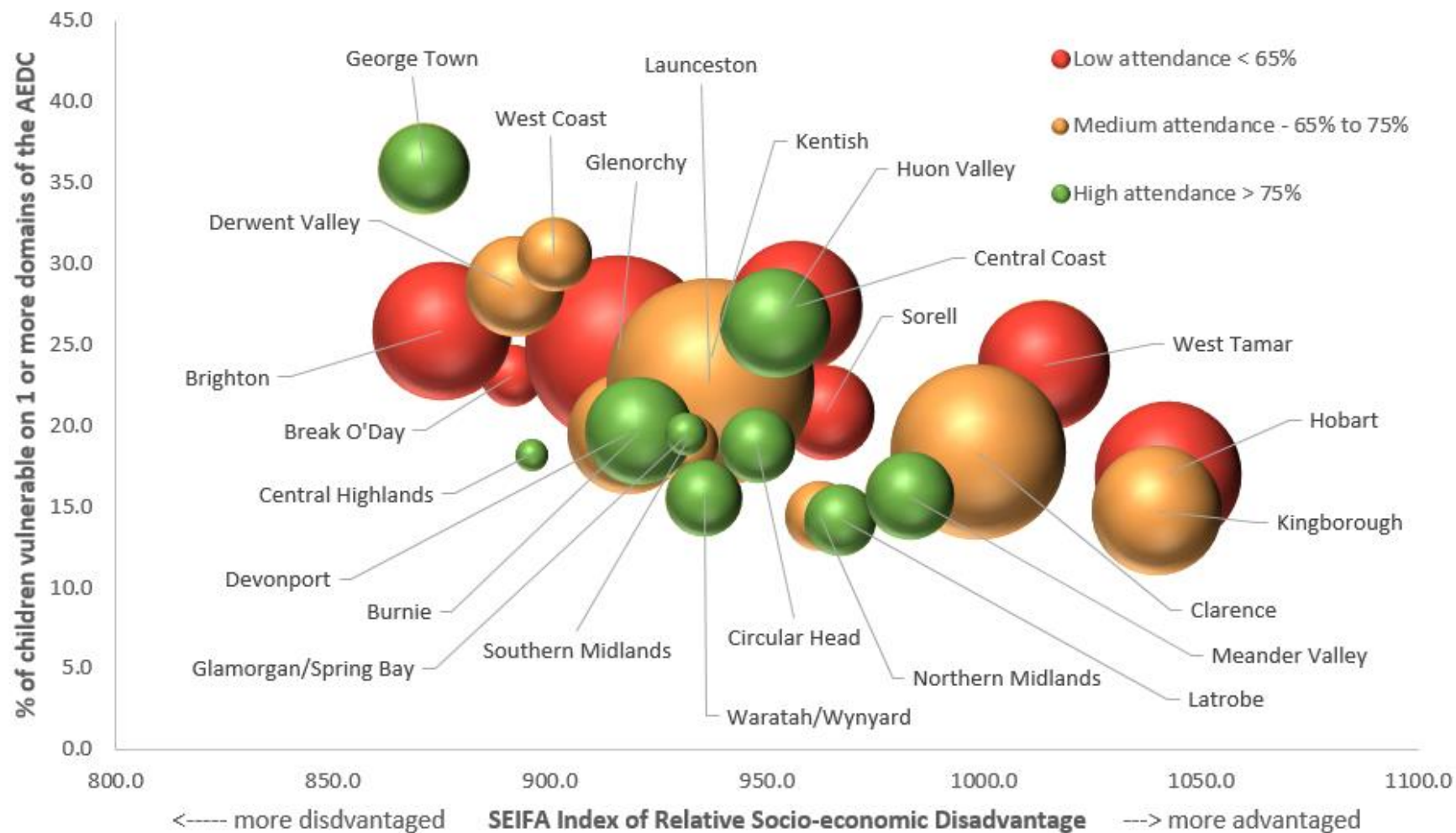
2015 AEDC results in Western Australia



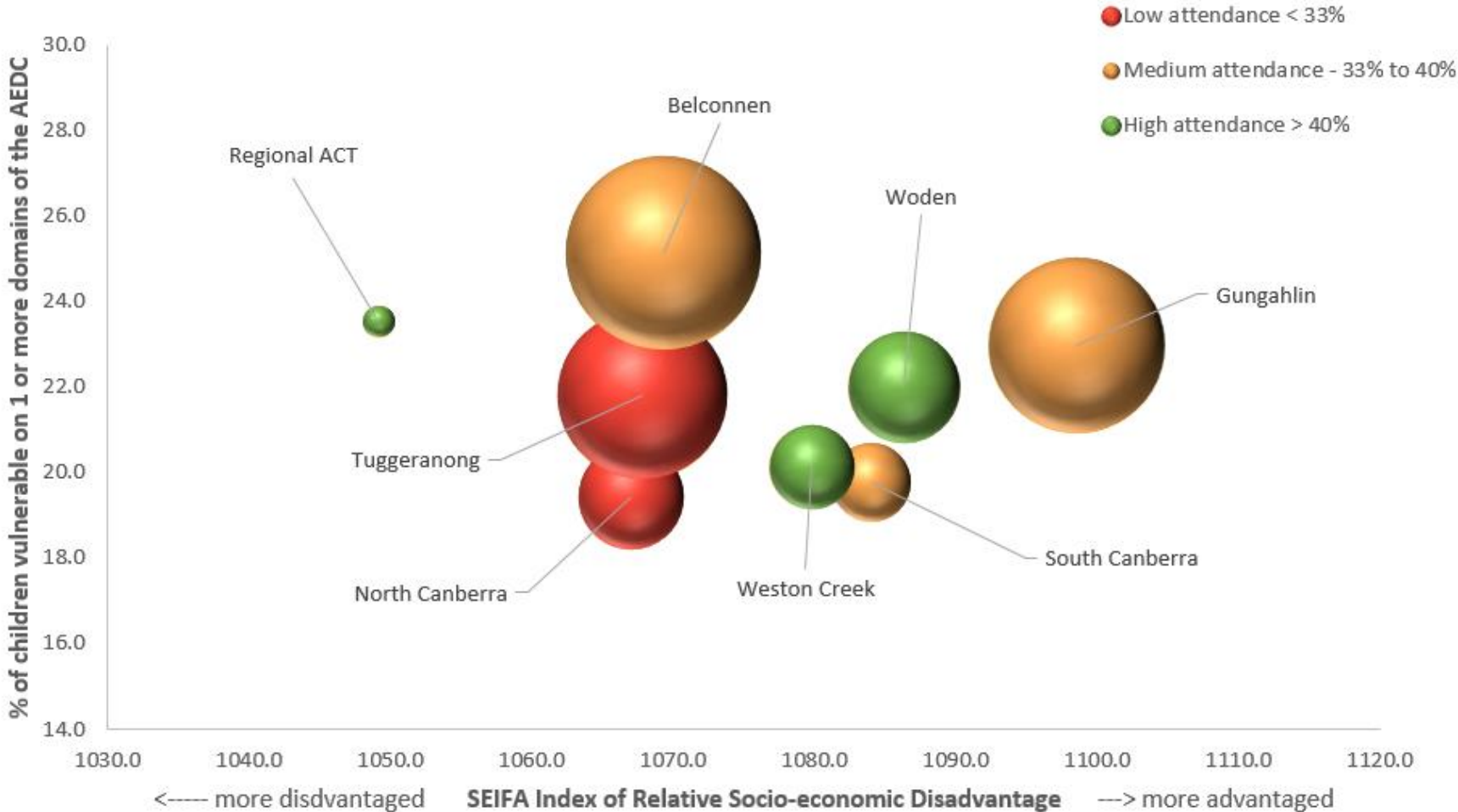
2015 AEDC results in South Australia



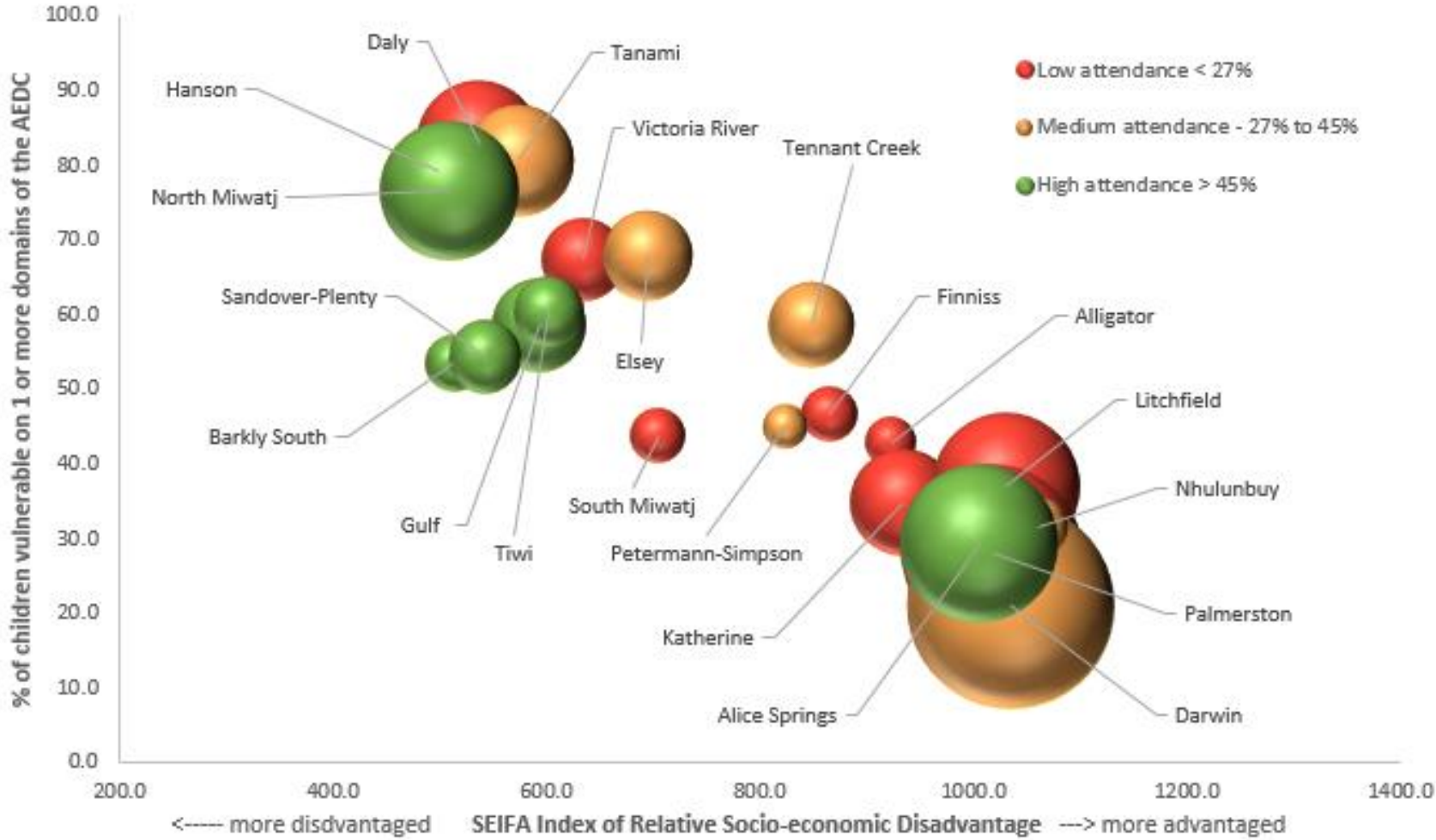
2015 AEDC results in Tasmania



2015 AEDC results in the Australian Capital Territory



2015 AEDC results in the Northern Territory



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APPENDIX A: TECHNICAL INFORMATION ON AEDC DATA

Data for the child development outcome measure used throughout this report were collected during the 2012 and the 2015 Australian Early Development Census (AEDC). The AEDC is a national census of early childhood development conducted once every three years in Australia on *all* children in their first year of full time schooling. In 2012, AEDC data were collected on 289,973 children across Australia and 302,003 children in 2015, providing a rich population data source. The AEDC data provides a snapshot of child development at the national level, for each of the states and territories, and AEDC data is publically available (www.aedc.gov.au) for about than 600 communities and 4,700 local communities across Australia.

The child development instrument used within the AEDC programme is an Australian adaptation of the Early Development Instrument [12, 13]. The EDI is a 96-item teacher completed instrument measuring development across five developmental domains covering physical, social, emotional, language, and cognitive development.

