Footprints in Time

LSIC Housing Research Report

May 2024

Professor Michael Dockery and Associate Professor Megan Moskos

Acknowledgements

This report uses unit record data from the Longitudinal Study of Indigenous Children (LSIC) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

LSIC was initiated and is funded and managed by the Australian Government Department of Social Services (DSS).

The HILDA Project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute).

The findings and views reported in this paper, however, are those of the authors and should not be attributed to DSS or the Indigenous people and their communities involved in the LSIC, or to the Melbourne Institute.

The authors would like to thank our Indigenous research partners Jessie Sleep and Patrick Sharpe, Far West Community Partnerships (FWCP) and Vanessa Davis and Denise Foster, Tangentyere Council Research Hub for their guidance of the analysis of the LSIC data and culturally appropriate interpretation of the research findings. The authors would also like to thank the Indigenous housing stakeholders from across Australia who informed the design and focus of the report and the policy relevance of the findings.

Nganampa Ngurra (Home)

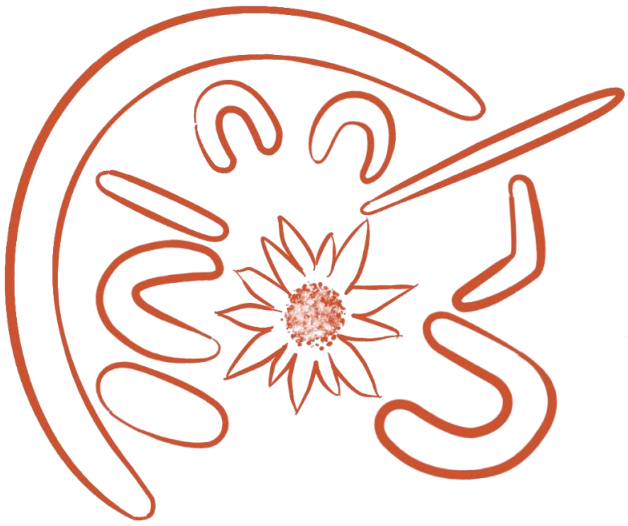
Vanessa Davis is a proud Warlpiri and Arrernte woman. She is an artist and Senior Researcher at Tangentyere Council based in Alice Springs, Northern Territory. Vanessa has over 20 years of experience in social research. In her work she has sensitised non-Indigenous researchers to the importance of doing things the right way with Aboriginal people.
Nganampa Ngurra - Ampere Anunakene - Home **was painted by Vanessa for the** ***Footprints in Time*** **Housing Research Report.**

When I was painting, I was thinking about my own happy childhood growing up on Hamilton Downs and my connection to Country and culture.

My painting represents the many experiences of home and homelessness. The traditional symbols show a family is gathered and there's shelter and a fire. A coolamon and digging stick are placed beside the mother and a boomerang and spear beside the father. The painting depicts a family that is protected, nurtured, connected to Country and culture. The footprints tell the journeys of those seeking the security and stability of home and connection to Country.

Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index of Australia
COVID-19	Coronavirus disease of 2019
DSS	Department of Social Services (Commonwealth)
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs
HILDA	Household, Income and Labour Dynamics in Australia survey
LSAC	Longitudinal Study of Australian Children
LSIC	Longitudinal Study of Indigenous Children
NAPLAN	National Assessment Program – Literacy and Numeracy
P1	Parent 1 (responding main parent or carer)
SC	Study Child
SDQ	Strengths and Difficulties Questionnaire
SEIFA	Socio-economic indices for areas
SCRGSP	Steering Committee for the Review of Government Service Provision



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Executive Summary

The Longitudinal Study of Indigenous Children (LSIC) provides an invaluable source of data on the childhoods of Indigenous Australians and the factors that can help them grow up strong.

Utilising the LSIC data, the *Housing Research Report* seeks to provide both a descriptive overview of the housing circumstances that Indigenous children and their families live in, and the way housing-related factors can help or hinder those children growing up strong.

The analysis in the report is based on the public-release datasets for LSIC Waves 1 to 13, corresponding to surveys undertaken from 2008 to 2020, as well as the text of responses to open ended questions asked in Waves 6, 9, and 15.

Two of the major dimensions explored in the analyses are housing tenure and remoteness. The main categories of tenure are homeowners and renters, with renters further distinguished by whether they rent from a community housing organisation, in state government (public) housing, or in the private rental market. Remoteness is measured using a scale with five classifications: Major Cities, Inner Regional, Outer Regional, Remote, and Very Remote Australia.

The families, houses, and communities Indigenous children live in

The majority of LSIC children live in non-remote areas, comprising 26 per cent in major cities, 25 per cent in inner regional locations, and a further 13 per cent in Outer Regional Australia. A sizeable portion of LSIC children live in remote locations and around one in five in very remote areas.

The vast majority of LSIC children live with one or more of their parents in detached houses.

Most of the children's parents or carers were renting their home, with two thirds renting from a government housing authority, or a community or cooperative housing group (mostly Indigenous community controlled organisations).

On average, there were 5 occupants in the study children's households, consisting of an average 2.8 children and 2.2 adults, and the most common number of occupants was 4. This was higher in Remote and Very Remote Australia.

While LSIC children tended to reside in areas classified by high socioeconomic disadvantage, the vast majority of parents considered their neighbourhood or community favourably in terms of it being good for children, having good places to play and being safe. LSIC parents also expressed high levels of satisfaction with the home in which they lived.

LSIC parents in Remote and Very Remote Australia express notably high satisfaction in terms of feeling part of the local community and, to a lesser extent, with the neighbourhood in which they live.

To further explore the factors associated with variation in the housing circumstances that the families of Indigenous children live in, and how those housing circumstances affect the life experiences of children and their parents, multivariate regression models were estimated. These indicate:

- Parents with better self-assessed health, higher educational attainment, homeowners and those living in very remote areas or a higher socio-economic area report more favourable ratings of whether communities were good for kids, had good places to play, and were safe.
- Public housing tenants, particularly those in mainstream public housing, provide the worst ratings on all three indicators in terms of the quality of the community for little kids and safety.
- Parents in homeownership are significantly more satisfied with the house in which they live.
- Parents in Very Remote Australia are the most satisfied with the homes in which they live, after controlling for other factors.
- Parents living in Remote and Very Remote Australia are the most satisfied with their sense of being part of the local community. Those living in the Major Cities are least satisfied on this dimension by a considerable margin.
- Parents living in Very Remote Australia report the highest level of satisfaction with the neighbourhood in which they live, followed by those in Outer Regional Australia.
- Satisfaction with the home and neighbourhood in which you live increases with the decile of socio-economic advantage of the neighbourhood.

Good and bad things about where Indigenous children live

In Wave 6 and 9 LSIC parents and carers and in Wave 15, LSIC children were given the opportunity to use their own words to describe some of the good things about the area where they lived.

Respondents most frequently reported aspects of the community, environment/location in which they lived and the lifestyle it afforded as the being a good thing about where they currently live. These aspects were especially important for the LSIC children when they were younger.

Another frequently mentioned positive aspect about the area in which participants lived was that it was quiet and safe. As children got older, this theme decreased in importance.

Being close to public transport, shops, schools, and other key services was also a major contributor to participants' positive feelings about where they lived. Although a prevalent theme at all waves, at Wave 15 when the study child was given the opportunity to answer this question for themselves we see this as being the most frequently identified positive aspect of the area in which they live.

Living in an area near family and which had cultural connection was reported as being a positive aspect of where respondents lived, and again this increased considerably over time.

At Wave 15, LSIC children were asked what some of the not so good things were about where they lived. Accounts were highly interrelated to the things that they liked about where they live. Therefore, living in an area with limited activities and events, that was noisy and unsafe, or with bad neighbours was seen in a negative light.

State of repair, working facilities and maintenance challenges

Around 40 per cent of LSIC parents reported that their home had major things that needed fixing and many also reported that they faced difficulties in getting those repairs done.

The proportion of homes reported as having major things that needed fixing was higher in remote areas.

Rental properties in the community housing and public housing sectors were most commonly identified as being in need of major repairs.

Multivariate estimates indicate:

- Homeowners and private renters are significantly less likely to report that their home is needing major repairs compared to public housing or community housing tenants.
- The likelihood of needing repairs is higher in Remote and Very Remote Australia.
- Parents are more likely to report needing major repairs if they live in neighbourhoods of higher socio-economic disadvantage, and when occupancy density is higher.
- Living in a house needing major repairs is associated with worse outcomes for the parent and study child's social and emotional wellbeing and the parent's general health and coping ability.

Housing dynamics and trajectories

Between one in four and one in five LSIC children change their address each year.

The most common reasons for moving were related to housing (54 per cent of moves), followed by family reasons (27 per cent), and lifestyle/other reasons (11 per cent).

The propensity to move was highest for families living in Remote Australia.

Children in Very Remote Australia experienced the most stable housing, with only 17 per cent observed to change address each year.

Multivariate evidence indicates:

- Private renters are significantly more likely to change address, and homeowners significantly less likely to move.
- Those in Outer Regional Australia and in Remote Australia are most likely to move.
- Higher occupant density is associated with a greater propensity to move house.
- Sole-parents experience more housing instability than couple parents.
- A modest negative but highly significant association was observed between the number of moves in the past two waves and four of the NAPLAN test scores: reading, spelling, grammar, and numeracy.

Experiences of homelessness

Close to one in every ten LSIC parents have experienced homelessness in the past five years.

The main reasons cited for being homeless related to difficulties with personal relationships, including relationship breakdowns, domestic violence, and other friction between household members ('overcrowding/asked to leave/timeout from family').

Multivariate evidence indicates that experiencing homelessness in the past five years is associated with substantially lower parental health. Surprisingly, however, no evidence of a negative effect on the parental assessments of the health of the study child was identified, even when the child was with the parent during the episode of homelessness.

Growing up strong and housing pathways

The housing experiences of the study children over the course of their childhoods are extremely diverse, dynamic, and complex.

To explore the range of housing pathways, families' experiences were demarcated by five key dimensions over time: household density (or 'crowding'), family structure (sole-parent versus couple households), state of repair of the homes, and frequency of address changes.

Despite this diversity of housing pathways there is limited difference in the youths' assessments of their health and social and emotional wellbeing with respect to their satisfaction with their lives, optimism about their futures, and their emotional wellbeing and resilience as measured by the Strong Souls instrument.

Chapter 1: Introduction

Footprints in Time, or the Longitudinal Study of Indigenous Children, has tracked a large sample of Aboriginal and Torres Strait Islander children and their families from early childhood through to their teenage years. The survey provides an invaluable source of data on the childhoods of Indigenous Australians and the factors that can help them grow up strong. Along with annual reports providing summaries of key findings following each Wave of the survey, and a series of occasional papers and data highlight briefs, the Department of Social Services has commissioned special topic research reports based on the LSIC data.

This *Housing Research Report* is the second of those reports, following the *Primary School Report* (Rogers et al. 2022). The *Housing Research Report* seeks to provide both a descriptive overview of the housing circumstances that Indigenous children and their families live in, and the way housing-related factors can help or hinder those children growing up strong. It marks a collaboration between researchers at the University of Adelaide, Curtin University, and Indigenous researchers from the far west coast in South Australia and Alice Springs in the Northern Territory.

The analysis in the report is based on the public-release datasets for LSIC Waves 1 to 13, corresponding to surveys undertaken from 2008 to 2020. The team was also provided qualitative data in the form of the text of the responses to open ended questions, and this included access to relevant questions asked of the study children themselves in Wave 15 (2022). A brief overview of the *Footprints in Time* project and the survey data is provided in the following chapter.

Chapter 3 provides a statistical overview of the characteristics of the families and houses in which the study children lived. Chapter 4 contains the qualitative analysis of what the parents said were the good and bad things about the communities in which they lived, along with analyses of the study children's own views expressed in Wave 15. Chapters 5 to 7 look at data on the maintenance issues, housing dynamics, and homelessness. Finally, Chapter 8 presents a cluster analysis which summarises the very diverse housing experiences of the study children over time into four distinct pathways, and identifies the key characteristics of those pathways. The final Chapter 9 draws together some of the key findings and reflects on their implications for policy, practice and further research.

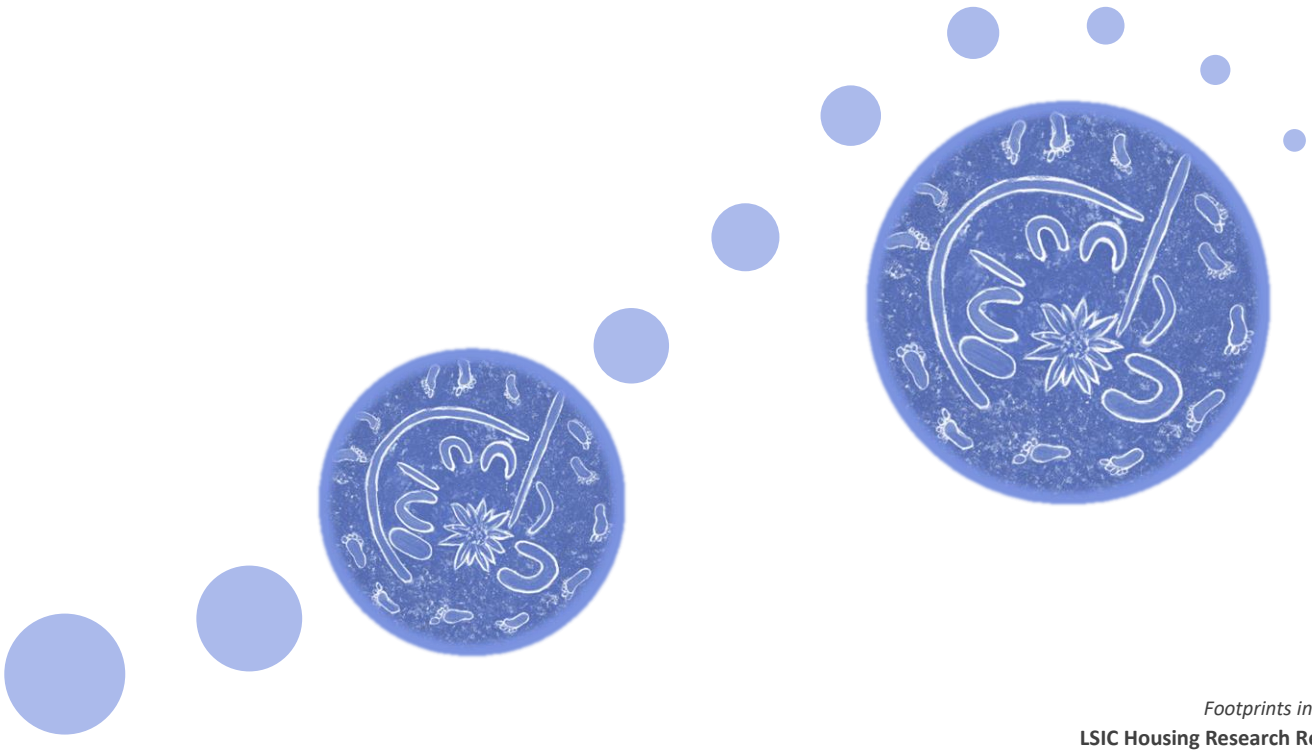
We have tried to keep the main analytical chapters as narrative and accessible as possible. Two key dimensions by which experiences are contrasted are remoteness and type of housing tenure (private rental, public or community housing and homeownership) given the potential implications of these relationships for policy. Multivariate models that seek to identify independent associations between housing factors and a range of outcomes for parents and carers (physical health, social and emotional wellbeing, and resilience) and for the study children (general health, social and emotional development, educational achievement, and resilience) are also estimated. The results of that modelling are summarised in the relevant chapters, with methodological details and empirical results contained in the Appendices.

Children's life experiences and housing circumstances are highly diverse. Some are remarkably stable, some remarkably dynamic.

A key finding, emphasised in the pathway analysis, is that Indigenous children across the array of housing circumstances can and do grow up strong. As the Chair of the *Footprints in Time* Steering Committee, Mick Dodson, observed in his foreword to the Wave 1 Summary report:

"We all know that children need more than just a roof over their heads—love, understanding and encouragement are just as important." (FaHCSIA 2009: 3)

The report has benefited greatly from two project roundtables, one held in the formative stage of the research in May of 2023, and a second held in April of 2024 to review the findings and consider their implications. The report and its findings have also been shaped by extensive consultations with Indigenous housing leaders and practitioners across Australia. We would like to acknowledge the input and insights provided by the key stakeholders who participated in those roundtables and consultations.



Chapter 2: *Footprints in Time* (The Longitudinal Study of Indigenous Children)

The Longitudinal Study of Indigenous Children (LSIC), also known as *Footprints in Time*, was initiated by the Commonwealth Government[1] with the principal objective to "… provide high quality quantitative and qualitative data that can be used to provide a better insight into how a child's early years affect their development." (FaHCSIA 2009: 6). Funding for the study was first provided in the 2003-04 Commonwealth Budget, facilitating the establishment of a Steering Committee and extensive consultations with Indigenous peoples and communities to ensure their viewpoints and priorities were reflected in the study's design and in the questionnaires (FaHCSIA 2009).

Following the process of study design, questionnaire development, pilot testing, and recruitment, the Wave 1 interviews commenced in April of 2008. The establishment of the *Footprints in Time* panel was timely. Growing recognition of the need to address inequalities in justice, health and other outcomes between Indigenous and non-Indigenous Australians saw the signing of the National Indigenous Reform Agenda by the Council of Australian Governments in that same year, and establishment of the 'Closing the Gap' targets (see SCRGSP 2009).

Four of the six original Closing the Gap targets directly relate to outcomes for Indigenous children: child mortality, early childhood education, achievement in reading, writing, and numeracy, and year 12 attainment rates (SCRGSP 2009: 11). Against this backdrop, the urgent need for an evidence-base to guide policy development was recognised. Importantly, given the deficit connotations inherent in much of the Closing the Gap narrative, the *Footprints in Time* consultation process stressed the importance that the study also focus on resilience and positive elements of the lives of Indigenous children and their families. The following four key research questions were formulated (FaHCSIA 2009):

- What do Aboriginal and Torres Strait Islander children need to have the best start in life to grow up strong?
- What helps Aboriginal and Torres Strait Islander children to stay on track or get them to become healthier, more positive and strong?
- How are Aboriginal and Torres Strait Islander children raised?
- What is the importance of family, extended family and community in the early years of life and when growing up?

[1] The study was developed within the portfolio of what was then Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA). Oversight and funding of the project continued under a newly formed Department of Social Services following a restructuring of Commonwealth departments in 2013.

Like the Longitudinal Study of Australian Children (LSAC), which commenced in 2004, the LSIC study design included children from two cohorts; a 'Baby' cohort aged 6 to 18 months at the time of the first interview, and a 'Child' cohort aged $3^1/_2$ to $4^1/_2$ years. The sample was drawn from 11 sites around Australia designed to '... cover the range of socioeconomic and community environments where Aboriginal and Torres Strait Islander children live' and provide roughly equal representation of urban, regional, and remote areas. The original sampling design was to include 150 children from each of those 11 sites, translating to a total initial sample of 1,650 children and their families. However, challenges recruiting participants in the target age groups, notably in smaller communities, resulted in fewer participants in some areas, compensated by additional participants in others. As set out by Hewitt (2012), this two-stage or 'cluster' sampling means that the probability of participants being selected into the study was not random across the relevant Indigenous population, and has implications for statistical inference and approaches to modelling with the data.

In total, data were made available for 1,671 study children and their families who participated in the Wave 1 interviews, 964 as part of the Baby cohort and 707 as part of the Kids cohort, providing an initial sample marginally larger than the original 1,650 target. An additional 88 new entrants joined the survey in Wave 2, partly in response to a strong desire by other families in some regional and remote communities to be part of the study (FaHCSIA 2011: 20).

Interviews are conducted annually with the parent or carer who 'knew the child best' primarily through face-to-face interviews, although provision has been made in later waves of the survey for phone interviews and on-line questionnaires. Those parents or carers are known as 'Parent 1' (denoted as P1). In most survey years data were also collected from the children's second parent where applicable ('Parent 2' or 'P2') and from the children's teachers in many of the relevant school years.

Table 1 shows the response rates by cohort from Wave 1 through to Wave 13. The Wave 12 survey generated responses for 1,212 participants, representing a quite remarkable retention rate of around 70 per cent of the children who commenced the survey in Waves 1 and 2 over a decade earlier. The COVID-19 pandemic resulted in a substantial fall in responses to Wave 13 to 774, with the data from that wave collected in 2020, but hopefully the response rate will have recovered when data are released for Wave 14.