For each of the five domains, children receive a score between 0 and 10 with higher scores representing better development. In addition, children are classified into one of three categories based on national benchmarks set in 2009 during the first national census. In 2009, national benchmarks were set so that children receiving scores below the 10th percentile were classified as “developmentally vulnerable”, children scoring between the 10th and 25th percentile were classified as “developmentally at risk” and children scoring above the 25th percentile were classified as “on track”. In 2012, the same benchmarks were used to allow monitoring of whether developmental vulnerability for the population of children entering their first year of full time school is improving over time or not [14].

In addition to looking at each of the five domains individually, there are two key summary indicators used within the AEDC programme, which indicate whether children are vulnerable on 1 or more domains (or not), and whether children are vulnerable on 2 or more domains (or not). In this report, we focus primarily on whether children are vulnerable on 1 or more domains as our main outcome measure. In some cases, we report on whether children are developmentally vulnerable on each of the five developmental domains separately.

During the AEDC data collection, demographic information on the child such as gender, Indigenous status, language background and country of birth are obtained from school administrative records and added into the AEDC dataset.

In addition, the child's residential address was linked to information held by the Australia Bureau of Statistics to identify the level of socio-economic disadvantage in the community where the child lived. Specifically, the 2011 SEIFA Index of Relative Socio-Economic Disadvantage was linked at the lowest level of geography possible [15] providing a measure of socio-economic disadvantage for each child in the dataset. The child's residential address was also used to classify the level of geographical remoteness of the community in which they lived based on the Australian Standard Geographical Classification – Remoteness Areas [16]². Between the 2012 and 2015 AEDC data collection, some work was conducted to modify the AEDC local community and community boundaries to make them more consistent with the ABS boundaries. As a results of this process, the SEIFA score and/or geographical remoteness classification for some local communities changed slightly and there were retrospectively applied to the 2009 and 2012 AEDC data sets to allow researchers to make valid comparisons over time about changes in AEDC results.

In addition to completing the Early Development Instrument, teachers are asked to provide some contextual information about the children in their class. For instance, teachers are asked about the child's education and care experiences prior to school, their transition to school, whether they are read to at home, etc. In 2012, an item was added to ascertain whether children had attended playgroups prior to school ("Did this child attend playgroup before entering full time school?"). This item was used as the measure of playgroup attendance in Section 4 (Playgroup attendance – population estimates from the AEDC) and in the individual level analyses presented in Section 6 (Impact of playgroups on child development). It is important to note that teachers were not asked specifically about whether the child attended a community playgroup or a Playgroup Association run playgroup so they will answer 'Yes' if they are aware of the child attending any type of playgroup run by any organisation prior to starting school.

² Between the 2012 and 2015 AEDC data collections, work was conducted to modify the AEDC local community and community boundaries to make them more consistent with the ABS boundaries. As a results of this process, the SEIFA score and geographical remoteness classification for some local communities changed slightly and these were retrospectively applied to the 2009 and 2012 AEDC data sets to allow researchers to make valid comparisons of AEDC results over time. We have utilised the updated 2015 dataset for the current project, and as such, there will be some small differences between the data presented in this report and our previous report for any analyses that utilise SES and/or geographical remoteness. For example, the previous report suggested that 43.4% of children living in the least socio-economically disadvantaged communities attended playgroup prior to school, and this figure changed to 43.5% using the updated data.