With data collection for Wave 15 having been completed during 2023, *Footprints in Time* has already well exceeded the initial expectations for its longevity: "It is intended under the current project that children and their families will be interviewed at yearly intervals until 2011" (FaHCSIA 2009: 7)

Data collected and outcomes from the LSIC

Footprints in Time collects information on a wide range of topics. The surveys include 'modules' on the broad topics of the household, child health, parent health, child and family functioning, and socio-demographics. Each of these modules contain a number of sub-topics. Where appropriate approvals could be obtained, the LSIC records are matched to the study child's individual test results from the National Assessment Program – Literacy and Numeracy (NAPLAN), to data on their school contained in the MySchool database, and to neighbourhood area measures contained in the Australian Early Development Census and Australian Bureau of Statistics' socio-economic indices for areas. The resulting dataset contains a vast array of measures of early child physical, cognitive, and socio-emotional development and ongoing health, wellbeing, and educational outcomes, coupled with extensive background information on the families and their communities.

The wealth of data collected is reflected in the volume and breadth of publications that have drawn on the LSIC data. A condition of accessing the data as a researcher is to lodge the details of any resultant publications with the bibliographic database managed by DSS for each of its longitudinal studies.

At the time of writing, this contained well over 100 publications based on the LSIC, including an edited collection of research papers based on findings from the LSIC (Walter, Martin and Bodkin-Andrews 2017), and over 50 articles in peer-reviewed journals. Key topic areas for this body of research have been the determinants of health and wellbeing for Indigenous children and parents; children's education outcomes; racism and discrimination; culture and identity, and language.

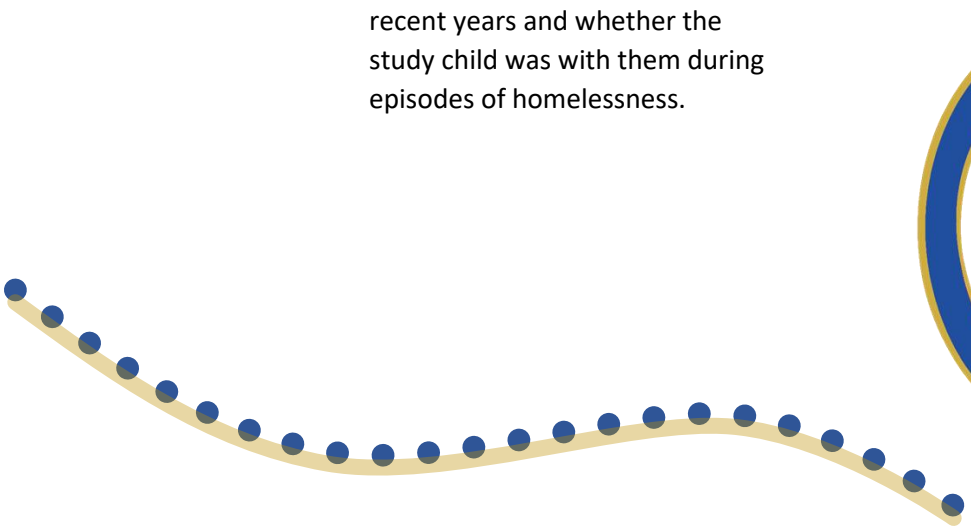
Relatively few of those studies have focussed on housing, despite the prominence of housing issues in discourses relating to Indigenous disadvantage and remote communities (see, for example, Dockery 2022). A 2010 scoping study released by the Australian Housing and Urban Research Institute on the links between housing and children's development and wellbeing identified analyses of the LSIC as providing "… the best publicly available dataset for assessing the link between housing and the developmental outcomes of Indigenous children." (Dockery et al. 2010: 59). The subsequent evolution of *Footprints in Time* in terms of the panel dimension, participant retention, and information collected reinforces that assessment, with the potential to expand the range of outcomes assessed from early child development through to the school-to-work transition.

Some of the major housing-related data items available in various waves of the LSIC are:

- Characteristics of the house – dwelling type, rental/ownership tenure, number of bedrooms, working appliances/facilities and whether these are shared with other families
- Household composition – parents' marital status, number of occupants, household relationships
- Street type and traffic flow
- Community/neighbourhood amenity – feelings of safety, quality of play areas, community cohesion
- State of repairs – need for major repairs and type of repairs needed, experiences getting repairs done
- Housing stability/mobility
- Geography – remoteness, indices relating to neighbourhood socio-economic composition
- Homelessness – parent's experiences of homelessness in recent years and whether the study child was with them during episodes of homelessness.

As detailed in the following chapters, most of these items are collected intermittently across waves, and some collected only if the study child has moved house since the preceding wave. In addition to quantitative or categorical data collected through survey questionnaires, participants' responses to some open-ended questions put to the study children and to their parents or carers were recorded verbatim, therefore supporting qualitative analyses. These included questions on their attitudes towards the communities in which they lived.

This report presents a detailed picture of the housing circumstances in which Aboriginal and Torres Strait Islander children live, and how this shapes their lives as they grow up. Even focussing on data relating to housing, it is only possible to cover a selected subset of potential topics and the boundaries of what is and what is not 'housing related' are far from clear. Housing is inextricably nested within family relationships, socio-economic strata, and in neighbourhood and community environments.



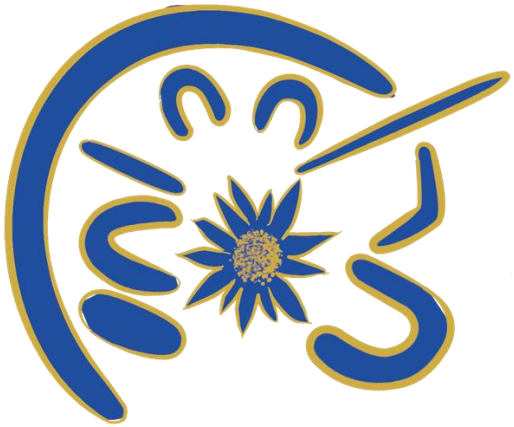


Table 1: LSIC responding sample by cohort and wave: Waves 1 to 13

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Wave	W 1	W 2	W 3	W 4	W 5	W 6	W 7	W 8	W 9	W 10	W 11	W 12	W 13
Baby cohort													
Age (years)	½-2	1½-3	2½-4	3½-5	4½-6	5½-7	6½-8	7½-9	8½-10	9½-11	10½-12	11½-13	12½-14
Responding sample	**964**	**881**	**834**	**754**	**735**	**747**	**734**	**759**	**757**	**762**	**754**	**740**	**494**
Child (kids) cohort													
Age (years)	3½-5	4½-6	5½-7	6½-8	7½-9	8½-10	9½-11	10½-12	11½-13	12½-14	13½-15	14½-16	15½-17
Responding sample	**707**	**649**	**595**	**536**	**532**	**508**	**524**	**506**	**516**	**514**	**502**	**472**	**280**
Total responding sample	**1,671**	**1,530**	**1,429**	**1,290**	**1,267**	**1,255**	**1,258**	**1,265**	**1,273**	**1,276**	**1,256**	**1,212**	**774**

Chapter 3: The families, houses, and communities Indigenous children live in

KEY FINDINGS

The majority of LSIC children live in non-remote areas, comprising 26 per cent in major cities, 25 per cent in inner regional locations, and a further 13 per cent in Outer Regional Australia. The remaining 36 per cent of LSIC children live in remote locations, with around one in five study children living in very remote areas.

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Most of the children's parents or carers were renting their home, with two thirds renting from a government housing authority, or a community or cooperative housing group (mostly Indigenous community controlled organisations).

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These indicate:

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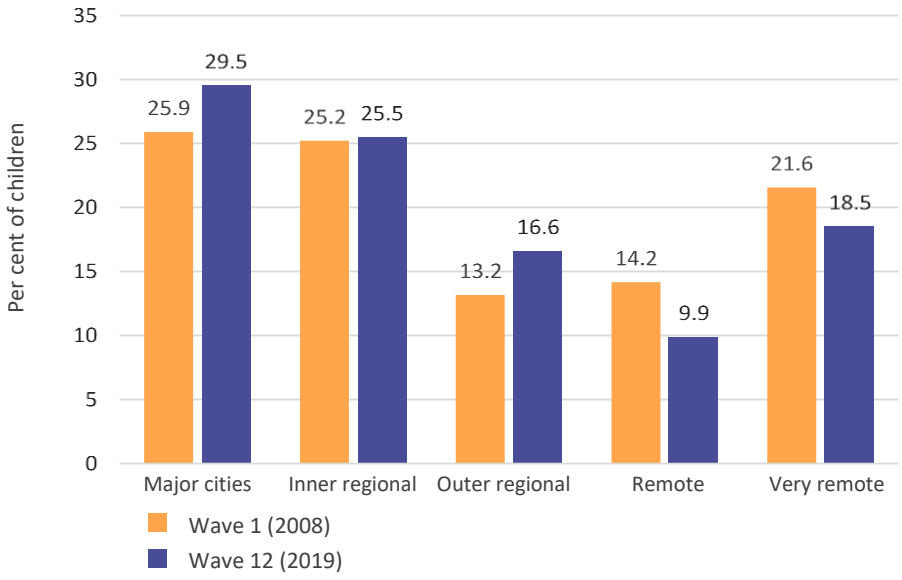
- Public housing tenants provide the worst ratings on all three indicators, particularly those living in mainstream public housing in terms of the quality of the community for little kids and safety.
- Parents in homeownership are significantly more satisfied with the house in which they live.
- Parents in Very Remote Australia are the most satisfied with the homes in which they live, after controlling for other factors.
- Parents living in Remote and Very Remote Australia are the most satisfied with their sense of being part of the local community. Those living in the Major Cities are least satisfied on this dimension by a considerable margin.
- Parents living in Very Remote Australia report the highest level of satisfaction with the neighbourhood in which they live, followed by those in Outer Regional Australia.
- Satisfaction with the home and neighbourhood in which you live increases with the decile of socio-economic advantage and disadvantage of the neighbourhood.

Footprints in Time began with interviews of the carers of 1,671 Indigenous children in 2008. To paint a picture of their housing circumstances, this section primarily focusses on descriptive data from that first wave, when the sample is largest. However, it also looks at transitions between Wave 1 and Wave 12. Transitions to Wave 12 are analysed given the large drop in the number of respondents from 1,212 in Wave 12 to just 774 in Wave 13 due to COVID-19. Housing transitions are looked at in more detail in Chapter 6.

Key housing characteristics – a descriptive overview

Around one-half of the children in the initial sample were living in major cities or regional towns. Roughly equal proportions lived in Outer Regional Australia (13 per cent) and Remote Australia (14 percent). Around one-in-five of the Indigenous children lived in areas classified as Very Remote, and many of these in remote areas will have been living in discrete Aboriginal communities. As shown in Figure 1, by Wave 12 a lower proportion of the sample children were living in Remote and Very Remote Australia compared to when the survey commenced.[2]

Figure 1: Where did the sample children live in Waves 1 and 12?



[2] Throughout the paper the Accessibility/Remoteness Index of Australia (ARIA) is used to measure remoteness in preference to the Level of Relative Isolation (LORI) measure, which is also available as a derived variable in the LSIC data. Capital letters are used when referring specifically to any of the 5 classes of ARIA (eg. 'Very Remote Australia'). This is to distinguish between more general use of terms such as regional or remote Australia.

Whether living in cities or remote Australia, the vast bulk of children were living with one or both of their parents in Wave 1. For children living with a parent, a substantial proportion lived with a sole-parent (44 per cent), and this was most common in Inner Regional Australia (56 per cent). For the 75 study children not living with a parent, the carers were primarily grandparents followed by aunties and uncles, and other extended family. Three-quarters of the study children had siblings or other children living in their household. Households in which other adults lived along with the child and their parent(s)/carer(s) were common (30 per cent). Some of these are likely to be adult siblings.

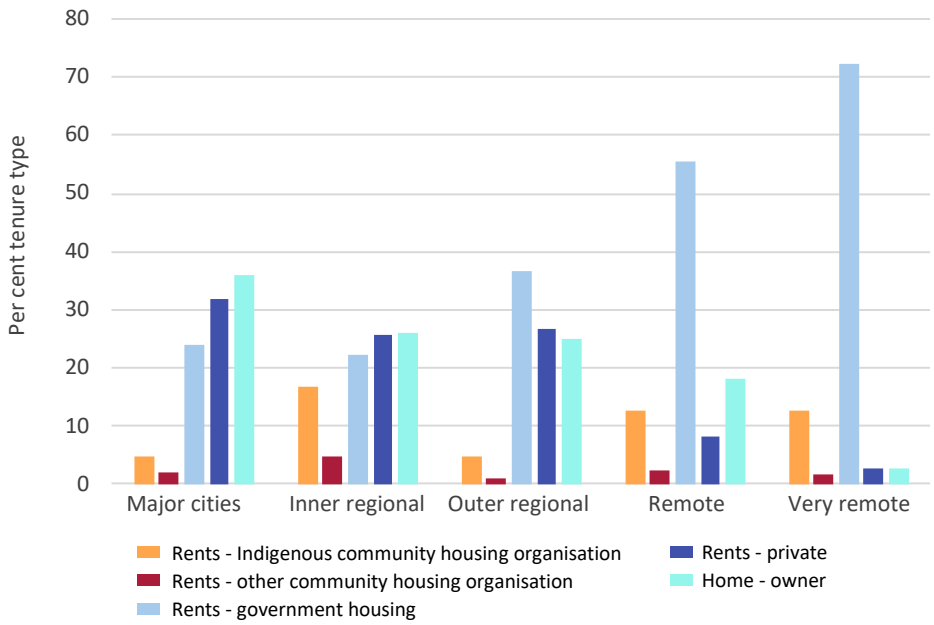
The *Footprints in Time* interviewers recorded observations about the physical characteristics of the child's home and of the street and immediate surrounds. These included the type of dwelling, whether it was on a main road and the traffic flow. If the interview was not taking place at the study child's usual home, the responding parent or carer instead provided assessments of these characteristics. Nearly all the families lived in a separate house. Of the roughly 1 in 10 children who did not live in a separate house, around half lived in what were described as semi-detached terrace or town houses, and most of the remaining families lived in a flat or apartment. A small handful of children – less than one per cent of the sample - lived in other types of dwellings, including in caravan parks, improvised homes or camps, or a dwelling attached to a shop or office.

Private homeownership was relatively rare among the children's parents and carers. Around 4 in 5 of the households were renting the dwelling in which they lived in Wave 1. Among those renters, around half were renting from a government housing authority, one quarter from a community or cooperative housing group (mostly Indigenous community controlled organisations)[3] and one-quarter lived in a property rented through the private market. Fourteen per cent were homeowners, and most were currently paying off a mortgage with just a handful owning the home outright.

[3] In the initial waves of the survey, the response options to the question on housing tenure included renting from a community or cooperative housing group but did not separately identify those who rented from an Indigenous Community Housing Organisation. This category was separately recorded from Wave 3 onward, but after recording tenure status in Wave 1, the question was only asked again if the family moved house. In Wave 8, the question was asked again of all the full responding sample. Results from this wave show that those families previously identified as renting from community or cooperative housing groups were primarily renting from Indigenous Community Housing Organisations.

Housing tenure differs markedly by region. Drawing on the Wave 8 data, Figure 2 shows that homeownership and private rental were the most common tenures in the Major Cities and Inner Regional areas. Renting from a state housing authority is common in all areas, but the proportion living in public housing rises dramatically with remoteness. Among the families living in Very Remote Australia, almost three quarters lived in public housing. Homeownership and renting privately is rare in Very Remote areas. Renting from an Indigenous Community Housing Organisation is most common in Inner Regional areas (17 per cent of families), and in Remote and Very Remote Australia (13 per cent of families in both cases).

Figure 2: Main tenure types by remoteness; Wave 8



The number of occupants in the homes, including the study child, ranged from 2 to as many as 22 in Wave 1. On average, there were 5 occupants in the study children's households, consisting of an average 2.8 children and 2.2 adults, and the most common number of occupants was 4. The average occupancy was around 1 person per household higher in Remote and Very Remote Australia, and it is in those outer regions that the examples of very large households were primarily to be found. Most dwellings (61 per cent) had three bedrooms, but one dwelling had as many as 7 bedrooms.

On average, households had 1.6 occupants per bedroom.[4] Again, this was higher in Remote Australia (2.0 occupants per bedroom) and Very Remote Australia (1.9 occupants per bedroom). In part, this is because houses in Remote and Very Remote areas had fewer bedrooms on average, but the main factor driving the difference is simply the higher number of occupants.

[4] For all calculations of the ratio of residents to bedrooms, dwellings recorded as having no bedrooms were recoded one as having one bedroom.

Street and neighbourhood

Perhaps a surprising result from the Wave 1 surveys is that a higher proportion of the study children in Remote and Very Remote Australia lived on what were described as 'main roads' compared to children living in non-remote Australia. Children in Remote and Very Remote Australia were particularly more likely to live in a home situated on a single-lane main road (see Figure 3). However, the traffic flow on those main roads tended to be assessed as lighter than in the cities and major towns. It should be acknowledged that interviewers and respondents in suburban areas may have judged the meaning of 'main' road and the assessment of light versus heavy traffic differently to those out in the country. The upshot is that for children in Very Remote Australia and in Major Cities, the assessments of traffic flow are really quite similar (Figure 4). It is children's homes in Remote Australia that are most likely to be assessed as being on a street with heavy traffic, and least likely to be situated on a road with very light traffic: not homes in the major cities and towns as may have been expected.

Figure 3: Proportion of homes located on a main road by remoteness, Wave 1

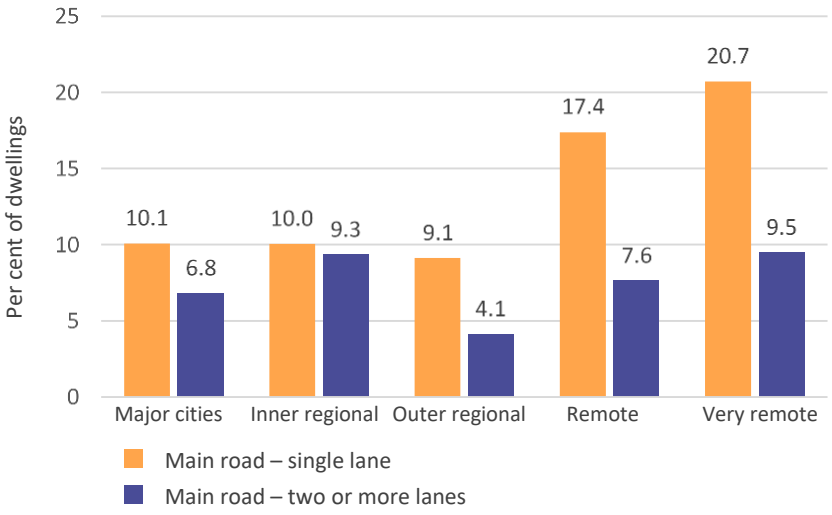
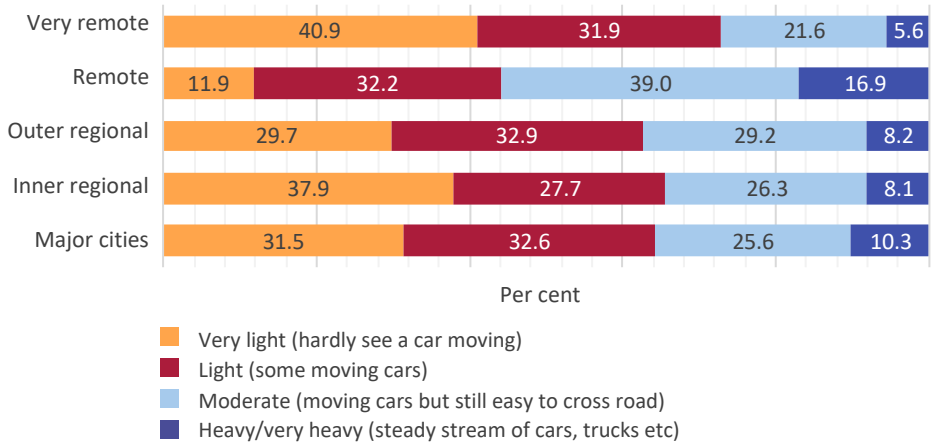


Figure 4: Traffic flow on children's streets, by remoteness, Wave 1

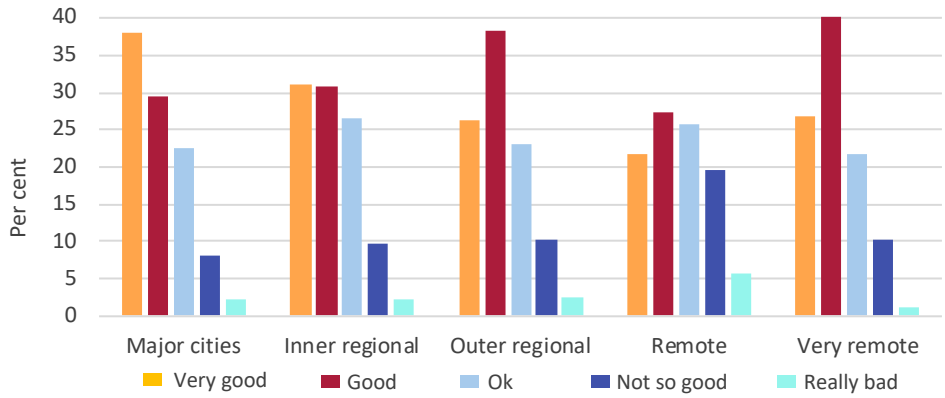


The study children's addresses were coded to deciles against the Australian Bureau of Statistics' socio-economic indices for areas (SEIFA, see Adhikari 2006). The indices are based on the socio-economic characteristics of people living in each area, with the areas ranked into deciles where decile 1 contains the tenth most disadvantaged areas, and decile 10 the tenth most privileged areas by each measure. The LSIC data include the decile of the study child's neighbourhood for the SEIFA for socio-economic advantage and disadvantage, economic resources, and education and occupation. It is clear that most study children live in areas in which people are relatively disadvantaged by these standard measures of socio-economic status. However, it must be noted that those measures may not reflect the values and priorities that Indigenous Australians may place on the attributes of a neighbourhood's population. For example, the SEIFA for education and occupation equates highest formal educational qualification as an indicator of an individual's socioeconomic standing, but places no weight on traditional Indigenous cultural knowledge.

With this reservation in mind, in terms of the index for socioeconomic advantage and disadvantage, 43 per cent of homes in the initial Wave 1 sample were in the bottom decile, and 81 per cent were in the lowest 5 deciles. By definition, this compares to 10 percent of all households in the Australian population being in the bottom decline, and one-half in the lowest 5 deciles. The proportions for the LSIC sample are similar for the SEIFA for economic resources. For the education and occupation SEIFA, the LSIC sample is not so concentrated in the bottom decile (35 per cent), but equally concentrated in the bottom 5 deciles (84 per cent). For all three indices, less than one per cent of the study children's homes were in areas in the top decile.

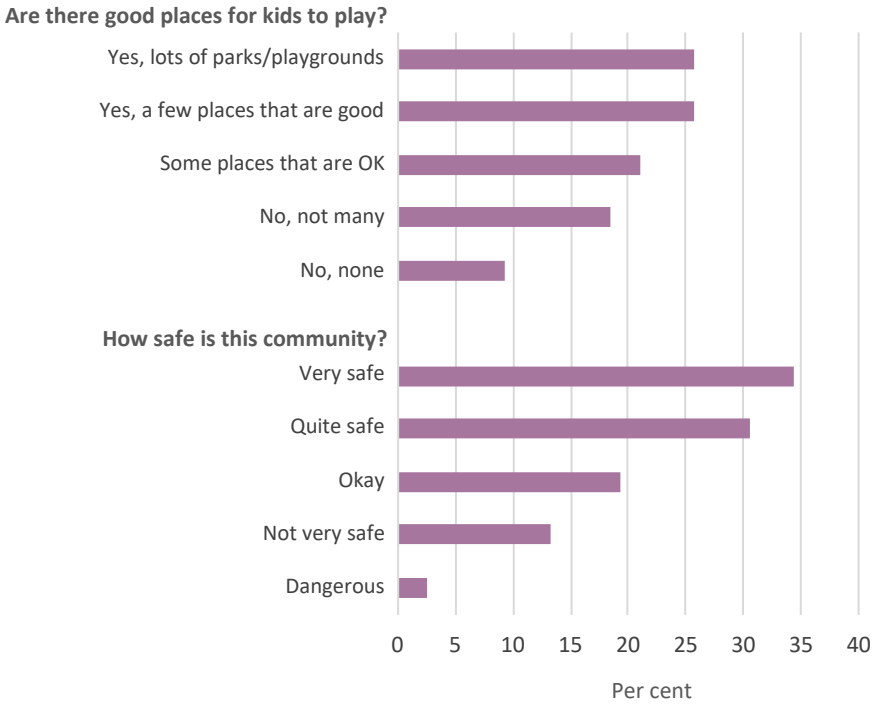
Despite the generally lower SEIFA ratings of the neighbourhoods the LSIC children resided in, when parents were asked if their neighbourhood or community was a good community for little kids, 63 per cent indicated it was very good or good, and a further 24 per cent indicated it was OK. This left a relatively minor 13 percent who gave negative responses ('not so good' or 'really bad'). Interestingly, it was parents in the ARIA category of Remote Australia that were least positive about the community or neighbourhood *(see Figure 5).* However, this does not seem to be a function of remoteness as such, since parents in Very Remote Australia generally feel their communities are good for kids.

Figure 5: Is this a good community for little kids? Responses (per cent) by remoteness, Wave 1



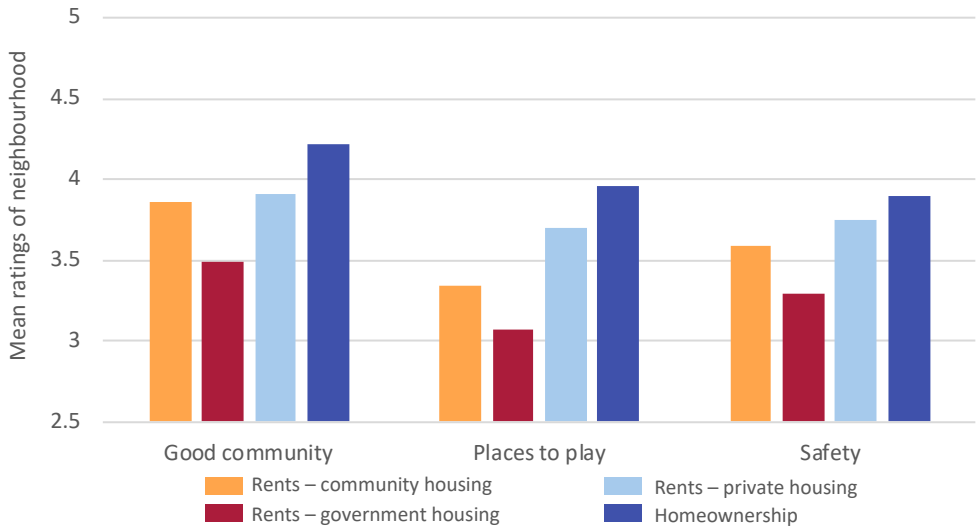
Parents were also asked if the community had good places to play and how safe they felt it was (see Figure 6). Again, the responses indicate that the majority of parents are relatively content with these aspects of the neighbourhoods they live in, with just over 70 per cent of parents indicating the community was 'OK' or better in terms of places to play and over 80 percent indicating the neighbourhood was 'OK' or better in terms of safety. Only 2.5 per cent felt their neighbourhood was 'dangerous'. On both criteria, it was again parents or carers in the ARIA level 4 'Remote Australia' who were least satisfied with their neighbourhoods. For the Remote LSIC sample, 27 per cent of parents reported there were no places for kids to play and 6.7 per cent of parents assessed their neighbourhoods as dangerous. These proportions are way above those observed in the other ARIA categories, and more than double the proportions reported in Very Remote Australia.

Figure 6: Parents' assessment of neighbourhood play areas and safety (per cent); Wave 1



Note that the ratings for how good the community is for kids, the availability of good places to play and neighbourhood safety are all assessed on a 5-point scale. Transforming these to variables ranging from one to five, where 1 reflects the worst assessment and 5 the best assessment, Figure 7 shows the mean responses by tenure. Generally, responses are around 3.5, where 3 equates to an 'OK' rating. On each aspect, homeowners have the most favourable assessment of their neighbourhoods, followed by private renters and community housing tenants, with parents living in public housing the least favourable assessments. For public housing tenants the lowest assessment is for the question on whether there are good places for kids to play, with the responses averaging 3.1 where a rating of 3 equated to 'some places that are OK'

Figure 7: Parents' mean ratings of neighbourhood by housing tenure, Wave 1



If we look at the correlations between respondents' assessment of their neighbourhood as being a good community for kids and these other indicators of the neighbourhood amenity or liveability, each has the anticipated direction of association and is highly significant in a statistical sense. That is, a higher decile on the SEIFA indices, and assessment of the neighbourhood as having good places to play and being safe are all associated with more favourable assessments of whether or not the community is a good one for young children. The rating of safety has the highest correlation (+0.63), indicating this is an important consideration for parents in assessing the suitability of neighbourhoods. Available play spaces had a lower correlation at +0.47. The SEIFA indices had weaker associations, at around 0.20, but note the assessments of neighbourhood quality may be affected by respondent bias, given each is measured by the same parents' subjective assessment. In contrast, the SEIFA indices are generated from external census data.

Satisfaction with housing, community and neighbourhood (Wave 5)

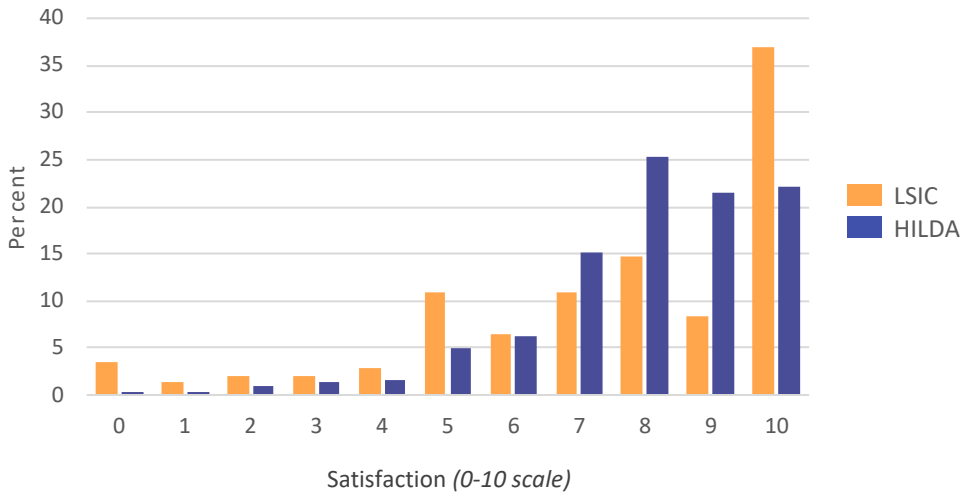
In Wave 5, the main responding parent was asked how satisfied they were with a range of aspects of their lives, and this included satisfaction with the home in which they lived. Other items asked about also related to housing circumstances: satisfaction with feeling part of their local community, with the neighbourhood in which they lived, and with how safe they felt. People were also asked to rate their satisfaction with their employment opportunities, financial situation, their health, relationships, and the amount of free time they have, and with their life overall 'all things considered'.

Responses were recorded on scales ranging from 0 to 10, with the interviewer explaining: "I want you to pick a number between 0 and 10 that indicates your level of satisfaction with each. The *more* satisfied you are, the *higher* the number you should pick. The *less* satisfied you are, the *lower* the number."

In terms of satisfaction with 'the home in which you live', 1,258 parents responded to the question with an average of 7.6 on the scale. As a general rule, people tend to express relatively high levels of satisfaction when asked about items that are within their personal locus of control or reflect their personal choices, such as satisfaction with their life or their relationships, with responses typically clustered around 8 on a scale from 0 to 10. As a rule, people tend to be reluctant to choose the very highest point on the scale, but few people choose ratings on the 'dissatisfied' half of the scale (4 or less) (Cummins, Eckersley, Pallant, Van Vugt and Misajon 2003). People are more likely to express dissatisfaction about things external to their locus of control, such as when asked how the government is performing or the state of the environment (Glatzer 1991).

Against these norms, the distribution of the LSIC parents' satisfaction with their home is unusual, in that the most common response was 10, corresponding to the highest level of satisfaction. To see this, we note that the same question is asked in the annual Household, Income and Labour Dynamics in Australian Survey (HILDA). Figure 8 compares the distribution of responses from LSIC Wave 5 with those from HILDA Wave 12, with data from both those waves relating to 2012.

Figure 8: Satisfaction with the home in which you live: LSIC and HILDA



A surprisingly high proportion of LSIC parents – 37 per cent – report the highest possible level of satisfaction on the scale. In the HILDA survey, a showcard presented to respondents assigns the words 'totally satisfied' to the number 10 on the scale, and 'totally dissatisfied' to the number zero. While these labels are not provided for the LSIC respondents, we can still infer that over one-third of the parents are very highly satisfied with their housing. However, a high proportion of LSIC respondents also offered neutral (5) or 'dissatisfied' ratings (0-4): 22 per cent compared to 10 per cent in HILDA.[5]

Taking the mean of responses by ARIA remoteness level, Figure 9 suggests parents in Remote and Very Remote Australia are, on average, as satisfied with the homes they live in and with the other aspects of their neighbourhoods as are people in more urban areas. There is little variation by region in satisfaction with the family home or feelings of safety, but parents in Remote and Very Remote Australia provided notably higher ratings in terms of feeling part of the local community and, to a lesser extent, with the neighbourhood in which they live.

Figure 9: Satisfaction with housing and neighbourhood, by remoteness, Wave 5

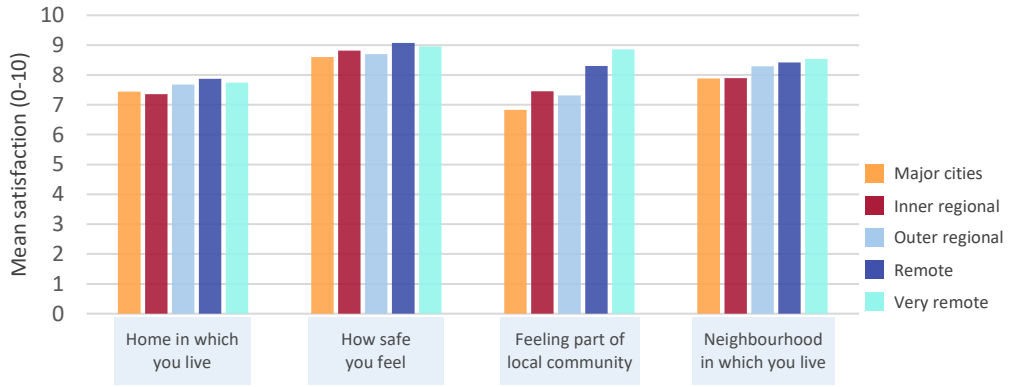
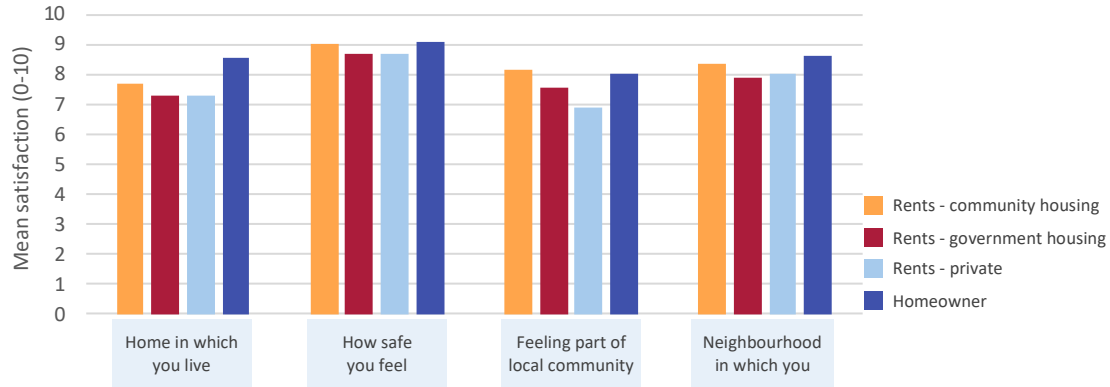


Figure 10: Satisfaction with housing and neighbourhood, by tenure, Wave 5



[5] DSS advised that these questions were not re-asked after Wave 5 because of the high proportion of LSIC respondents providing a response of 10 on each question relating to satisfaction with different aspects of life, suggesting cultural nuances in the interpretation of the 0 to 10 scale.

In terms of tenure status (Figure 10), homeowners report relatively high levels of satisfaction with each aspect relative to renters, and notably higher satisfaction with the home in which they live. However, those renting from a community housing organisation are almost as satisfied on each dimension, while public housing tenants and private renters had the lowest average reported satisfaction on each. Parents who are private rental tenants are particularly less satisfied than those in other tenures with their sense of being part of the local community.

Evidence from multivariate modelling

To further explore the factors associated with variation in the housing circumstances families of Indigenous children live in, and how those housing circumstances affect the life experiences of children and their parents, multivariate regression models were estimated. Details of the modelling and full results of the base models are provided in the Appendix. A key benefit of multivariate models over simple descriptive statistics is that they provide estimates of the independent association of one variable while simultaneously controlling for a range of other variables. For example, housing tenure differs markedly by remoteness. If we were to explore the association between these two factors and parents' satisfaction with the neighbourhoods they live in, we would want to control for remoteness while assessing the effect of families' housing tenure, and vice versa, in order to assess the independent effects of those and other variables.

Here, we first discuss results from multivariate regression models estimated with parents' ratings of whether communities were good for kids, had good places to play, and safety as the dependent variables (see Table 12). These ratings were then also used as explanatory (independent) variables in models of parents' and children's outcomes. While this chapter has mainly focussed on Wave 1 circumstances, the multivariate models utilise as many waves as possible given data availability.

The models estimate the likelihood of the responding parent offering a more favourable rating of the neighbourhood as a good community for little kids, that there are good places for kids to play, and how safe it is. Some basic controls were included relating to the study child (age and gender) and the parent (education, health, sole-parent and Indigenous status), as these factors may shape perceptions of the neighbourhood or affect families' capacity to capitalise on community and neighbourhood amenity. We do observe that parents with better self-assessed health and higher educational attainment report more favourably on each of these three aspects of their community, while perceptions of safety tend to become more positive as children age.

In terms of housing tenure, the multivariate results mostly confirm the descriptive statistics reported above. Homeowners had the most favourable views on the suitability of their communities for kids and with respect to safety[6], followed by private renters. Private renters and homeowners had equally positive assessments of the availability of places for kids to play, after controlling for other factors. Public housing tenants provide the worst ratings on all three indicators, and those in community housing report significantly higher ratings than public tenants in terms of the quality of the community for little kids and safety. For play areas, there was no significant difference in the assessments of public housing and community housing tenants.

The multivariate results suggest people living in the Major Cities are the most satisfied with the availability of places for kids to play. It also confirms that it is families in Remote Australia - not Very Remote Australia - that are the least satisfied on each of these indicators. Parents in Very Remote areas are in fact the most positive about their community as a good place for kids and in terms of feelings of safety, although they are less sanguine about areas for play. It is clear there is no direct linear relationship between remoteness and how parents feel about the quality of the neighbourhood for raising children.

Living in a neighbourhood of higher socio-economic status is also associated with more favourable ratings of neighbourhood amenity. Table 12 of the appendix reports the results for models which include the neighbourhood's decile on the SEIFA of Advantage and Disadvantage measure. As noted above, the SEIFA indices are generated by the Australian Bureau of Statistics (ABS) from census data based on the socio-economic characteristics of the people and households that live in the areas. Some of the key characteristics contributing to this particular SEIFA are education levels, income levels, employment status, occupational status of those who are employed, the proportion of children who have no working parents living with them, and the proportion of adults who are separated or divorced (see Adhikari 2006). The modelling shows a highly significant association in which parents' assessments on the suitability of the community for young kids, the availability of good play areas, and neighbourhood safety are more favourable in neighbourhoods in higher deciles of the SEIFA for Advantage and Disadvantage.

[6] This excludes the miscellaneous 'other' category for tenure. This is positively associated with each assessment relative to those in public housing and, in fact, has an even larger positive association with feelings of safety than homeownership.

The LSIC also contains the respondents' decile for a SEIFA based specifically on the socio-economic characteristics of Indigenous persons and households within the local area. This similarly has a positive association with parental assessments on each of the three measures. However, the decile of the SEIFA for Advantage and Disadvantage was preferred in the reported models based on the stronger statistical association.