APPENDIX B: DEMOGRAPHIC CHARACTERISTICS OF CHILDREN ATTENDING PLAYGROUP BY JURISDICTION

Table 11: Demographic characteristics of children by playgroup attendance (New South Wales)

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes N (%)	No N (%)	Yes N %	No N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
New South Wales	10,483 (27.7)	27,429 (72.3)	9,318 (24.3)	29,078 (75.7)
Sex				
Male	5,278 (27.0)	14,257 (73.0)	4,720 (23.9)	15,049 (76.1)
Female	5,205 (28.3)	13,172 (71.7)	4,598 (24.7)	14,029 (75.3)
Indigenous				
Non-Indigenous	10,029 (28.2)	25,543 (71.8)	8,906 (24.9)	26,876 (75.1)
Indigenous	454 (19.4)	1,886 (80.6)	412 (15.8)	2,202 (84.2)
Country of birth				
Australia	10,021 (28.1)	25,651 (71.9)	8,834 (24.7)	26,980 (75.3)
Other Country	236 (16.1)	1,228 (83.9)	263 (14.7)	1,522 (85.3)
Other English Speaking Country	226 (29.1)	55 (70.9)	221 (27.7)	576 (72.3)
Language background other than English				
No	8,894 (31.5)	19,297 (68.5)	7,551 (27.2)	20,199 (72.8)
Yes	1,589 (16.3)	8,132 (83.7)	1,767 (16.6)	8,879 (83.4)
Socio-economic status of communities where children live				
Quintile 1 (<i>most disadvantaged</i>)	2,139 (20.0)	8,553 (80.0)	1,919 (18.4)	8,487 (81.6)
Quintile 2	2,007 (25.2)	5,968 (74.8)	1,818 (22.4)	6,291 (77.6)
Quintile 3	1,641 (27.6)	4,311 (72.4)	1,332 (21.9)	4,738 (78.1)
Quintile 4	1,722 (31.6)	3,730 (68.4)	1,433 (25.2)	4,256 (74.8)
Quintile 5 (<i>least disadvantaged</i>)	2,968 (37.9)	4,857 (62.1)	2,808 (34.7)	5,278 (65.3)



Table 12: Demographic characteristics of children by playgroup attendance (Victoria)

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes N (%)	No N (%)	Yes N %	No N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
Victoria	10,530 (43.7)	13,560 (56.3)	9,988 (47.5)	11,056 (52.5)
Sex				
Male	5,282 (42.5)	7,158 (57.5)	4,985 (46.1)	5,835 (53.9)
Female	5,248 (45.0)	6,401 (55.0)	5,003 (48.9)	5,221 (51.1)
Indigenous				
Non-Indigenous	10,422 (44.0)	13,282 (56.0)	9,868 (47.9)	10,739 (52.1)
Indigenous	108 (28.0)	278 (72.0)	120 (27.5)	317 (72.5)
Country of birth				
Australia	10,083 (45.0)	12,339 (55.0)	9,564 (49.2)	9,868 (50.8)
Other Country	231 (21.0)	869 (79.0)	249 (21.4)	915 (78.6)
Other English Speaking Country	216 (38.0)	352 (62.0)	175 (39.1)	273 (60.9)
Language background other than English				
No	9,259 (48.2)	9,968 (51.8)	8,621 (53.0)	7,653 (47.0)
Yes	1,271 (26.1)	3,592 (73.9)	1,367 (28.7)	3,403 (71.3)
Socio-economic status of communities where children live				
Quintile 1 (<i>most disadvantaged</i>)	1,080 (28.8)	2,670 (71.2)	969 (28.4)	2,443 (71.6)
Quintile 2	1,987 (40.5)	2,917 (59.5)	1,743 (41.5)	2,454 (58.5)
Quintile 3	2,033 (42.0)	2,806 (58.0)	2,071 (45.9)	2,437 (54.1)
Quintile 4	2,924 (51.3)	2,781 (48.7)	2,754 (53.3)	2,414 (46.7)
Quintile 5 (<i>least disadvantaged</i>)	2,506 (51.2)	2,386 (48.8)	2,451 (65.2)	1,308 (34.8)