When variables are added for whether or not the home is on a main road, the results suggest that the family home being situated on a main road is associated with parents being less satisfied with their community as being a good community for kids, and with lower feelings of neighbourhood safety. The estimated effect is stronger when the road is a main road with multiple lanes than one with a single lane. Accordingly, this effect seems to be well captured by the level of traffic flow, which is also associated with less favourable assessment of neighbourhood play areas.

Satisfaction with the home and neighbourhood

As noted above, in the Wave 5 survey Parent 1 was asked to rate their satisfaction with the home in which they live and with a number of other aspects of their residential area. To test if differences in satisfaction ratings by remoteness and tenure are significant in a statistical sense and hold after controlling for other factors, multivariate linear regression models were estimated with the parents' ratings of satisfaction in each of four domains as dependent variables. These are satisfaction with the home in which you live, how safe you feel, feeling part of the local community, and the neighbourhood in which you live. As these dependent variables are available only for Wave 5, there is only one observation per parent and the models are cross-sectional as opposed to panel models. These models show (see Table 13 for full results and the other control variables included):

- Parents in homeownership are significantly more satisfied with the house in which they live and with the other three domains (safety, feeling part of the community, and with the neighbourhood). These associations are substantial in magnitude – in the case of satisfaction with the home, being in homeownership as opposed to public housing is associated with the equivalent of a shift of around one full point along the rating scale.
- Parents in Very Remote Australia are the most satisfied with the homes in which they live, after controlling for other factors.

- Parents living in Remote and Very Remote Australia are the most satisfied with their sense of being part of the local community. Those living in the Major Cities are least satisfied on this dimension by a considerable margin.

- Parents living in Very Remote Australia report the highest level of satisfaction with the neighbourhood in which they live, followed by those in Outer Regional Australia.

- Satisfaction with the home and neighbourhood in which you live increases with the decile of socio-economic advantage and disadvantage of the neighbourhood. Paradoxically, in the models for satisfaction with safety and feeing part of the local community, the variable for the decile of relative Indigenous socioeconomic outcomes has the higher predictive power, but the effects are negative. That is, reported satisfaction with feelings of safety and being part of the local community is lower for neighbourhoods with higher socio-economic outcomes for their Indigenous populations.

- Three different measures of household density are tested in each model (see discussion in Appendix A1), and the construct returning the strongest statistical association with satisfaction (lowest p-value) is retained. Parents' satisfaction with the home in which they live decreases with the ratio of occupants to bedrooms. There is no evidence that occupant density affects satisfaction with feelings of safety or being part of the local community, but weak evidence that parents living in homes requiring extra bedrooms are more satisfied with their neighbourhood.

- Living on a main road appears to reduce satisfaction with feelings of safety, connection to the community and with the neighbourhood. The effects are quite pronounced in the case of feeling part of the community and satisfaction with the neighbourhood. The direct measure of traffic flow (on the scale from very light to very heavy) did not prove significant in any of the four models of satisfaction.

Some non-housing factors to note are that better parental health is associated with higher satisfaction in all four domains. However, there is potential respondent bias in the measures given the parent makes subjective assessments on both the health scale and on each of the satisfaction ratings. Experiences of negative life events are associated with lower satisfaction, notably with respect to the home in which you live and feelings of safety. Experiencing financial stress in the past 12 months and being a sole-parent are factors associated with lower satisfaction with the home in which you live. There is evidence that sole-parents feel less safe and less satisfied with their neighbourhood. There is little evidence of systematic variation in satisfaction conditional on the study child's gender, and the study child's age was insignificant in all models (and therefore omitted).

Child and parent outcomes

For the child outcomes over the duration of the survey we concentrate on the 'global health measure' as reported by Parent 1. Social and emotional development is modelled using the Strengths and Difficulties Questionnaire (SDQ) 'total difficulties score'. Scores from the SDQ completed in reference to the study child by both parents and teachers are modelled. Academic development is proxied by the students' matched NAPLAN scores from tests completed when children are in Years 3, 5, 7, and 9. For parents' health the modelling is based on their self-assessed global health, scores from the 'Strong Souls' instrument, and a measure of how well the parent feels they are coping in life (see discussion in Appendix A2).

Results from the base outcomes models suggest that living in a more remote area is associated with a lower parental rating of the study child's general health, but there is little variation in terms of parents' or teachers' assessment of children's social and emotional development as assessed on the SDQ. However, there is a very clear gradient in which NAPLAN scores are highest for children in the Major Cities and decline with remoteness. This applies to each of the five subject areas, and is the largest effect identified. The average difference between a child living in a Major City and one living in Very Remote Australia is far larger, for example, than the association with parental education. In contrast to the results for children, the multivariate models indicate that remoteness is associated with better parental outcomes, with those living in Very Remote Australia reporting better general health, better scores on the Strong Souls resilience factor, and on the coping scale (each highly significant, or $p<0.01$)[7].

The other major association related to NAPLAN scores is with homeownership. Children of parents who have purchased or are purchasing their own home typically perform better than those who live in public or community housing. This is also true of private renters, although to a lesser extent. Homeownership is also associated with better measured child outcomes in terms of parental assessed SDQ scores ($p<0.01$), and with the study child's health and teacher assessed SDQ (both weakly significant, or $p<0.10$). Note, however, these associations may reflect unobserved, positive characteristics of parents who achieve homeownership, and which also positively influence the study child's outcomes (see, for example, Mintah et al. 2022). For the parents' own outcomes, homeownership was observed to be positively associated only with self-assessed general health. There are no significant differences between the other tenures for health, or for the Strong Souls or coping measures.

[7] In discussing the results from multivariate modelling, reference is made to the statistical 'significance' of the results. The figures '$p<0.01$', '$p<0.05$', and '$p<0.10$' indicate the estimate is significant at the 1 per cent, 5 per cent and 10 per cent level, respectively. This relates to the confidence attached to the estimates relative to the null hypothesis that the true value is zero (ie. that there is no association between the variables). For example, '$p<0.01$', also referred to as 'highly significant', means that there is less than a 1 per cent chance of obtaining an estimate of that magnitude purely through random variation in the variables, so we can confidently reject the null hypothesis of no association.

Living in a neighbourhood ranked higher in terms of the decile of relative Indigenous socio-economic outcomes is associated with higher NAPLAN scores for all five subjects, as well as with better parental-assessed child health ($p<0.01$ in each case) and with better teacher-assessed socio-emotional adjustment ($p<0.05$). However, evidence of an association between this neighbourhood measure and parents' own outcomes is apparent only in the model for parents' self-assessed health, and in that case the estimated coefficient is small and only moderately significant.

Significant effects of crowding are found only for children's NAPLAN scores, with a measure of extra bedrooms required having a modest and negative association with test scores for all five subject areas. No significant effects are observed between crowding and child health or socio-emotional adjustment, or for parental outcomes. This is consistent with previous research which has found household density measures to have negative effects for Indigenous children, on average, only in the education domain (Dockery 2020a, 2020b, 2022).

Other characteristics discussed in this chapter were added individually to the base models for child and parent outcomes: the parents' assessments of the whether the community is good for kids, whether there are good places to play, and whether it was a safe neighbourhood, plus the type of road and traffic flow. These are tested in the models individually because differences in the waves for which the outcome variables are measured and when these additional variables are collected can lead to a substantial drop in the number of observations available for estimation compared to the base model.

Positive relationships between parents' ratings of their community and neighbourhood and other parent-related outcomes may be anticipated simply through a common response bias: individuals may be systematically optimistic or pessimistic in their responses, or be systematically inclined to provide responses on the higher or lower segments of scales. For example, given objectively identical circumstances, an optimistic parent may be likely to feel the community is good for kids, and also assess their child's health as better, when compared to a pessimistic parent. Alternatively, two parents may be very positive about both these items, but one reluctant to use the very highest rating on such scales. This can create an association between variables that is spurious or inflated by response bias when two variables are measured based on the same respondent's subjective assessments. The availability of panel data does help to reduce the extent of response bias, but may not eliminate it unless there is a substantial time-dimension to the panel.

Accordingly, parental assessment of how good the community is for kids, safety, and play spaces do tend to be significantly correlated with parents' self-assessed health and with their Strong Souls resilience factor score. The community quality and neighbourhood safety assessments also correlate significantly with the coping index, but the availability of play spaces did not. Interestingly, for the child outcomes, each of these assessments of the local community was positively and significantly associated with better outcomes on the teacher-assessed SDQ instrument. Since the independent variables (parents' neighbourhood assessments) and the dependent variable (teacher-assessed SDQ) are assessed by different respondents, this provides third-party validation that positive neighbourhood amenity does contribute to better child social and emotional adjustment. Neighbourhood safety and being a good community for kids had the most pronounced association, while the availability of good places to play was moderately significant ($p<0.05$).

The parental assessment of the quality of the community for young kids and the availability of places to play was not significantly associated with any of the NAPLAN test scores. The effect of neighbourhood safety on the NAPLAN test scores could not be estimated due to the mismatch in the timing of when these variables were collected. Being on a main road and the indicator of the level of traffic flow were also insignificant in all child and parent outcomes models.

Chapter 4: Good and bad things about where Indigenous children live

KEY FINDINGS

In Waves 6 and 9 LSIC parents and carers and, in Wave 15, LSIC study youth were given the opportunity to use their own words to describe some of the good things about the area where they lived. As the age of the child increased at each of these waves, what they value about the area in which they live (and therefore perceive as being good or bad) changed.

Respondents most frequently reported aspects of the community, environment/location in which they lived and the lifestyle it afforded as the being a good thing about where they currently live. These aspects were especially important for the LSIC parents and carers.

Another frequently mentioned positive aspect about the area in which participants lived was that it was quiet and safe. This was again most important for the LSIC parents and carers.

Being close to public transport, shops, schools, and other key services was also a major contributor to participants' positive feelings about where they lived. Although a prevalent theme at all waves, at Wave 15 when the study youth were given the opportunity to answer this question for themselves we see this as being the most frequently identified positive aspects of the area in which they live.

Finally, living in an area near family and which had cultural connection was reported as being a positive aspect of where respondents lived, and again this increased considerably over time and was particularly important for LSIC study youth themselves.

At Wave 15, LSIC study youth were asked what some of the not so good things were about where they lived. Accounts were highly interrelated to the things that they liked about where they live. Therefore, living in an area with limited activities and events, that was noisy and unsafe, or with bad neighbours was seen in a negative light.

In Waves 6 and 9 LSIC parents and carers and, in Wave 15, LSIC study youth were given the opportunity to use their own words to describe some of the good things about the area where they lived. The question asked respondents, 'What are some (really) good things about the area where you live?'. In Wave 15, study youth were also asked 'What are some not so good things about where you live?'. Respondents were able to, and in some cases did, give more than one response to each question. Responses to these questions ranged from lengthy accounts to brief points about the good and bad things about where they live. It is this qualitative data that has been analysed here.

The analysis of qualitative material generally involves assigning categories to units of text. In the case of this study, qualitative responses were organised into categories for both the positive and negative aspects of the areas in which they lived, as voiced by respondents. Following a reading through of all the open-ended responses, sets of initial categories were developed from the emerging patterns 'induced' from the data. These categories were continually developed and refined throughout the coding process. Each category was carefully examined and re-examined. This process was repeated until no new categories were discovered.

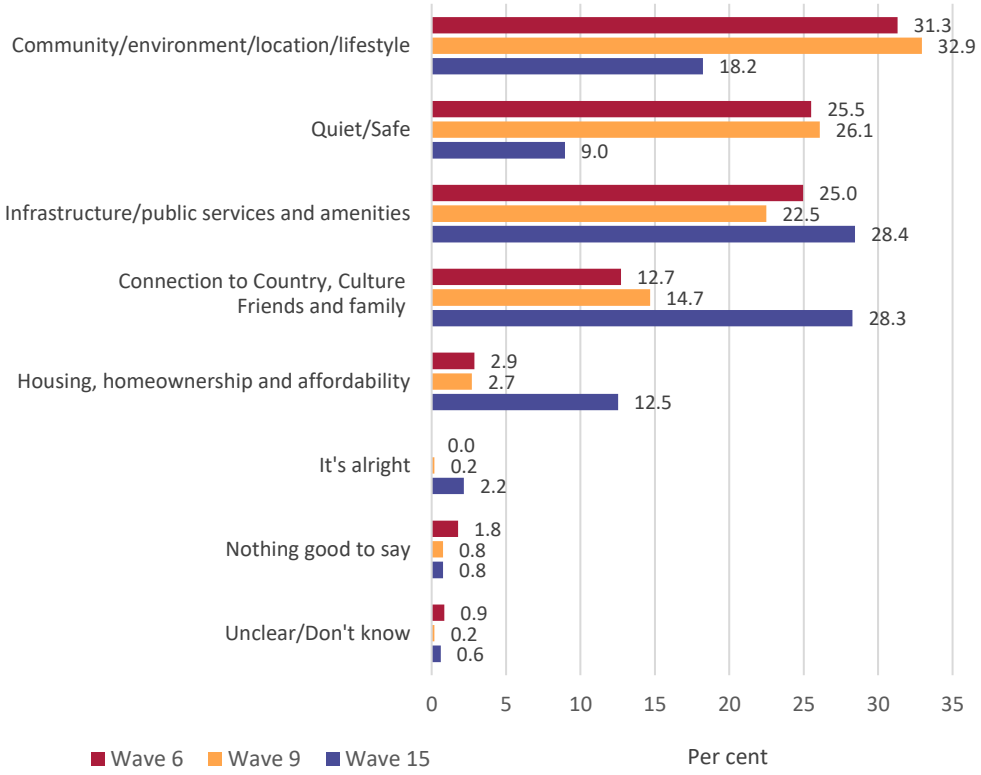
It is important to note that while common themes were identified in the responses, the themes were highly interrelated with clear areas of overlap. For example, many of the aspects respondents liked about where they lived were intimately linked to the accounts of the things that they did not like about where they live. This signals to us that when the conditions that enabled positive identification with the area in which people live were hampered, respondents often experienced the area in which they live negatively. Ideally the emergent themes should not be interpreted in isolation, but should be seen to highlight the interconnectedness of the good and bad aspects of where LSIC respondents live.

We attribute the quotes below to either Parent 1 respondents, denoted 'P1' and collected in Waves 6 and 9, or to the study youth, denoted 'SC' and collected in Wave 15.

Good things

Figure 11 documents the aspects which respondents considered to be good about the area in which they live and the frequency with which these aspects were reported at each of the three waves.

Figure 11: Key themes - respondents' views on good things about where they live: Waves 6, 9 and 15



At each of the three waves, respondents most frequently reported aspects of the **community, environment/location** and lifestyle it afforded as the being a good thing about where they currently live. These aspects were seen as especially important for the LSIC parents and carers; comprising of around a third of responses at Waves 6 and 9, compared to 18 per cent of all responses at Wave 15.

Most of the responses that informed this category indicated that respondents felt positively about their relationships with their neighbours and broader community members.

"We have friendly helpful neighbours. Feels safe." P1

"I like the community, I feel looked after, good neighbours." P1

"…there are lots of good people in the community." P1

"…good neighbours and good people in the community." P1

"Neighbours are great, great street to live on and the community is good". P1

Other responses allow us to understand a little more about the nature of those relationships which respondents considered to be positive. These highlighted the support neighbours and community members provided to each other that increased respondents' feelings of safety and contributed to them feeling a part of a broader community.

"[We] have a very pretty good neighbourhood network for our neighbours in our street; we all watch out for each other and our properties." P1

"[If] there's something that happens in the community everyone pulls together and support[s] each other." P1

"We all know each other, single mothers looking after each other and it's close to the school." P1

"Really good neighbours that all look out for each other. We are always looking after each other when someone is away we look after their house/pets etc... we share a lot if we get extra veggies out of the garden etc..." P1

Other responses that informed this category linked the geographical size of the area in which they lived with the sense of community that they considered to be the best thing about where they lived.

"Small community everyone know each other."P1

"Everyone knows each other and look after each other." P1

"Everyone knows everyone, nice and quiet area to live in with young children, everybody looks out for each other." P1

For others, however, it was the geographical location/environment in which they lived and the lifestyle it afforded which they considered to be a good thing. These responses revealed that participants liked access to natural, open spaces such as the beach, bushland, parks, creeks, rivers or billabongs which allowed them to enjoy bushwalking, bike riding, fishing and other lifestyle activities which they enjoyed.

"Nice and close to the beach, like that I can take the kids for a bush walk and go bike riding in the bush, I like the quietness." P1

"It is quiet and we can go to the river and go fishing." P1

"Peace and quiet fresh air and plenty of space for the children to play." P1

"The beach and country, the environment, it's fresh and healthy." P1

"[We are] way out of town and all the bad things that happens. Kids can play footy, ride horses, and go fishing in the creeks." P1

"it's a good area for kids we can go for walks" SY

Common responses mentioned "country living", "relaxed lifestyle", "not too crowded", "independence for the kids" and having "open spaces" and "plenty of space". Peaceful and laidback living in close proximity to the natural environment with positive relationships that foster a sense of belonging come through strongly in the qualitative data as important for participants' positive feelings about their communities.

Another frequently mentioned positive aspect about the area in which participants lived was that it was quiet and safe. **Quiet and safe** constituted around 26 per cent of responses in both Wave 6 and Wave 9. Compared to LSIC parents and carers, this theme did not appear to be as important for the LSIC study youth, constituting only 9 per cent of all responses at Wave 15.

Common responses to the question about what respondents liked most about the area in which they lived were simply "Quiet", "Quiet Area", "Peaceful and Quiet", and "Safe and Quiet".

"I feel safe and it's quiet". P1

"Everything good and happy and safe". P1

However, it was clear in other responses that participants drew strong links between neighbourly relationships, community, and feelings of safety.

"A quiet street, everyone knows everyone and the neighbours look out for the kids." P1

"Quiet, good neighbourhood." P1

"It's quiet and have good neighbours with no humbugging." P1

"It's safe, everyone looks out for each other, its quiet." P1

"Quiet. Elderly neighbours look out for children. Safe neighbourhood for kids to play in." P1

Another factor that appeared in the qualitative data that contributed to feelings of safety was the absence of alcohol and other substance use and abuse, and humbugging in communities.

"I am away from drugs and alcohol." P1

"No humbug, quiet community." P1

Across all Waves, respondents also frequently reported that **community infrastructure, amenities and services** were a good aspect of the area in which they lived. Although a prevalent theme at all waves, at Wave 15 when the study youth were given the opportunity to answer this question for themselves we see this as being the most frequently identified positive aspect of the area in which they live, constituting 28 per cent of all responses.

Respondents identified important infrastructure and services such as shops, public transport, libraries, service stations, hospitals/medical centres, sports facilities, and schools. Respondents were less focused on whether the infrastructure and services were available, but rather on the proximity of these relative to participants' homes.

> "Everything is in walking distance, school, shops, public transport and medical." P1

> "Close to shops and sporting facilities, neighbourhood centre for activities." P1

> "Walking distance to everything, school, transport around the corner, shopping centre, medical centre." P1

> "Live directly across the road from library and pool and footy field." P1

Within this set of responses a factor that was overwhelmingly mentioned was proximity to schools. The words "close to school" appeared frequently in the qualitative data.

The final set of responses frequently reported as being a positive aspect of where respondents lived related to **connection to country, culture, family, and friends**. Interestingly, the importance placed on living in an area near family and which had cultural connection was considerably important to LSIC study youth. At Wave 6, connection to country, culture, family, and friends made up 13 per cent of all responses from parents and carers and at Wave 9, 15 per cent. At Wave 15, however, when the study youth were given the opportunity to answer this question for themselves, this was one of the most frequently reported positive aspects about the area in which the LSIC study youth live constituting 28 percent of all responses.

Many responses that informed this category indicated the importance attached to living in the area where they had grown up and had extended family and community networks. Additionally, being around other Aboriginal and Torres Strait Islander people contributed to their positive feelings about the area in which they lived.

"That you can walk down the street and see another Aboriginal and or Torres Strait Islanders person, we are not isolated." P1

"That everyone in the community is Aboriginal and I feel more culturally relaxed." P1

"I am connected there, it is my family home." P1

"I grew up in [Community] family all live here." P1

"It's good; I was born here and grew up here all my life." P1

"My family grew up here. Like the saying says there's no place like home." P1

Many responses detailed why being close to family and friends was important. Being loved, supported and cared for, and strong feelings of attachment came through in these comments:

"I like living at home, it's close to family and now that I'm 18 I still feel attached to family and like to be at home with them." SY

"I love this house and my family. I am loved and I am joyed to have such a wonderful family." SY

"Good support network and I'm loved and taken care of." SY

Several responses also highlighted that being close to family is important for intergenerational relationships and connection to country.

"Family being close and the kids growing up together, very quiet and their pop sits around the camp fire and cooks johnny cakes." P1

"It's really our home and it's good to be home, all my family are buried here, and not much drinking and the family share with each other." P1

"This is my mother's country and my family all come here and stay here." P1

"It is home for me and I feel comfortable and open space for the grannies to run around and everyone looks out for each other, and can cook kangaroo in the ashes in the sand hills." P1

For others, living with family served more pragmatic purposes, enabling respondents to save money, or be taken care of by others:

"At home with family, don't need to pay too much money for living yet." SY

"Everything [is] done for me." SY

Finally, living in an area that afforded them the opportunity to participate in traditional cultural practices was also a key element of what respondents considered to be good about where they lived. For example, participants said the good things about their area were:

"Fishing and hunting for fish and dugong." P1

"It's quiet, we love our bush food." P1

"The freedom, the fishing, the fresh meat from dugongs, turtles and oysters and our friends and family." P1

"Hunting, camping, fishing, eating bush tucker from the sea and land." P1

"We have sea food when we [want], going out and gathering food, having strong culture a people learning to have respect for each other." P1

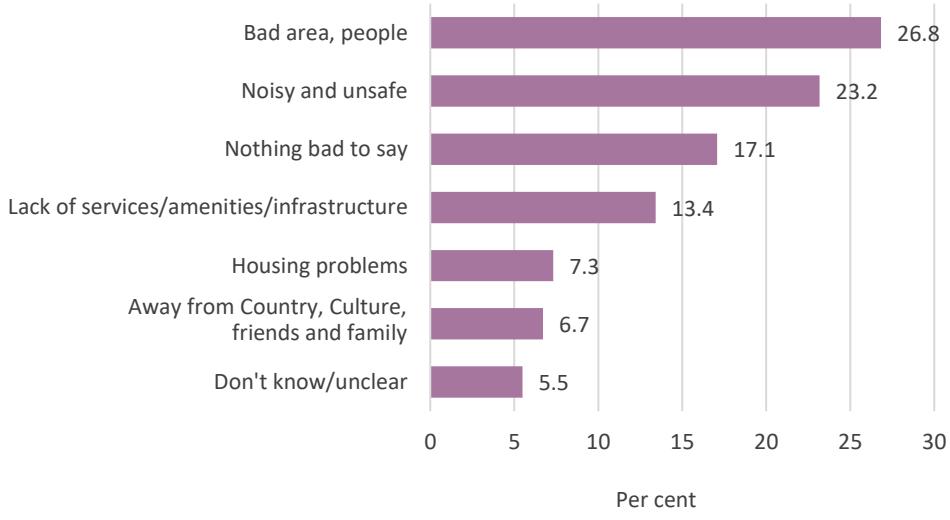
"Hunting on the land and sea using our resources around for art and medicine from the bush." P1

Other less frequently mentioned factors that LSIC respondents liked about the area in which they lived related to the house in which they were living. Again, these responses were more likely to be mentioned by the study children themselves at Wave 15. For example, some respondents indicated that they liked that they had their own home or that they were purchasing a home. Others spoke about their like of having their own room or the affordability of the area in which they lived.

Not so good things

At Wave 15, study children were asked, 'What are some not so good things about where you live?' Figure 12 documents the aspects of the area in which they live which respondents considered to be not so good and the frequency with which these aspects were reported. Positively, 17 per cent of all responses to this question indicated that nothing was bad with the area in which they live.

Figure 12: Key themes - study youths' views on not so good things about where they live: Wave 15



For those who did mention negative aspects about the area where they lived, we see that most were interrelated to the accounts of the things that were liked about where they live.

For example, we saw above that many people considered their neighbours and broader community as a positive aspect of where they live. It was clear in the responses at Wave 15, that people did not like it when they did not have positive relationships with those around them.

"Not knowing neighbours." SY

"Some neighbours are rude." SY

"Some people are really sketchy". SY

In addition, people disliked living in an area with limited activities and events. Living in a boring area or around unfriendly people made up over a quarter (27%) of all responses.

"It is pretty bland." SY

"Not much things in community." SY

"Nothing to do." SY

"Boring no activities." SY

Again we saw above that people appreciated living in a quiet and safe neighbourhood. Living in a neighbourhood which was noisy and unsafe was unsurprisingly disliked by respondents. Responses that informed this category included the dislike of excessive noise from parties and car hooning as well as safety issues such as break-ins, stealing and fighting. Noisy and unsafe neighbourhood made up 23 percent of all responses. Comments include:

"Lots of break-ins have started in the area." SY

"A lot of drug use in the area." SY

"Lots of loud people and their cars." SY

The lack of services/amenities within the local community were also commonly highlighted (accounting for 13% of responses). Responses that informed this category expressed a dislike for both the distance they were located away from relevant infrastructure and amenities as well as a dissatisfaction with the lack of services or infrastructure where they lived.

"Too far from amenities." SY

"Long walk to train station." SY

"Lack of Internet coverage, some parts have good coverage." SY

Other less frequently mentioned aspects of the area in which they lived that respondents disliked included being away from family and friends (7% of responses), and issues relating to housing including not having their own room or sufficient privacy (7% of responses).

Chapter 5: State of repair, working facilities and maintenance challenges

KEY FINDINGS

Around 40 per cent of LSIC parents reported that their home had major things that needed fixing and many also reported that they faced difficulties in getting those repairs done.

The proportion of homes reported as having major things that needed fixing was higher in remote areas.

Rental properties in the community housing and public housing sectors were most commonly identified as being in need of major repairs.

Multivariate estimates indicate:

- Homeowners and private renters are significantly less likely to report that their home is needing major repairs compared to public housing or community housing tenants.
- The likelihood of needing repairs is higher in Remote and Very Remote Australia.
- Parents are more likely to report needing major repairs if they live in neighbourhoods of higher socio-economic disadvantage, and when occupancy density is higher.
- Living in a house needing major repairs is associated with worse outcomes for the parent and study child's social and emotional wellbeing and the parent's general health and coping ability.

In various waves of the survey, parents and carers were asked about the state of repair of the house in which they were living and any difficulties they faced relating to maintenance and getting things repaired when necessary. In the initial (Wave 1) survey parents were asked whether their home had major things that needed fixing and, if so, they were asked what those things were. The free text from those responses was recorded, and this was drawn upon to develop an itemised list of the common forms of required repairs. This itemised list was used to record specific maintenance needs when the questions were asked again in Waves 5, 6, 8 and 11. This chapter first summarises the information collected in Wave 1, and then analyses the pooled data for questions asked in the later waves.

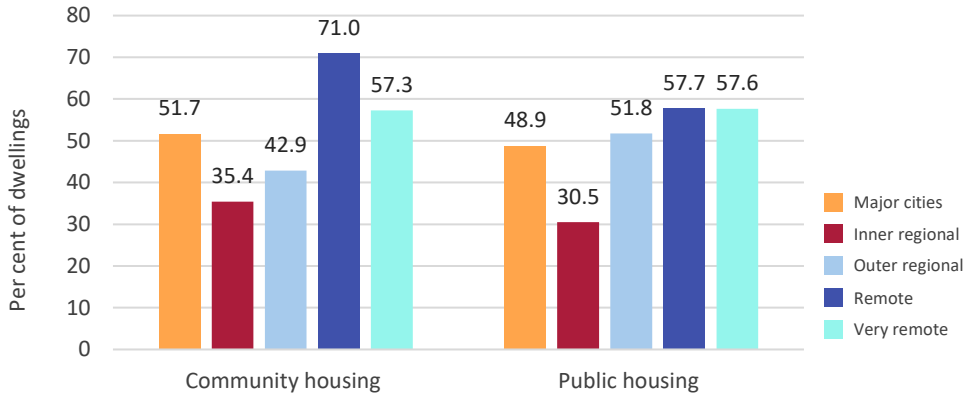
State of repair - Wave 1

When asked in Wave 1 whether their house or apartment had any major things that needed fixing, around 40 per cent of parents reported that they did. When probed further about what those things were, respondents frequently noted plumbing and electrical problems, particularly in bathrooms and kitchens, along with holes in walls and ceilings, and broken windows, doors, and gates. Broken or missing front gates were of particular concern due to the implications for children's safety. Hot water systems and air conditioners not functioning were other common issues.

The proportion of homes reported as having major things that needed fixing was higher in remote areas, with more than half of respondents in Remote and Very Remote Australia reporting issues. Around one-half of those renting from a community or cooperative housing group and of those living in public housing also reported major problems. Since those forms of rental tenure are also much more common in more remote areas, it is difficult to say whether the state of disrepair of houses is primarily associated with the type of landlord or with remoteness. Among community housing or public housing rental tenants, Figure 13 indicates it is actually those in Inner Regional areas that were the least likely to report their properties required major repairs.

In the Major Capital Cities and Inner Regional Australia, privately owned and privately rented properties were less likely to be reported as needing major repairs than state or community housing properties. Comparisons to more remote Australia are difficult due to the low number of private rentals and the very low incidence of homeownership among Indigenous households in more remote Australia.

Figure 13: Proportion of community and public housing rental properties requiring major repairs, Wave 1



Of the roughly 40 per cent of people in Wave 1 who reported that their dwelling had major things in need of fixing, many also reported that they faced difficulties in getting those repairs done. When further asked whether it was easy to get the problems they had reported fixed, almost half indicated 'no' and a further quarter 'not always', leaving only around one-quarter indicating 'yes'. Landlords or housing agencies either taking too long or just being uninterested in getting repairs done was the main frustration reported, particularly in Remote and Very Remote Australia.

Reinforcing this, the Wave 2 interviews followed up on those respondents who had indicated in Wave 1 that their home had major things in need of repair to see if those problems had been fixed. People who had moved house between waves were not included in the follow-up question. Of the 429 people who were asked, just over half (51 per cent) indicated that the problem they identified one year ago had not been fixed.

State of repair – Wave 5 onwards

Later waves explored in more detail the nature of things in the home that needed fixing, with a range of specific options provided against which to record those issues. These data were collected in Waves 5, 6, 8, and 11, with specific items classified under five categories of 'structural/electrical problems', 'major plumbing problems', 'roof/doors/windows', 'outdoor problems' and 'essential services problems'. While around 40 per cent of respondents in Wave 1 indicated that their home had major things that needed fixing, when the question in the later waves was presented with an itemised list of the repairs needed, slightly fewer (33 per cent) selected anything from the list – even though this included a category of 'other' that could be chosen for problems that did not match the listed issues. Of those who reported that something major needed fixing in Wave 5 onwards around half listed two or more items in need of repair.

Among those categories, issues were most commonly reported for 'structural/electrical problems', followed by 'major plumbing problems'. The most commonly nominated need for repairs was 'windows, doors, screens or locks' within the broader category of 'roof/doors/windows'. Figure 15 shows the frequencies with which the individual items were selected using responses pooled across the four waves. Note that electrical issues appear as an item in two major categories: 'major electrical problems' under the overall 'structural/electrical problems', and 'electrical (power)' within the 'essential services problems' group. Taken together, this would put electrical repairs as the second most commonly reported requirement. A range of plumbing issues, major cracks in walls or floors, and fences and gates were other common items identified as needing fixing.

Again, it was rental properties from the community housing and public housing sectors that were most commonly identified as being in need of major repairs, at approximately 40 per cent of dwellings compared to around 25 per cent for private rental or privately owned properties. Relatedly, as shown in Figure 14, dwellings in Remote and Very Remote Australia were generally more likely to be in need of repairs. This applied across the main categories, with the exception of outdoor problems, for which a greater need for repairs was apparent only in Very Remote Australia.

Figure 14: Proportion of homes requiring major repairs, by type of repairs and remoteness. Waves 5, 6, 8 and 11

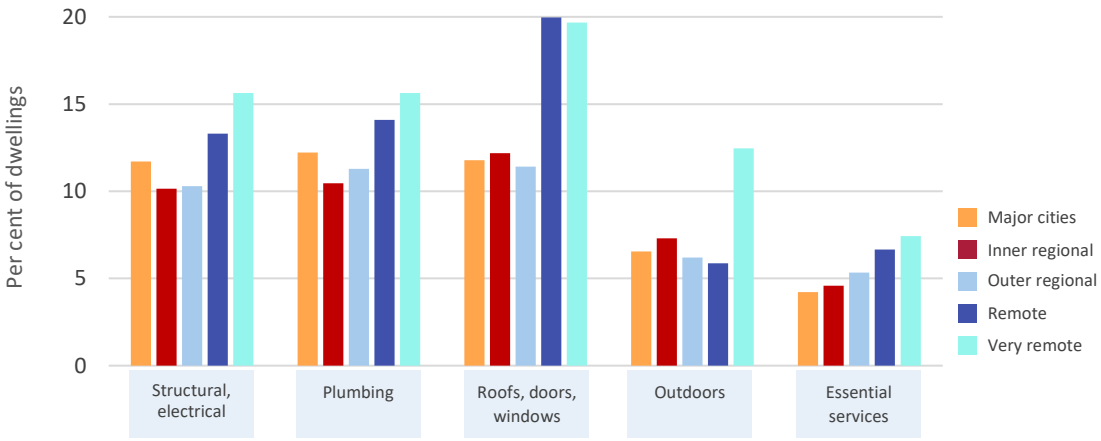
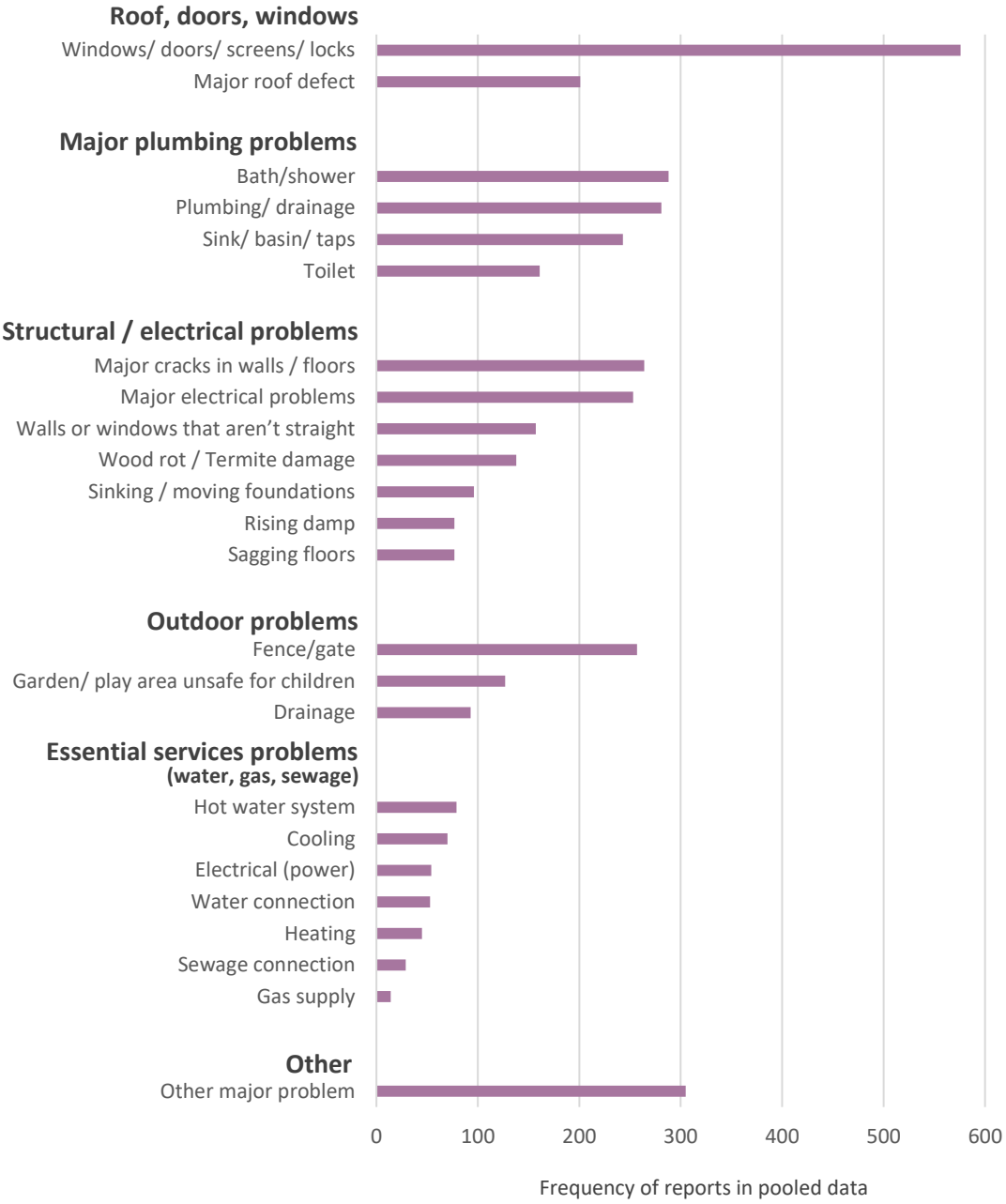


Figure 15: Major repairs required Waves 5, 6, 8 and 11



As in Wave 1, respondents who reported they had major things requiring fixing in Waves 5 and 8 were further asked whether or not it was easy to get those things fixed. Around one-third selected each of the potential responses of 'Yes', 'Not always', and 'No'. Homeowners were markedly less likely than renters to indicate it was difficult to get repairs done. For renters, the difficulty getting repairs done was primarily attributed to the landlord or housing authority. In contrast, for homeowners who reported difficulties getting things fixed the principal reason given – with 84 per cent of the responses - was the cost. Perhaps surprisingly, people living in the Major Capital Cities and Inner Regional Australia expressed more frustration about getting repairs done than those in Remote and Very Remote Australia.

Most families who identified major repairs no longer reported needing those same repairs when surveyed again. For example, of those households reporting major structural or electrical problems, plumbing problems, or problems with roofs, doors or windows in Wave 5, less than one in five also reported those problems in Wave 6. For outdoor problems and essential services problems, it was close to one in ten. The persistence (or reoccurrence) of all the five major categories of problems was at around one in ten from Wave 5 to Wave 8.

Need for repairs: Multivariate estimates

To account for confounding relationships between tenure, remoteness and other variables that may affect the state of repair of the family home, a panel probit model was estimated in which the dependent variable equalled 1 if the home was reported to need major repairs, and zero if major repairs were not required. Two dummy variables were included to capture if the observation was from Wave 1 or from Wave 2, given the slight differences in wording of the questions to those used in Waves 5, 6, 8 and 11. Some variables relating to the characteristics of the parent were also included (See Table 14, Appendix A4).

The results indicate that compared to those living in public housing and community housing, homeowners and private renters are significantly less likely to report that their home needs major repairs (both highly significant). The likelihood of needing repairs is similar across homes in Major Cities, Inner Regional and Outer Regional Australia, but higher in Remote and Very Remote Australia. The latter effects are moderately significant ($p<0.05$ for Remote and $p<0.10$ for Very Remote), and the estimated effect of living remotely is around half the magnitude of that associated with tenure.

Parents are also more likely to report needing major repairs if they live in neighbourhoods of lower deciles on the SEIFA of advantage and disadvantage, and when occupancy density is higher. Both measures based on the number of extra bedrooms required returned similar positive associations with the need for repairs, but the direct ratio of persons to bedrooms was not significant.

Several parental characteristics are found to be significantly associated with the state of repair. No association by the parents' gender or level of education was identified, but sole-parents, non-Indigenous parents and those in employment were less likely to report major things in their home that needed fixing. The latter result may arise because working parents are more likely to be able to afford to get repairs done or undertake preventative maintenance. Including the direct measure of financial stress results in the loss of a large number of observations given it is collected only from Wave 3 onwards. However, its inclusion in a model with that subset of observations (not reported) confirms a large and highly significant association (β=+0.38, $p<0.01$) between experiencing financial stress and the home needing major repairs.

It also appears that living in a house needing major repairs is associated with worse outcomes for the parents and the study child on a number of measures. When a variable based on whether or not the home had major things that need fixing is added to the base models of children's and parents' outcomes, it is significant and negative in several models:

- both parent-assessed (β=-0.22, $p<0.01$) and teacher-assessed (β=-0.28, $p<0.01$) SDQ scores, suggesting the need for repairs is associated with more study child social and emotional difficulties
- in the model for NAPLAN test scores for grammar (β=-10.29, $p<0.05$). The coefficient is also negative but not statistically significant in models for the other four subject scores
- in the model for the parents' general health (β=-0.09, $p<0.01$) and the coping scale (β=-0.18, $p<0.05$).