Table 13: Demographic characteristics of children by playgroup attendance (Queensland)

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes N (%)	No N (%)	Yes N %	No N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
Queensland	9,957 (31.9)	21,300 (68.1)	8,716 (30.1)	20,253 (69.9)
Sex				
Male	5,052 (30.9)	11,290 (69.1)	4,344 (29.2)	10,543 (70.8)
Female	4,905 (32.9)	10,010 (67.1)	4,372 (31.0)	9,710 (69.0)
Indigenous				
Non-Indigenous	9,465 (32.8)	19,373 (67.2)	8,193 (31.2)	18,096 (68.8%)
Indigenous	492 (20.3)	1,927 (79.7)	523 (19.5)	2,157 (80.5)
Country of birth				
Australia	9,264(32.0)	19,662 (68.0)	8,357 (30.4)	18,890 (69.9)
Other Country	209 (21.7)	754 (78.3)	175 (20.3)	688 (79.7)
Other English Speaking Country	484 (35.4)	884 (64.6)	284 (29.6)	675 (70.4)
Language background other than English				
No	9,203 (33.1)	18,612 (66.9)	7,877 (31.2)	17,378 (68.6)
Yes	754 (21.9)	2,688 (78.1)	839 (22.6)	2,875 (77.4)
Socio-economic status of communities where children live				
Quintile 1 (<i>most disadvantaged</i>)	1,324 (23.1)	4,414 (76.9)	1,318 (23.8)	4,225 (76.2)
Quintile 2	1,692 (30.0)	3,950 (70.0)	1,473 (27.3)	3,913 (72.7)
Quintile 3	2,547 (32.0)	5,408 (68.0)	2,266 (30.8)	5,103 (69.2)
Quintile 4	2,288 (35.5)	4,159 (64.5)	1,922 (33.1)	3,879 (66.9)
Quintile 5 (<i>least disadvantaged</i>)	2,106 (38.5)	3,367 (61.5)	1,735 (35.7)	3,129 (64.3)



Table 14: Demographic characteristics of children by playgroup attendance (Western Australia)

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes N (%)	No N (%)	Yes N %	No N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
Western Australia	5,772 (40.0)	8,647 (60.0)	6,674 (43.1)	8,810 (56.9)
Sex				
Male	2,893 (38.9)	4,545 (61.1)	3,303 (41.5)	4,651 (58.5)
Female	2,879 (41.2)	4,102 (58.8)	3,371 (44.8)	4,159 (55.2)
Indigenous				
Non-Indigenous	5,609 (42.4)	7,629 (57.6)	6,412 (45.1)	7,820 (54.9)
Indigenous	163 (13.8)	1,018 (86.2)	262 (20.9)	990 (79.1)
Country of birth				
Australia	5,380 (41.4)	7,622 (58.6)	6,164 (44.3)	7,748 (55.7)
Other Country	132 (19.2)	555 (80.8)	202 (25.6)	587 (74.4)
Other English Speaking Country	260 (35.6)	470 (64.6)	208 (39.3)	475 (60.7)
Language background other than English				
No	5,271 (43.5)	6,833 (56.5)	5,798 (46.7)	6,607 (53.3)
Yes	501 (21.6)	1,814 (78.4)	867 (28.5)	2,203 (71.5)
Socio-economic status of communities where children live				
Quintile 1 (<i>most disadvantaged</i>)	371 (25.3)	1,093 (74.7)	430 (30.5)	979 (69.5)
Quintile 2	851 (34.7)	1,600 (65.3)	850 (33.3)	1,702 (66.7)
Quintile 3	1,033 (35.4)	1,883 (64.6)	1,307 (40.9)	1,890 (59.1)
Quintile 4	1,249 (42.4)	1,694 (57.6)	1,432 (45.3)	1,731 (54.7)
Quintile 5 (<i>least disadvantaged</i>)	2,268 (48.9)	2,374 (51.1)	2,629 (51.5)	2,477 (48.5)