Caution needs to taken in interpreting these results as reflecting causal relationships. Undoubtedly, in some cases, the state of disrepair will impose difficulties on the parent, child and other household occupants. However in other cases, the fact that things are broken and have not been repaired may be symptomatic of wider challenges facing the family, financial and otherwise. A parent in poor health or who is struggling to cope with life, for example, will also find it harder to stay on top of household needs for maintenance and repairs.

Working facilities

In Waves 3 and 5 of the survey, parents were presented with a list of key household facilities, and asked whether or not their home had each of those facilities in working order. In Wave 3 they were also asked whether or not they shared those facilities with other families. As shown in Table 2, over 90 per cent of homes were reported to have each of those facilities in working order with the exception of a heater. A significant proportion of the sample live in areas where climatic conditions are such that there would be little need for heating, and in fact a large number of people did not respond to this question. Ignoring heaters, 80 per cent of the children's homes had all eight of the nominated facilities in working order, and a further 15 per cent had just one of the facilities out of order. Less than one per cent of parents reported having none of those eight facilities available and working in their home.

Not having working facilities also seems to be a relatively temporary state. Of those who did not have a working stove in Wave 3, around one-third still did not have a working stove when interviewed in Wave 5. However, very few of those without a working fridge, toilet, bath/shower, washing machine, kitchen sink or laundry tub were still without those facilities in working order by Wave 5. Most of those without a heater in Wave 3 did not have one in Wave 5, consistent with many families simply not needing heating.

Table 2: Home facilities: proportion in working order and shared with other families

	In working order? (Waves 3 & 5) (%)	**Share with other families?** (Wave 3) (%)
Stove, oven or other cooking facilities	93.5	9.1
Fridge	97.9	8.5
Flushing toilet	97.8	8.2
Bath or shower	96.9	8.4
Washing machine	96.0	10.2
Kitchen sink	97.8	8.3
Laundry tub	97.3	8.6
Heater	70.7	5.6
Air conditioner/fan (cooling)	90.3	7.6

Notes: Percentages are calculated excluding those who answered 'don't know' or refused to answer.

The incidence of sharing facilities with other families had a very different distribution. Almost ninety per cent of respondents indicated they did not share any of the facilities. However, among the ten per cent who did share, the vast majority reported sharing all of the facilities (again this is ignoring 'heaters'). Sharing is far more prevalent in Remote Australia, where around one-third of homes reported having shared facilities. As would be expected, it is also around twice as prevalent in households with other adult occupants who are unrelated to the study child, compared to single-family households.

Chapter 6: Housing dynamics and trajectories

KEY FINDINGS

Between one in four and one in five LSIC children change their address each year.

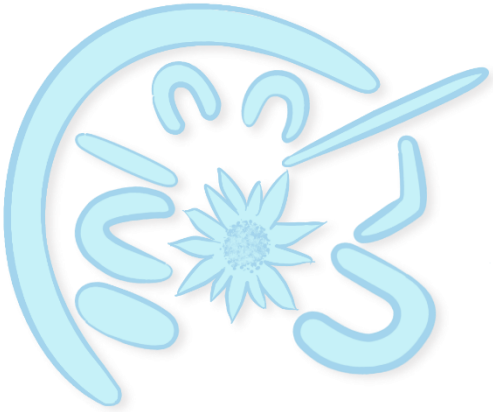
The most common reasons for moving were related to housing (54 per cent of moves), followed by family reasons (27 per cent), and lifestyle/other reasons (11 per cent).

The propensity to move was highest for families living in Remote Australia.

Children in Very Remote Australia experienced the most stable housing, with only 17 per cent observed to change address each year.

Multivariate evidence indicates:

- Private renters are significantly more likely to change address, and homeowners significantly less likely to move.
- Those in Outer Regional Australia and in Remote Australia are more likely to move.
- Higher occupant density is associated with a greater propensity to move house.
- Sole-parents experience more housing instability than couple parents.
- A modest negative and highly significant association was observed between the number of moves in the past two waves and four of the NAPLAN test scores: reading, spelling, grammar, and numeracy.

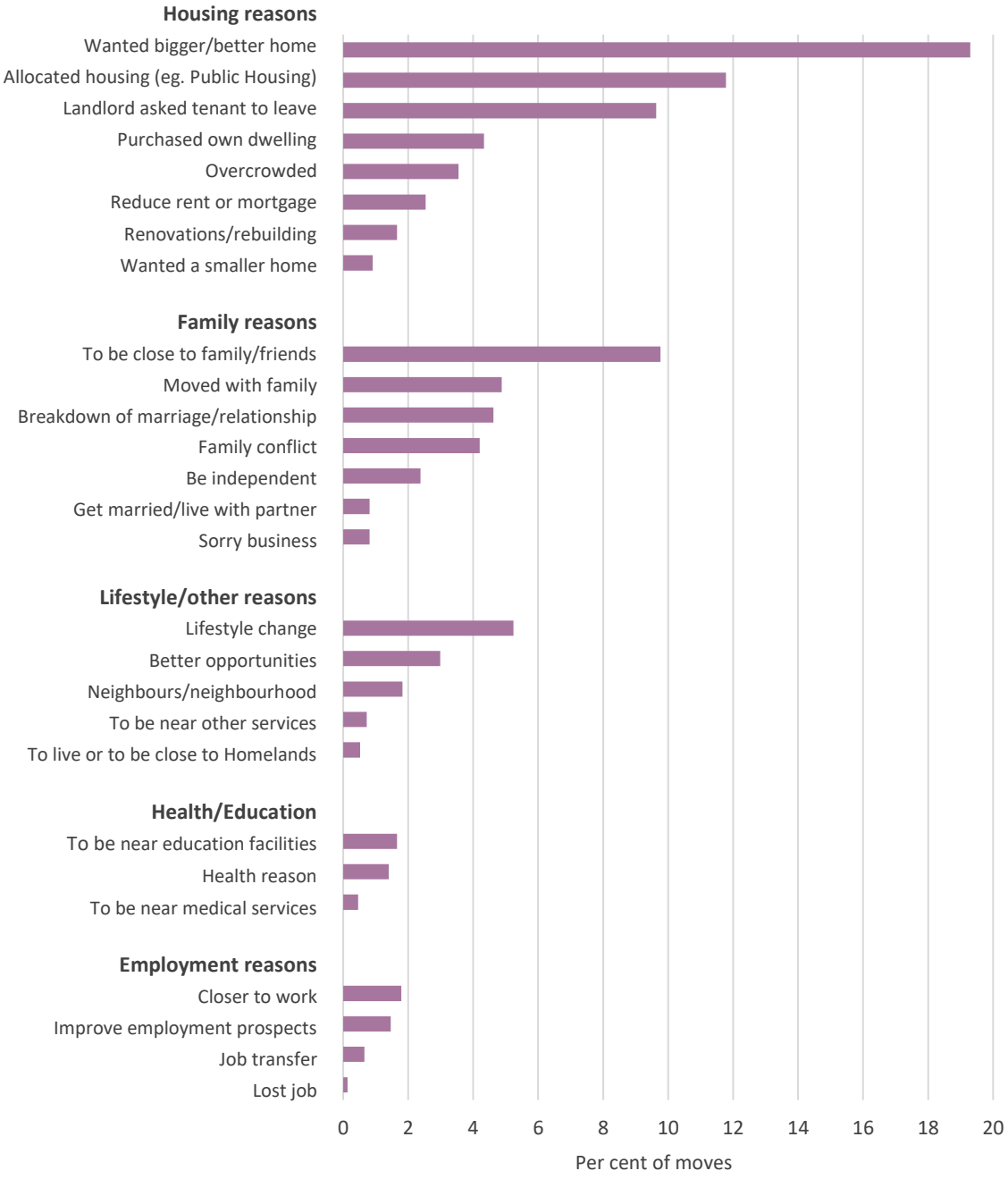


This chapter looks at the dynamics of the *Footprints in Time* children's housing circumstances: how often they move, why they move and the housing arrangements they move between. When the families were first surveyed, retrospective information was collected on how many homes the study child had lived in. For the baby cohort, who were aged from 0 to $1^1/_2$ years at recruitment, most (66 per cent) had lived in only their current home, and a further 24 per cent had lived in two homes. For the child cohort, who were aged from $3^1/_2$ to 5 years, 38 per cent had lived in their current home all their lives, and 30 per cent had lived in two homes. For both cohorts a small proportion of children were reported to have already lived in numerous homes. The mean number of homes lived in was 1.5 homes for the baby cohort and 2.2 for the child cohort. Taking account of their ages, this equates to one change of home every 2.5 years for the younger cohort, and every 3.3 years for the older cohort, suggesting moves are more frequent for families after the arrival of a new baby.

The remainder of this section focuses on moves observed between waves. From Wave 2 onwards the responding parent was asked if the study child is living at the same address as last year. This can be used to infer whether or not the child moved at all between waves. Potentially the child may have had multiple moves, and this will not be captured using this measure. From Wave 2 onwards, the level of mobility is quite constant over the timeframe of the panel, with between one in four and one in five children changing address each year. The proportion reported to have moved in the last year ranged from a low of 19.8 per cent in Wave 9 (2016) and a high of 26.8 per cent in Wave 8 (2015).

Those who had moved were further asked the main reason for their most recent move. A wide range of options were coded and grouped under categories of housing reasons, employment reasons, health and education reasons, family reasons, and 'lifestyle/other' reasons. From Wave 2 to Wave 13, the main reason was recorded for a total of 3,073 moves. In terms of those major categories, the most common reasons for moving were related to housing (54 per cent of moves), followed by family reasons (27 per cent), and lifestyle/other reasons (11 per cent). Employment and health/education were each cited as the main reason for less than 5 per cent of moves.

Figure 16: Main reason for moving, pooled data Waves 2 to 13



Looking at the more detailed reasons given (Figure 16) wanting a bigger or better home was the most common reason for moving. Cited as the main reason for 19 per cent of moves, this was followed by being allocated housing, such as public or community housing (12 per cent) and to be close to family or friends (10 per cent). Each of these could be considered positive reasons for moving. The fourth most common reason given was being asked to move by the landlord (also 10 per cent of moves), however negative reasons for moving were far less common than positive reasons. Other negative reasons for moves included relationship breakdowns, family conflict, and overcrowding, each accounting for fewer than 5 per cent of moves. Perhaps surprisingly, more people reported moving because they had purchased their own house (4.3 per cent) than because of overcrowding (3.5 per cent).

Looking at all the moves observed from one wave to the next over the timeframe of the panel, the propensity to move was highest for families living in Remote Australia, with 25 per cent of children moving each year. This was marginally lower in Outer Regional Australia (24 per cent) and lower again in Inner Regional Australia and the Major Cities (19 per cent and 18 per cent respectively). It was children in Very Remote Australia that experienced the most stable housing, with only 17 per cent observed to change address each year. Table 3 shows that in the vast majority of moves, people remain in an area of the same remoteness level. Over the 13 waves, 86.4 per cent of people living in Major Cities, and who were observed to move from one wave to the next, had moved to another address in a Major City. This proportion declines with remoteness: of those living in Very Remote Australia who change address 79.1 per cent move to another home in Very Remote Australia. Small net flows were observed into Major Cities and Inner Regional Australia, and out of the three regional and remote areas.

Table 3: Moves by remoteness region, pooled data Waves 1-13

	ARIA moved to …						
ARIA moved from …	Major City (%)	Inner Regional (%)	Outer Regional (%)	Remote (%)	Very Remote (%)	Total %	Total n
Major Cities	86.4	9.1	3.4	0.7	0.3	100.0	700
Inner Regional	9.6	85.4	4.4	0.3	0.3	100.0	698
Outer Regional	4.8	6.7	81.5	2.9	4.2	100.0	480
Remote	2.0	2.8	7.9	80.7	6.5	100.0	353
Very Remote	2.0	0.5	11.6	6.8	79.1	100.0	397
All moves	27.0	26.8	19.8	12.7	13.7	100.0	
Total (n)	**710**	**704**	**520**	**333**	**361**		**2,628**

Notes: based on all observations for which a change of address occurs between consecutive waves.

By housing tenure, families living in private rental housing stand out as the most likely to move in any one wave (34.8 per cent), followed by the miscellaneous 'other' category (30.0 per cent). Families living in community and public housing were significantly less likely to move in any given year (both around 17 per cent). Homeowners experience by far the most stable housing, with only 6.6 per cent changing address each year.

In terms of transitions between tenures, there is significant movement between community housing and public housing (see Table 4) and, to a lesser extent, in and out of private rentals. Aside from the 'other' category, families renting privately were the most likely to move into homeownership with 8.6 per cent of private renters who change address moving into their own home. Taking all moves in total, there was a net movement out of community rentals and public housing and net movement into private rental and homeownership.

Table 4: Moves between housing tenures, pooled data Waves 1-13

	Tenure moved to …						
	Renters						
	Comm. housing	Public housing	Private landlord	Home-owner	Other	Total	
Tenure moved from …						%	n
Renters							
Community housing	33.7	37.0	17.2	4.2	7.8	100.0	332
Public housing	16.3	54.0	20.2	1.9	7.5	100.0	771
Private landlord	5.8	13.1	64.5	8.6	8.1	100.0	1038
Homeowner	4.3	5.6	44.4	39.5	6.2	100.0	162
Other	9.6	26.1	42.2	11.0	11.0	100.0	218
All moves	12.9	29.4	41.5	8.2	8.0	100.0	
Total (n)	**326**	**741**	**1046**	**206**	**202**		**2,521**

The propensity to move does not vary very much by socioeconomic status of the neighbourhood, as measured by neighbourhood deciles of the ABS constructed index of relative socioeconomic advantage and disadvantage. Over the panel slightly more moves involved a move to an address of a higher decile (33 per cent of moves) than to a lower decile (28 per cent of moves).

Multivariate evidence on mobility

Multivariate modelling is used, first, to provide added insights into the factors associated with the likelihood of the family moving and, second, to test the association between housing instability and the health and wellbeing of Parent 1 and the study child.

Factors associated with moving

To investigate factors associated with moving, a model was estimated of the probability the family changes address in the coming wave conditional upon their current circumstances. That is, we model the probability the family moves between Wave *i* and Wave *i+1*, conditional upon characteristics observed at Wave *i*.

Results for a model based on the full panel are reported in Table 14 (in Appendix A4). In terms of housing and geographic variables, no significant difference in the propensity to move between those in community housing and those in public housing is found. Compared to that group, the estimates confirm private renters are significantly more likely to change address, and homeowners significantly less likely to move ($p<0.01$ in both cases). Of the variables included, tenure status appears to have the most pronounced impact on the probability of moving. Compared to households in the Major Cities, those in Outer Regional Australia and particularly in Remote Australia more likely to move. There are no statistically significant differences between those in Major Cities, Inner Regional and Very Remote Australia. No significant variation is observed by neighbourhood socio-economic status as measured by the SEIFA decile of advantage and disadvantage.

Higher occupant density is associated with a greater propensity to move house. In this case the simple ratio of occupants to bedrooms was the most robust, but all three measures of occupant density return positive and highly significant estimates. A number of demographic characteristics correlate with moving. Sole-parents experience more housing instability than couple parents, and the number of negative life events reported is also associated with moves. In part, this will reflect that one of the events included in the index of adverse life events is the study child's parents or carers leaving due to a family split-up. There is weak evidence that the family is less likely to move if the parent is non-Indigenous, but no significant association was identified with the parent's gender or health status.

Housing stability and outcomes

Several specifications of variables relating to the frequency of moves were tested: whether the study child had changed address in the past year; the number of address changes in the past two waves, the number in the past 3 waves, and the total number of address changes the child had experienced divided by their age in years (or the average number of address changes per year the child had experienced over their life). Recall that it is possible to tell whether or not the child changed address between waves, but not the number of address changes if the child moved multiple times in the one year. Hence, the variables on the number of moves can allow for a maximum of 1 move per year and may not fully capture cases of high instability.

When added to the base models for the study child and parent outcomes, in any model in which the number of moves was significant the specification based on the number of moves experienced in the past two years preformed best in a statistical sense. No significant associations with the child's general health or SDQ scores were observed. However, a modest negative and highly significant association was observed between the number of moves in the past two waves and four of the NAPLAN test scores: reading, spelling, grammar, and numeracy. Therefore, it appears changes of address are disruptive to children's schooling. A weak association was also observed in the model for one of the three parental outcomes measures: self-assessed health (β=-0.04, $p<0.05$).

As pointed out above, many moves are made for positive reasons: wanting a bigger or better home being allocated housing, and to be close to family or friends. Therefore, estimates of the effects of measures based simply on whether or not a moved occurred, or the number of moves, will be obscured by offsetting positive and negative effects. The variable based on moves over two waves may have proved the better specification because it distinguishes instability from moves to achieve a desired outcome. The specifications based on moves over longer periods result in the loss of observations for estimation, which mitigates against identifying significant associations. The variable for the number of moves in the last 3 waves, for example, can only be observed from Wave 4 onwards.

Chapter 7: Experiences of homelessness

KEY FINDINGS

Close to one in every ten respondents (or 122 people in Wave 3 and 103 in Wave 9) had experienced homelessness in the past five years.

The main reasons cited for being homeless related to difficulties with personal relationships, including relationship breakdowns, domestic violence, and other friction between household members ('overcrowding/asked to leave/timeout from family').

Multivariate evidence indicates that experiencing homelessness in the past five years is associated with substantially lower parental health. Surprisingly, however, no evidence of a negative effect on the parental assessments of the health of the study child was identified, even when the child was with the parent during the episode of homelessness.

Assembling an accurate statistical picture on homelessness is challenging, both within Indigenous populations and within the wider Australian society. People prone to homelessness will have been less likely to be selected in the original LSIC panel and, among those selected, attrition will be higher for those who experience homelessness or experiencing forms of housing insecurity often associated with becoming homeless.

With that limitation in mind, data on homelessness were collected in Waves 3 and 9 of the LSIC.[8] In Wave 3, parents and carers were asked "In the last five years, have there been times when you did not have any place to live? (you were homeless)?". The Wave 9 question was worded slightly differently, referring to not having 'your own place to live' instead of 'any place to live'. Those who reported any episodes of homelessness were then asked when the most recent time was, reasons for being homeless, where they stayed while they were homeless, and whether or not the study child was with them during any of the episodes of homelessness.

The proportion of respondents reporting experiences of homelessness were very similar for Waves 3 and 9, suggesting the slight change in wording had little impact on the interpretation of the question (Table 5). In total, this stood at close to one in every ten respondents (or 122 people in Wave 3 and 103 in Wave 9). Most of those respondents indicated they had experienced only one episode of homelessness in that time, and only a handful reported being homeless 'many times'.

Table 5: Proportion of people reporting being homeless in last five years: Wave3 and Wave 9

	Wave 3 (%)	**Wave 9 (%)**
Been homeless in last 5 years:		
Yes, once	5.0	5.9
Yes a few times	2.9	1.7
Yes, many times	0.8	0.6
Yes – total (any time)	**8.7**	**8.1**
(Total respondents)	(1,401)	(1,264)

The vast majority (82%) of parents who reported having been homeless in the past five years indicated that the study child had been with them all or some of the time while they were homeless. People reported primarily staying with friends or relatives while they were without their own home (60% of responses). Of the options given for where people stayed (with multiple responses allowed), 'with friends or relatives on a short-term basis (for 3 months or less)' and 'with friends or relatives on a long-term basis (for more than three months)' were each nominated in around 30 per cent of cases. The other main refuges accessed were safe houses or night shelters in the short term (12%) and longer term supported accommodation (11%).

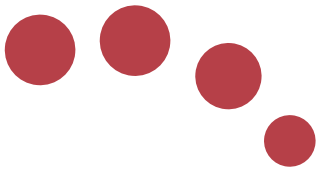
[8] The questions on homelessness were asked again in Wave 14. Data from that wave had not been released at the time of writing.

Study children whose parents reported having experienced homelessness in Wave 3 were also more likely to have their parent or carer experience homelessness again by Wave 9. Of those with no report of homelessness in Wave 3, 6.4 per cent reported homelessness in the five years leading up to Wave 9. This compared to 15.0 per cent for those who had reported homelessness in the earlier wave. Consistent with the recurring nature of precarious housing, the figure was higher again (20 per cent) for those who in Wave 3 reported they had been homeless 'a few times' during the prior five years.

This comparison required restricting the sample to study children for whom responses to this question were available in both Wave 3 and Wave 9, creating the potential for bias due to attrition. Between Waves 3 and 9 the total number of Parent 1 respondents in LSIC fell by 136 from 1,404 to 1,268, an apparent attrition rate over the six waves of 9.7 per cent. However, because some study children drop out and re-enter LSIC, the number of Wave 3 subjects who were not included in Wave 9 is higher, at 292, an effective loss of sample of 20.1 per cent. Of those who reported in Wave 3 that they had experienced homelessness in the prior five years, the loss-to-sample by Wave 9 was 17.2 per cent, which was actually lower than for respondents who did not report homelessness in Wave 3 (21.0%). On that basis, the estimates of the persistence of homelessness should not be understated due to higher attrition of respondents at risk of homelessness.

As the data on homelessness are retrospective, we need to look at families' prior circumstances to explore associations between housing and the probability of experiencing homelessness. Those who reported they had been homeless in the past five years were then asked when the most recent episode was. Roughly speaking, around one quarter indicated it was within the past 12 months, one quarter said it was between 12 months and 2 years ago; and half indicated it was more than 2 years ago. Thus, it was possible to identify people who, in Wave 3 and Wave 9, had been homeless within the past two years and relate this to their living arrangements two years earlier (in Waves 1 and Wave 7, respectively).

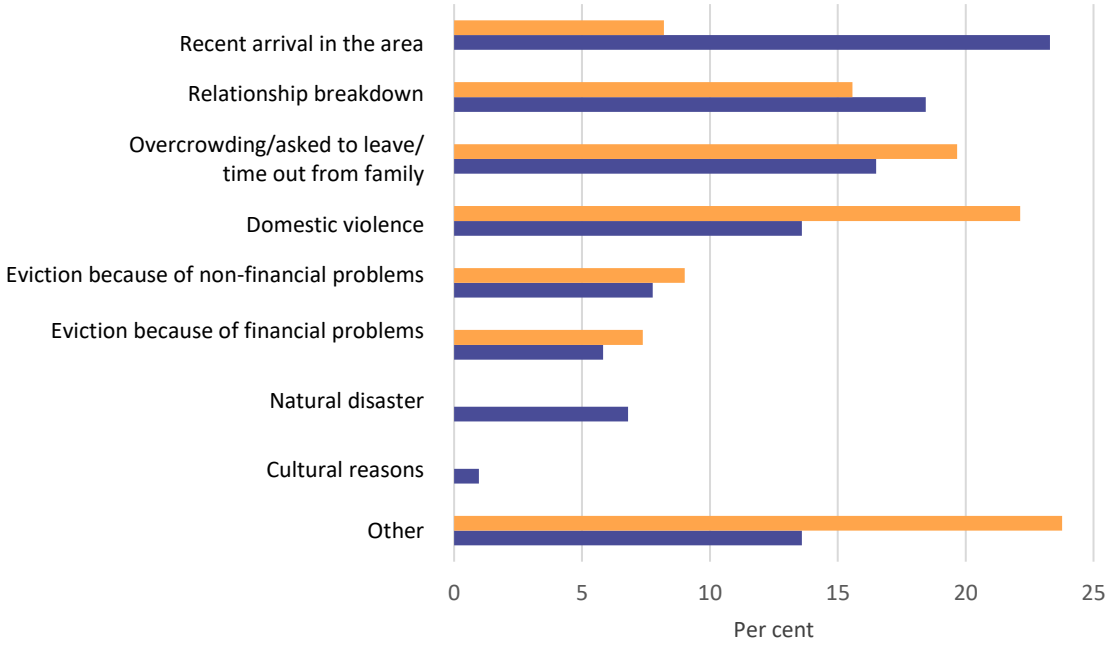
This exercise revealed very little variation in the propensity to become homeless by remoteness, with around 5 per cent of respondents living in each of the ARIA categories (from Major Cities through to Very Remote Australia) experiencing homelessness during the ensuing two years. This also applied across the different rental tenures (community housing, public housing and private rental), but homeowners appear substantially more secure. Less than one per cent of those living in a home owned by themselves and/or their partner in Waves 1 and 7 reported experiencing homelessness in the following two years.



Reasons for homelessness

The main reasons cited for being homeless related to difficulties with personal relationships, including relationship breakdowns, domestic violence, and other friction between household members ('overcrowding/asked to leave/timeout from family') (see Figure 17). Among those who had experienced an episode with no home, substantially more people cited these interpersonal issues as the cause than cited evictions. Compared to Wave 3, Wave 9 saw a big jump in the number of people who indicated a recent move into the area as a factor contributing to their homelessness. The response options were expanded in the Wave 9 questionnaire to include natural disasters and 'cultural reasons' as causes, which likely contributed to a lower count of responses recorded in the 'other' category for that wave.

Figure 17: Reasons for being homeless, Waves 3 and 9, proportion of persons experiencing homelessness



Note: Multiple responses allowed. Categories of 'natural disasters' and 'cultural reasons' were not included in Wave 3.

Homelessness and outcomes

With data on experiences of homelessness only collected in two waves, and the timing of those episodes recalled in quite general terms, it is not possible to construct variables relating to homelessness on a consistent basis by wave of the survey. The potential for multivariate analyses of the association between homelessness and outcomes is further subject to the availability of outcomes measures coinciding with those waves.

Dummy variables were constructed indicating whether or not the parent experienced an episode of homelessness in the past five years; and a more restricted variable indicating whether or not the parent had experienced homelessness *and* the study child was with them during any of those times. This allowed models of outcomes to be estimated using data only from just Wave 3 and Wave 9. Observations on parental health and child health are also available for both those waves. These models indicated experiences of homelessness in the past five years is associated with substantially lower parental health. However, models for child health do not show the expected negative association with either specification of the homelessness variable. Paradoxically, the parent experiencing homelessness while the child was with them was associated with a higher rating of the child's general health and that result was moderately significant ($p<0.05$).

Chapter 8: Growing up strong and housing pathways

KEY FINDINGS

The housing experiences of the study children over the course of their childhoods are extremely diverse, dynamic, and complex. To distil these into a smaller number of key pathways, a cluster analysis was undertaken in which the children were classified into groups that shared similar experiences across key housing dimensions.

The cluster analysis distinguishes four groups of study children who have experienced quite distinctive housing histories.

To explore the range of housing pathways, families' experiences were demarcated by five key dimensions over time: household density (or 'crowding'), family structure (sole-parent versus couple households), state of repair of the homes, and frequency of address changes.

Based on the key characteristics, we labelled these pathways Stable Couples, Mobile Sole-parents, Full House and Precarious Housing.

Despite this diversity of housing pathways there is limited difference in the youths' assessments of their health and social and emotional wellbeing with respect to their satisfaction with their lives, optimism about their futures, and their emotional wellbeing and resilience as measured by the Strong Souls instrument.

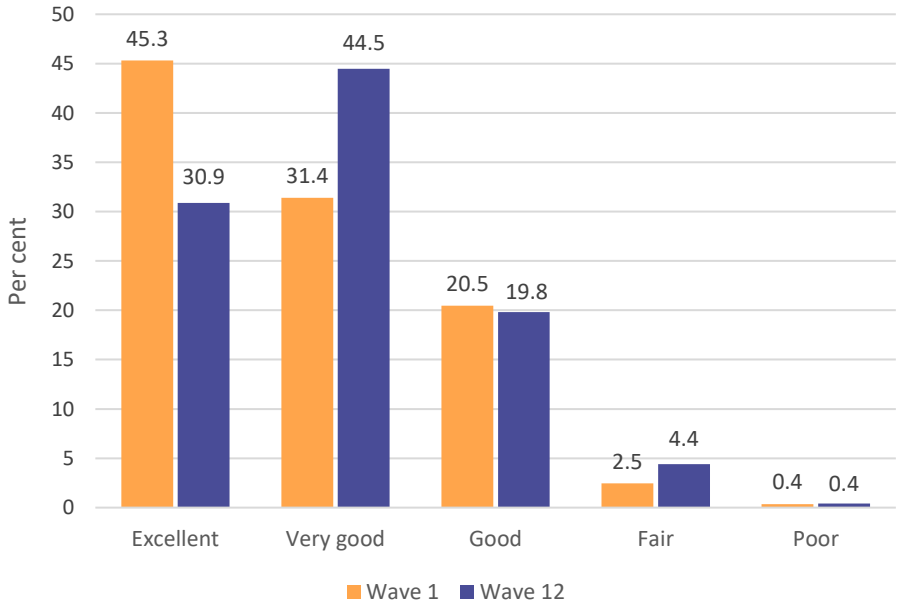
To take stock of the how the *Footprints in Time* children have grown up, we examine data from Waves 12 and 13, but with a focus on data from Wave 12 due to the substantial drop in the response rate in Wave 13. As a result of restrictions associated with the COVID-19 pandemic on data collection, responses dropped from 1,212 in Wave 12 to just 774 in Wave 13.

With the children being older, the focus in this Chapter also shifts away from parent, teacher, and school assessments of children's progress to the study children's own reports on different aspects of their lives. In Wave 12, the older cohort were aged between $15^1/_2$ and 17 years, while the younger cohort were aged from $12^1/_2$ to 14 years. To reflect their age, we also increasingly use the term 'youth' or 'study youth' in preference to 'children' or 'study child' when referring to results for these later waves.

Based on Parent 1 reports in that wave, 98 per cent of the younger cohort were at school (mainly in Years 6 and 7) and 91 per cent of the older cohort (mainly in Years 9 and 10). This will overstate the school retention rate if attrition from the survey is correlated with the study child dropping out of school, noting these estimates are based on responses for 73 per cent of the children from the original baby cohort, and 62 per cent of the children from the original child cohort.

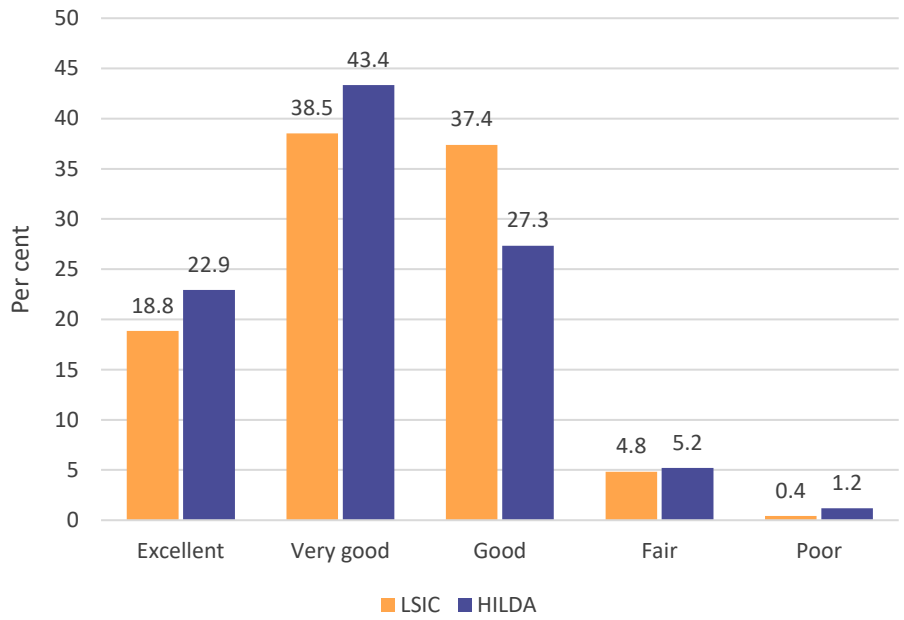
By parental reports, the study children have mostly grown up healthy. The distributions of parents' assessments of the study children's general health, as reported in Wave 1 and in Wave 12, are shown in Figure 18. This comparison relates to different samples of children, due to attrition. However, it looks virtually identical if the sample is limited to just the 1,196 children for whom we had valid ratings in both of those survey waves. When the children are older, fewer parents indicate that their child is in 'excellent' health, and more select 'very good' health. Consequently, very similar proportions felt their child was in either very good or excellent health: 77 per cent in Wave 1 and 75 per cent in Wave 12.

Figure 18: Parental ratings of study child's general health: Wave 1 and Wave 12



The study youth were asked to assess their own health in Wave 13.[9] Both cohorts were asked "In general, would you say your health is excellent, very good, good, fair or poor?". Unfortunately, as noted, this wave saw a substantial drop in response. In 2020, the study children ranged in age from $13^1/_2$ to 15 and $16^1/_2$ to 18. The same question is asked of people aged 15 years and older in the annual HILDA surveys. Figure 19 provides a comparison of the 706 valid responses of the LSIC youth and the 813 HILDA respondents aged 15 to 18 years for that same year. The distributions are broadly similar, although more of the LSIC study children indicated 'good' and fewer chose the categories of 'very good' and 'excellent'. Few youth assess their health as fair or poor: the proportions selecting 'poor' or 'fair' are very similar and in fact marginally smaller within the LSIC sample.

Figure 19: Youths' self-assessed general health: LSIC and HILDA, 2020



Notes: HILDA data for persons aged 15 to 18 in Wave 20, weighted by responding person weights.

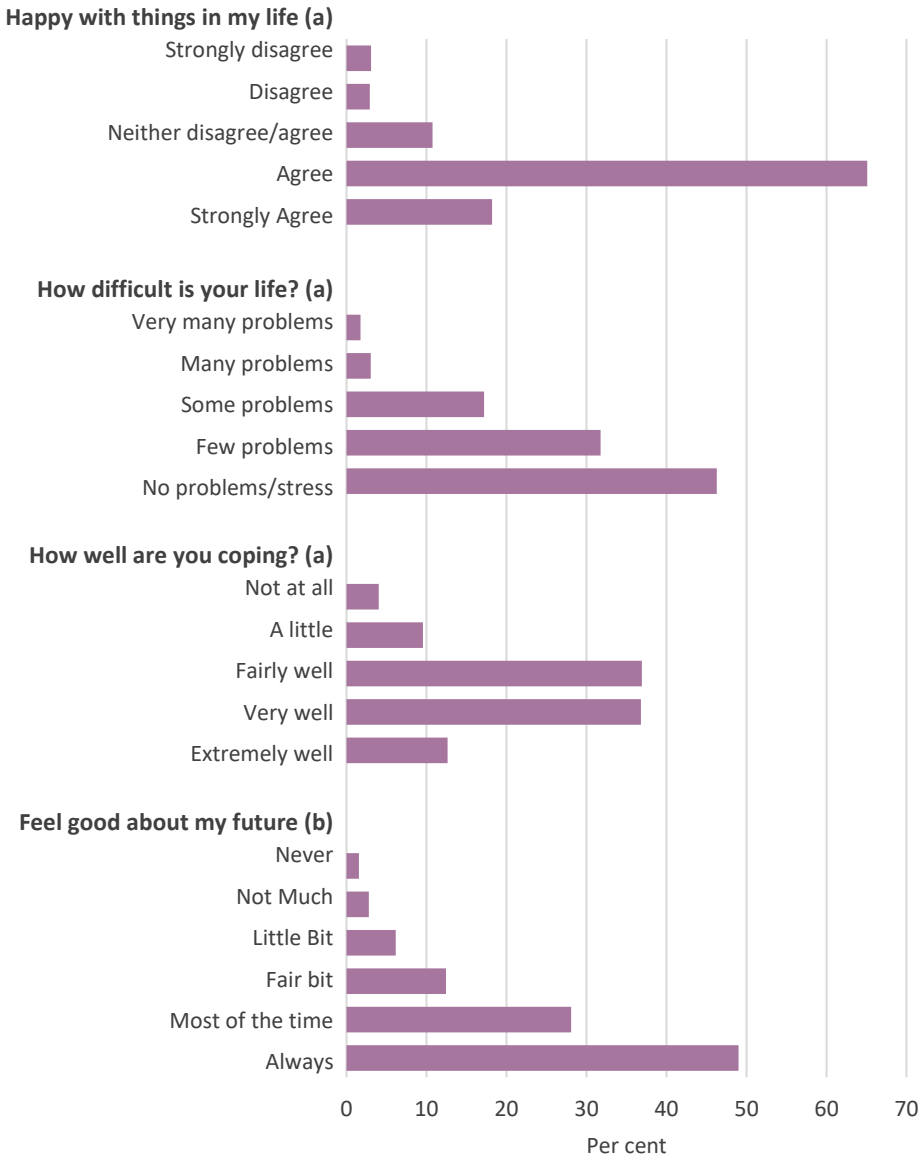
A range of questions contained in the Study Child questionnaires in Wave 12 and 13 explored the youths' own subjective life satisfaction and how they felt about the direction in which their life was heading. These included:

- Their agreement or disagreement with the statement 'In general, I am happy with how things are for me in my life right now'
- How difficult they feel their life is at present
- How well they think they are coping
- How often they feel good about their future.

[9] There was a statistically significant but far from perfect correlation between parent-reported and youths' self-reported assessments on the general health measure. For the 689 matching parent-youth observations in Wave 13, the Pearson correlation coefficient is 0.45 ($p<0.01$).

The response options for each question can be seen in Figure 20. The first three of these items were asked only of the older cohort in Wave 12, and those responses have been pooled with those from the younger cohort in Wave 13. In the figure, all response categories have been ordered from top to bottom with categories corresponding to higher wellbeing to the bottom. Overall, the study youth appear positive about life. Almost two-thirds agree they are generally happy with how things are in their lives, and 83 per cent either agreed or strongly agreed with that statement. Only 5 per cent report having many or very many problems, and 86 per cent report coping fairly well or better. Perhaps most reassuring is the children's sense of optimism about their future. Close to half of the youth indicated they 'always' felt good about their future, and over three quarters indicated they felt good about their future 'most of the time' or 'always'.

Figure 20: Selected subjective wellbeing measures, study youth in Waves 12 and 13



Notes: (a) Based on pooled responses from the K cohort in Wave 12 and B cohort in Wave 13; (b) Based on responses from B & K cohorts in Wave 12.

Housing pathways

The housing experiences of the study children over the course of their childhoods are extremely diverse, dynamic, and complex. To distil these into a smaller number of key pathways, a cluster analysis was undertaken in which the children were classified into groups that shared similar experiences across key housing dimensions. Cluster analysis is an exploratory technique for data analysis that seeks to identify naturally occurring groupings or 'clusters' within datasets (see StataCorp 2023). It is exploratory in the sense that it does not test hypotheses or impose restrictions based on hypotheses about the relationships in the data, but simply seeks to discover patterns within the data.

There are 537 study children for whom a Parent 1 questionnaire was completed in all the first 12 waves of *Footprints in Time*. Using this sample, summary statistics relating to key aspects of their housing experiences over the twelve years were generated. The dimensions included and their associated variable definitions are as follows:

- Living in a couple family versus sole-parent family – measured by the number of times across the 12 survey waves the study child was observed to be living in a sole-parent household. This variable ranges from a value of zero for children who were observed to be living with both parents in all waves, to 12 for those who were living with only one parent in every wave.
- Housing instability – the number of times the study child changed address over the 12 waves. This included a potential move in the very first wave if the responding parent reported that they had been living at their current address for less than 12 months. This variable ranged from zero moves to 9 moves, out of a theoretical maximum of 12 moves.
- Crowding – this summary variable is based on the number of bedrooms required to ensure all adults had their own bedroom and no more than two kids shared a bedroom. For couple households, we further assume two adults share one bedroom. In each wave, the number of extra bedrooms required to meet this condition is calculated. The value is set to zero if the house had a sufficient number of bedrooms, including if there were spare bedrooms. The summary variable equals the number of additional bedrooms required in the child's household in each year aggregated across the 12 years, and ranged from 0 to 48.
- Homelessness – based on Parent 1's reports of having been homeless in the last five years and indicating that the study child had been with them all or some of the time while they were homeless. The variable is set to 1 if such an episode of homelessness was reported in either of the two relevant waves (Wave 3 and Wave 9), and zero otherwise.

- Housing affordability stress – based on the number of times the parent reported that, in the previous 12 months, they could not pay the mortgage or rent in time because they were short of money. This question was asked from Wave 3, and the full range of possible values for this variable (zero to nine) is observed in the data.
- Major repairs needed – a sum of the number of waves in which the parent reported their home had major things that needed fixing. As the relevant questions were asked in Waves 1, 5, 6, 8 and 11, the variable aggregated over all waves ranged from zero to five.

The cluster analysis was run with these six variables using STATA's cluster routine and the 'kmeans' option. This groups together observations (study children) with similar means across the six variables. Each individual is assigned to one cluster based on the similarity of their own characteristics (variable values) to the group mean. To determine the number of clusters to include, STATA's default stopping rule is used. Essentially, this is based on information criterion that indicates the point at which dividing the observations into further clusters results in limited differences between the old and additional clusters.[10] The stopping rule identifies four clusters, although this is only very marginally preferred over 3 clusters on the basis of the test statistic. However, the characteristics of the fourth cluster do appear to portray an intuitively distinct group, and hence the four clusters are retained.