Table 15: Demographic characteristics of children by playgroup attendance (South Australia)

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes	No	Yes	No
	N (%)	N (%)	N %	N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
South Australia	3,114 (58.4)	2,214 (41.6)	2,946 (57.8)	2,150 (42.2)
Sex				
Male	1,534 (56.9)	1,160 (43.1)	1,472 (56.1)	1,154 (43.9)
Female	1,580 (60.0)	1,054 (40.0)	1,474 (59.7)	996 (40.30)
Indigenous				
Non-Indigenous	3,016 (59.6)	2,045 (40.4)	2,864 (59.3)	1,963 (40.7)
Indigenous	98 (36.7)	169 (63.3)	82 (30.5)	187 (69.5))
Country of birth				
Australia	2,998 (60.8)	1,933 (39.2)	2,851 (59.6)	1,931 (40.4)
Other Country	51 (17.8)	236 (82.2)	41 (17.2)	197 (82.8)
Other English Speaking Country	65 (59.1)	45 (40.9)	54 (71.1)	22 (28.9)
Language background other than English				
No	2,844 (63.4)	1,640 (36.6)	2,636 (61.9)	1,620 (38.1)
Yes	270 (32.0)	574 (68.0)	310 (36.9)	530 (63.1)
Socio-economic status of communities where children live				
Quintile 1 (<i>most disadvantaged</i>)	589 (44.9)	722 (55.1)	512 (40.5)	753 (59.5)
Quintile 2	779 (61.8)	482 (38.2)	760 (60.4)	499 (39.6)
Quintile 3	567 (59.9)	380 (40.1)	561 (62.5)	337 (37.5)
Quintile 4	672 (65.9)	347 (34.1)	627 (65.2)	335 (34.8)
Quintile 5 (<i>least disadvantaged</i>)	506 (64.1)	283 (25.9)	485 (68.2)	226 (31.8)



Table 16: Demographic characteristics of children by playgroup attendance (Tasmania)

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes N (%)	No N (%)	Yes N %	No N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
Tasmania	2,113 (66.2)	1,087 (33.8)	2,247 (67.5)	1,083 (32.5)
Sex				
Male	1,077 (64.1)	602 (35.9)	1,115 (65.2)	595 (34.8)
Female	1,056 (68.5)	485 (31.5)	1,132 (69.9)	488 (30.1)
Indigenous				
Non-Indigenous	2,006 (67.3)	975 (32.7)	2,046 (68.1)	958 (31.9)
Indigenous	127 (53.1)	112 (46.9)	201 (61.7)	125 (38.3)
Country of birth				
Australia	2,085 (66.8)	1,035 (33.2)	2,210 (68.1)	1,033 (31.9)
Other Country	23 (34.8)	43 (65.2)	23 (34.8)	43 (65.2)
Other English Speaking Country	25 (73.5)	9 (26.5)	14 (66.7)	7 (33.3)
Language background other than English				
No	2,079 (66.9)	1,027 (33.1)	2,181 (68.6)	997 (31.4)
Yes	54 (47.4)	60 (52.6)	66 (43.4)	86 (56.6)
Socio-economic status of communities where children live				
Quintile 1 (<i>most disadvantaged</i>)	806 (60.6)	525 (39.4)	812 (63.4)	468 (36.6)
Quintile 2	457 (72.0)	178 (28.0)	584 (71.5)	233 (28.5)
Quintile 3	401 (74.8)	135 (25.2)	352 (71.0)	144 (29.0)
Quintile 4	411 (65.0)	221 (35.0)	426 (67.6)	204 (32.4)
Quintile 5 (<i>least disadvantaged</i>)	58 (71.6)	23 (28.4)	73 (68.2)	34 (31.8)



Table 17: Demographic characteristics of children by playgroup attendance (ACT)

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes N (%)	No N (%)	Yes N %	No N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
Australian Capital Territory	516 (34.3)	987 (65.7)	369 (35.9)	703 (65.6)
Sex				
Male	268 (34.1)	517 (65.9)	184 (34.1)	356 (65.9)
Female	238 (34.5)	470 (65.5)	185 (34.8)	347 (65.2)
Indigenous				
Non-Indigenous	506 (34.5)	959 (65.5)	359 (34.5)	683 (65.5)
Indigenous	10 (26.3)	28 (73.7)	10 (33.3)	20 (66.7)
Country of birth				
Australia	482 (35.8)	863 (64.20)	346 (36.1)	612 (63.9)
Other Country	12 (12.0)	88 (88.0)	9 (12.3)	64 (87.7)
Other English Speaking Country	22 (37.9)	36 (62.1)	14 (34.1)	27 (65.9)
Language background other than English				
No	459 (39.0)	748 (62.0)	327 (38.9)	513 (61.1)
Yes	57 (19.3)	239 (80.7)	42 (18.1)	190 (81.9)
Socio-economic status of communities where children live				
Quintile 1 (<i>most disadvantaged</i>)	< 5 (-)	< 5 (-)	< 5 (-)	< 5 (-)
Quintile 2	< 5 (-)	10 (100.0)	< 5 (-)	6 (75.0)
Quintile 3	< 5 (-)	6 (60.0)	< 5 (-)	< 5 (-)
Quintile 4	210 (38.7)	332 (61.3)	124 (33.2)	250 (66.8)
Quintile 5 (<i>least disadvantaged</i>)	301 (32.0)	639 (68.0)	241 (35.3)	442 (64.7)



Table 18: Demographic characteristics of children by playgroup attendance (Northern Territory)

	Did the child attend playgroup before entering full time school?			
	2012		2015	
	Yes N (%)	No N (%)	Yes N %	No N %
Australia	42,952 (36.0)	76,293 (64.0)	40,743 (35.5)	73,999 (64.5)
Northern Territory	447 (29.5)	1,069 (70.5)	485 (35.9)	866 (64.1)
Sex				
Male	206 (25.7)	596 (74.3)	257 (36.0)	456 (64.0)
Female	241 (33.8)	473 (66.2)	228 (35.7)	410 (64.3)
Indigenous				
Non-Indigenous	232 (33.2)	467 (66.8)	211 (35.3)	387 (64.7)
Indigenous	215 (26.3)	602 (73.7)	274 (36.4)	479 (63.6)
Country of birth				
Australia	431 (30.4)	989 (69.6)	474 (36.9)	812 (63.1)
Other Country	9 (12.2)	65 (87.8)	< 5 (-)	42 (91.3)
Other English Speaking Country	7 (31.8)	15 (68.2)	7 (36.8)	12 (63.2)
Language background other than English				
No	235 (33.2)	472 (66.8)	211 (34.3)	405 (65.7)
Yes	212 (26.2)	597 (73.8)	274 (37.3)	461 (62.7)
Socio-economic status of communities where children live				
Quintile 1 (<i>most disadvantaged</i>)	207 (29.5)	494 (70.5)	270 (40.0)	405 (60.0)
Quintile 2	33 (24.8)	100 (75.2)	37 (33.9)	72 (66.1)
Quintile 3	78 (27.8)	202 (72.1)	76 (26.8)	208 (73.2)
Quintile 4	74 (29.7)	175 (70.3)	58 (37.4)	97 (62.6)
Quintile 5 (<i>least disadvantaged</i>)	55 (35.9)	98 (64.1)	40 (33.1)	81 (66.9)