Table 6 reports the means of the six variables for each of the four clusters. These can be compared to the means for the full sample of 537 children reported in the final row. On the basis of the most pronounced differences in mean housing characteristics of each group, descriptors have been assigned to each housing pathway (the row headings in Table 6). Their defining characteristics can be summarised as follows:

- Stable Couple - the largest cluster, with 241 children. What most distinguishes this group of children is almost always living with both parents (or at least in a two-parent household) and rarely living in a household that would be considered crowded. Of all the groups, they also experience the fewest changes of address and the homes in which they live are the least likely to require repairs. Their parents reported the most incidences of having trouble meeting housing costs, but the differences in experiences of housing affordability stress across the four groups are quite minimal. On objective measures, children in this group have clearly had the most favourable housing pathways.

[10] Specifically, the Caliński–Harabasz pseudo-F stopping-rule.

- Mobile Sole-parent – the second largest cluster. On average, these 169 children were living with only one parent in around 10 of the 12 waves, compared to an average of 5 of 12 waves for the overall sample. Of all groups, they experienced the highest number of address changes. However, they were infrequently observed to be living in households requiring additional bedrooms, and fared relatively well in terms of incidences of homelessness, housing affordability stress or the home being in a state of disrepair.

- Full House – the third largest group with, 95 children, is most notably characterised by living in high occupancy housing, typically requiring one additional bedroom to meet our chosen standard. These homes are also more likely to have major things that need fixing. Otherwise, they experience quite stable housing, and are fairly typical in terms of time spent in sole-parent families, experiences of homelessness or housing affordability stress.

- Precarious Housing – the smallest group, with 32 children, is characterised by living in housing with very high crowding (typically requiring two additional bedrooms given the household occupancy) and in housing frequently requiring major repairs. The group were also susceptible to spells of homelessness and clearly experienced the most problematic housing pathways.

Table 6: Housing pathways: mean characteristics by cluster, Waves 1-12

		Mean of variable					
Cluster	*n.*	Sole parent	Number of moves	Bedrooms required	Homeless	Housing affordability stress	Major repairs required
Stable Couple	*241*	1.25	1.73	1.37	0.07	0.98	1.45
Mobile Sole-parent	*169*	9.88	2.61	2.31	0.12	0.86	1.65
Full House	*95*	5.19	2.04	11.55	0.09	0.94	1.96
Precarious Housing	*32*	5.53	2.19	27.34	0.16	0.78	2.41
Total	***537***	**4.92**	**2.09**	**5.02**	**0.10**	**0.92**	**1.66**

The two cohorts were distributed quite evenly across the housing pathways, with the exception that fewer of the older child cohort experienced the Precarious Housing pathway. The child cohort made up 39 per cent of the children with responses across all 12 waves, but only 9 (28 per cent) of the 32 children allocated to the precarious housing pathway. Children who experienced the Mobile Sole-parent and Stable Couple pathways had lived in more urban areas (see Figure 21). On average, children who experienced the Stable Couple pathway were living in one of the Major Cities in almost half (46 per cent) of the years over the twelve waves, and in Inner Regional areas in a further 31 per cent of observations. The Mobile Sole-parent group resided in Major Cities and Inner Regional areas for even more of their pathways (83 per cent of annual observations), although fewer resided in Major Cities compared to Stable Couples. Children who experienced the Mobile Sole-parent pathway resided in Outer Regional or more remote areas for only around 20 per cent of the years.

Stable Couples had by far the highest rate of homeownership (Figure 22). Of the four groups, Mobile Sole-parents were the most likely to be in private rental (30 per cent), but public housing was still the most common tenure for this group (39 per cent). That the Stable Couples cluster should have the highest incidence of housing affordability stress may seem surprising. This may be a result of the higher proportion of this group living in major cities where housing costs are typically higher, and mortgage repayments associated with their higher rate of homeownership.

Figure 21: Housing pathways by remoteness, Waves 1-12

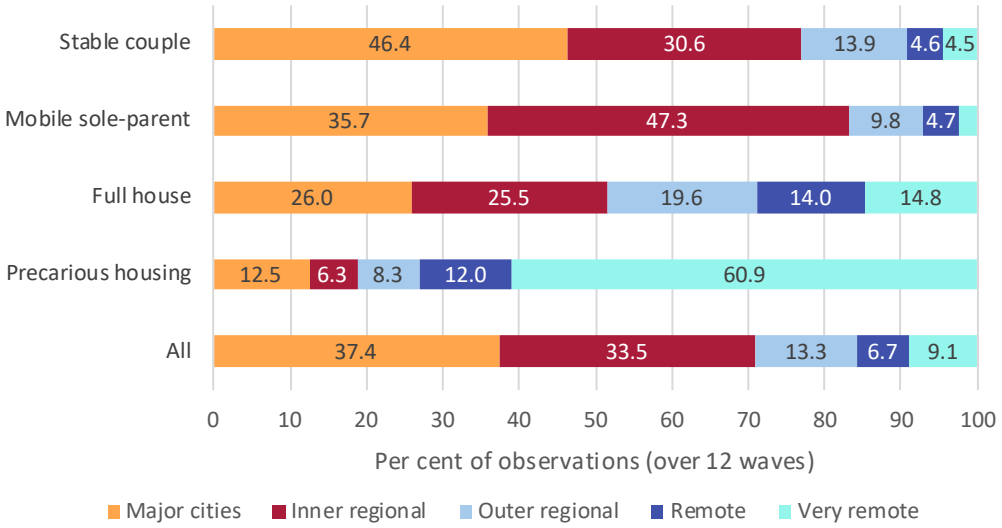
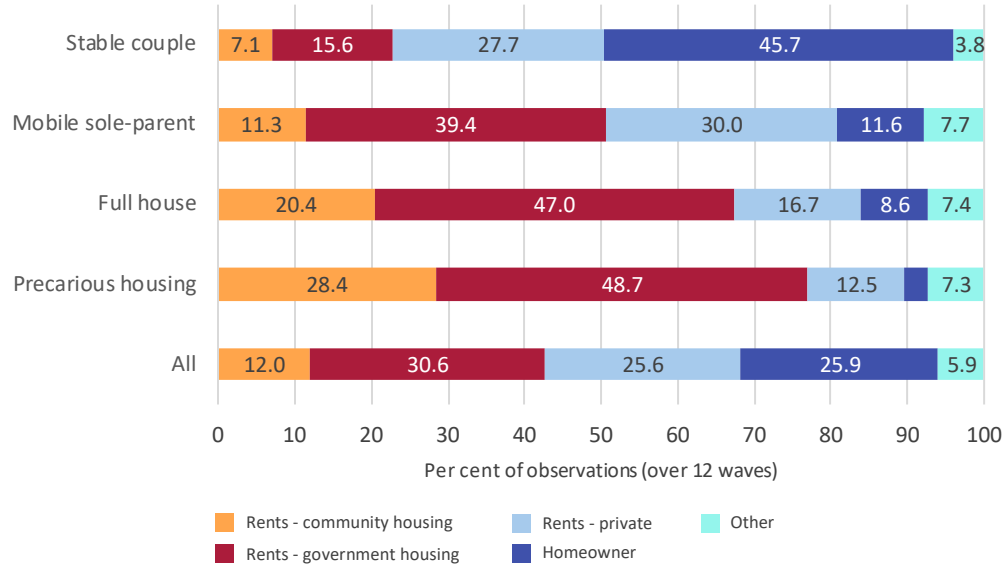


Figure 22: Housing pathways by tenure, Waves 1-12



The Precarious Housing pathway is very strongly associated with living in Very Remote Australia. Across the 12 waves, families in this group were observed to be living in a Very Remote area 61 per cent of the time compared to nine percent for the full sample. Homeownership is very low for this group, with public housing and community housing the main tenures, together making up three-quarters of observed tenancies for the Precarious Housing cluster. The Full House group are also more likely to be in community or public housing relative to the overall sample, and more likely to be located in each of the three less urban areas (Outer Regional, Remote, and Very Remote).

In terms of the SEIFA index for advantage and disadvantage, the Stable Couple group reside in the most advantaged neighbourhoods, with a mean decile over the 12 waves of 4.0. The Mobile Sole-parent and Full House families lived in areas ranked similarly on the index, both with average deciles of 2.9, while those from the Precarious Housing group lived in neighbourhoods with deciles averaging 1.7 on the SEIFA index. That is, they typically lived in neighbourhoods assessed as being in the 20 per cent of most disadvantaged areas on mainstream socio-economic indicators.

Housing pathways and children's outcomes

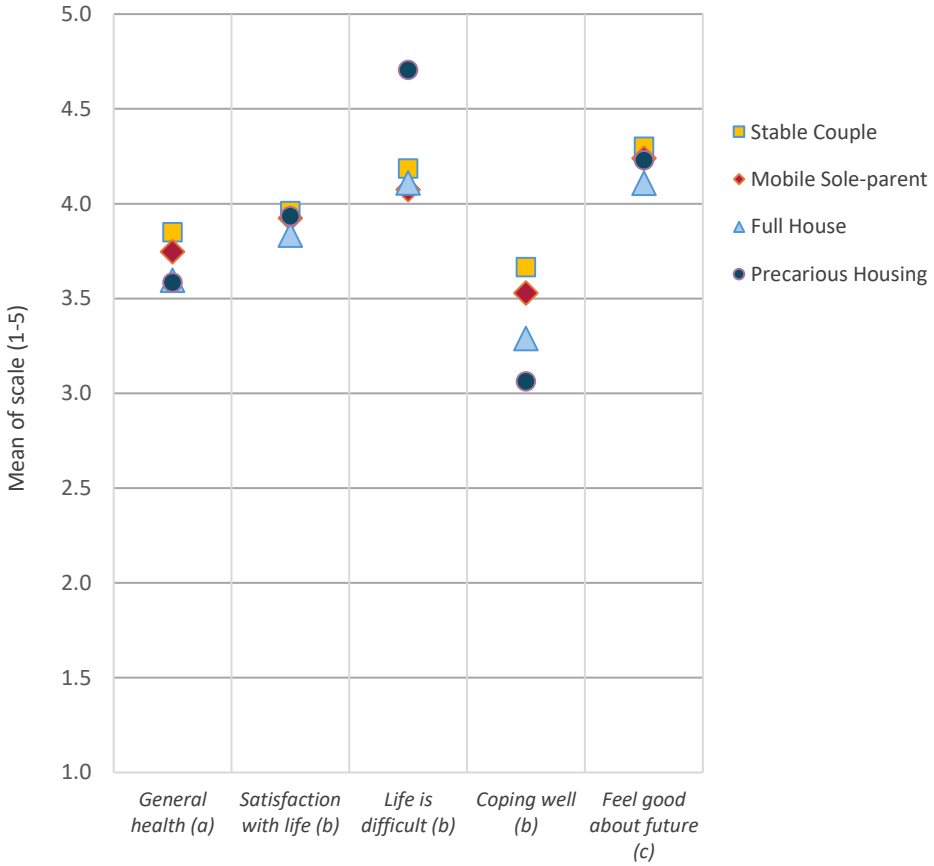
The pathways that have emerged from the cluster analysis identify starkly different childhood housing experiences, notably in terms of crowdedness, family composition and the state of repair of their homes. This final part of the empirical analyses looks at how these housing pathways appear to shape the study children's health and social and emotional development as they approach adulthood. Reported results in this section relate only to the 537 children for whom a Parent 1 survey was completed in all of the first 12 waves, and who were therefore allocated to a housing pathway through the cluster analysis. As always, it is important to exercise caution in inferring causation from observed associations. Most importantly, there may be additional factors that affect both children's outcomes and their housing circumstances, and biases resulting from non-random attrition.

The means for the health and wellbeing outcomes recorded in Waves 12 and 13 by the study child's housing pathway are plotted in Figure 23. Each marker represents the mean for a scale potentially ranging from 1 to 5, with a higher value equating to a more positive outcome.[11] It is true that the youth from the Stable Couple pathway had the highest mean on four of the five indicators, but the differences are very minor when it comes to the youths' self-assessments of their health, life satisfaction and how often they feel good about their future. The group of children who appear to have grown up in the most challenging housing circumstances, Precarious Housing, actually report having the fewest problems when asked in Wave 12 how difficult they felt their life is. However, they also feel they are coping less well compared to children from the other pathways. Youth who experienced the Precarious Housing group have the lowest means on this and only one other of the five indicators (general health). The sample size is relatively small for this group, so caution should be exercised in drawing wider conclusions based on the differences in observed means.

[11] The original response scale for how often the child felt good about their future included 6 items ranging from always (1) to never (6). This was reversed and standardised to range from 1 to 5 to be comparable to the other items.

The youths' own assessment of their general health was not collected in Wave 12, and as noted the responding sample reduced considerably in Wave 13. Using the parents' assessments of the child's general health, which was available in Wave 12, tells a similar story. Children from the Stable Couple and Mobile Sole-parent groups have the highest average parental ratings of their general health. The difference between children from these pathways is very small but, in the case of parental ratings, the mean for the Mobile Sole-parent group is marginally higher. These are followed by the Full House group and then the Precarious Housing group.

Figure 23: Study youths' health and wellbeing outcomes in final waves, scale means by housing pathway cluster



Notes: Refer to Figure 19 and Figure 20 for item scales. (a) Based on data from B&K cohorts in Wave 13; (b) Based on pooled responses from the K cohort in Wave 12 and B cohort in Wave 13; (c) Based on responses from B&K cohorts in Wave 12, 1 to 6 scale is standardised to range from 1 to 5.

Strengths and Difficulties Questionnaire

For both cohorts, the SDQ instrument was completed by the study children's teachers and by the children themselves in Wave 12. However, the number of teacher-completed SDQs was very limited for the sample for which housing pathways have been identified. Of the more numerous groups, 82 per cent of the children who experienced the Stable Couple pathway (n=61) were in the 'normal' range for the number of difficulties identified by their teachers based on established ranges for the total difficulties score (Goodman 1997 – see Section A1). Considerably fewer children from the Mobile Sole-parent pathway (n=39) were identified as being in the normal range for teacher-assessed difficulties, with 59 per cent in the normal range and 33 per cent in the borderline range of 12-15 on the total difficulties. Of the limited number of children with teacher assessed SDQ scores from the Precarious Housing and Full House pathways, the majority (around 70 per cent) were in the normal range.

We are not aware of established cut-off ranges for the total difficulties scores from the children's self-completed SDQ instruments, and certainly none have been established for Aboriginal and Torres Strait Islander children. Hence, we focus on the means of the total difficulties scores. These reveal very limited differences between children from the four different pathways, ranging from a low of 18.3 for the Precarious Housing group to a high of 20.8 for the Mobile Sole-parent group. The individual study youth scoring the lowest number of difficulties, and the three youth scoring the highest total difficulties scores, all came from with the Stable Couple pathway, highlighting the wide variety of outcomes that can materialise independently of children's housing history.

Strong souls

The final indicator investigated is based on the resilience questions from the Strong Souls instrument. As discussed in Section A2 below, Strong Souls was initially developed to provide a culturally appropriate tool for measuring the social and emotional wellbeing and resilience of Indigenous youth. Parents completed this instrument with respect to their own social and emotional wellbeing in Waves 1 through to 9 and again in Wave 11. The Instrument was included in the Study Child questionnaire in Wave 9 for the older cohort, and for both cohorts in Wave 12.

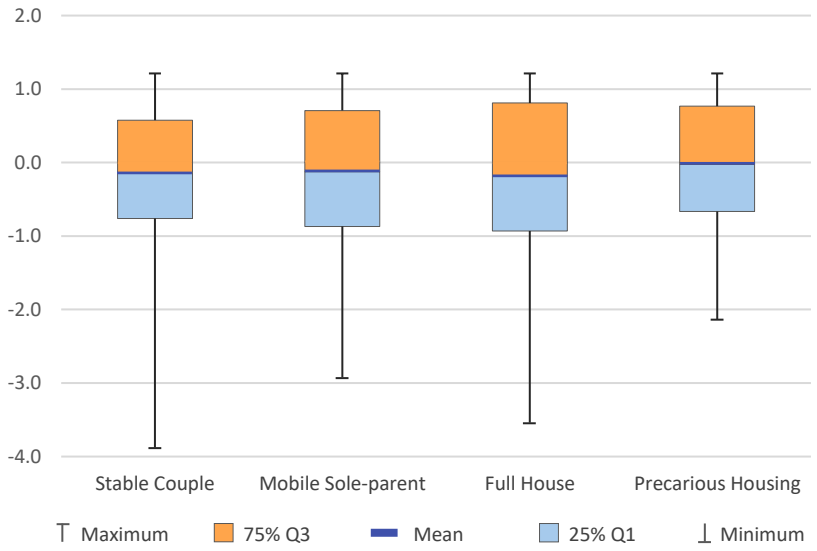
As an instrument designed to be culturally appropriate for Indigenous youth, variation in outcomes assessed on the basis of the Strong Souls tool, and how these compare to other self-assessed measures of social and emotional wellbeing, is of particular interest. A factor analysis of 11 items from the scale was used to generate a single Strong Souls factor score from the responses, which is standardised to have a mean of zero and standard deviation of one (see Appendix sections A1 and A2). The items making up the Strong Souls tool are all strongly correlated, meaning a single composite factor can be used to capture much of the variation in responses between individuals, and this dominant factor is used as a summary indicator of wellbeing and resilience.

The unexpected result is that children from the Precarious Housing pathway display the highest mean score on this measure. There is virtually no difference in scores for children from the Mobile Sole-parent and Stable Couple pathways, while the Full House group had the lowest scores. Figure 24 shows the means for each housing pathway.[12] Based on the standard t-test for the difference in means between two samples, the mean for the Precarious Housing group is not significantly different to those from the other pathways, though the small sample size for this group may contribute the low confidence in the estimated differences. However, it may still be considered surprising that this group did not have a significantly *lower* outcome when compared to the other groups, and particularly those with the Stable Couple pathways.

Figure 24 also displays information on the distribution of the Strong Souls factor scores for the children within each pathway. This shows the result for the Precarious Housing group is not obscured by this group having much higher variability in their scores. The distributions around the means are very similar across the four groups. It is possible to further investigate the contributions of individual items within the Strong Souls instrument to the differences in means observed between the four groups. By far, the major contributing source of the higher scores for the Precarious Housing group is their more positive confirmation of the statement 'You know a lot about your Aboriginal/Torres Strait Islander family history and culture'. This stronger connection to culture and family is likely to reflect the fact that those children experiencing the Precarious Housing pathway have resided in Very Remote Australia for a high proportion of their childhoods, and where connection to country, traditional languages, and cultural practices may be a more prominent part of Indigenous children's upbringing.

[12] By definition the factor score has a mean of zero across the pooled sample used in constructing the factor score. The fact that the means are negative for all 4 groups for Wave 12 indicates other observations included in the factor analysis had more positive results. These include the older cohort in Wave 9, and study children who were not assigned to a housing pathway due to attrition or missing observations.

Figure 24: Strong Souls factor scores, Wave 12, mean and distribution by housing pathway



Summary

The cluster analysis distinguishes four groups of study children who have experienced quite distinctive housing histories. Across twelve years of their childhood, these housing pathways are primarily demarcated by experiences relating to household density (or 'crowding'), family structure (sole-parent versus couple households), state of repair of the homes, and frequency of address changes. Based on the key characteristics, we have labelled these Mobile Sole-parents, Stable Couples, Precarious Housing and Full House pathways. On common indicators of housing suitability for children, these groups cover a wide spectrum of experiences: At one end, children in Stable Couple households typically live in stable housing with sufficient bedrooms and generally in good repair. At the other extreme, the Precarious Housing group frequently need to share bedrooms, have major things requiring fixing and are most susceptible to episodes of homelessness. Housing pathways are strongly intertwined with geography and with housing tenure.

Despite this diversity of housing pathways, and noting the sample size for the Precarious Housing group is limited, by Waves 12 and 13 there is limited difference in the youth's assessments of their health and social and emotional wellbeing across the housing spectrum. This is particularly so with respect to their satisfaction with their lives, optimism about their futures, and their emotional wellbeing and resilience as measured by the Strong Souls instrument. Children experiencing the most challenging housing histories can and do grow up strong, and favourable housing does not guarantee a positive transition into adulthood. Moreover, findings for the Precarious Housing group indicate a trade-off exists between common measures of housing adequacy and connection to family and culture that are important for Indigenous youths' social and emotional wellbeing, a relationship largely mediated by remoteness.

Chapter 9: Implications for policy, practice, and research

The preceding chapters present a statistical overview of the housing circumstances and housing trajectories experienced by the *Footprints in Time* children. They also report results from multivariate regression modelling of factors associated with housing outcomes; and the relationships between housing-related variables and a range of outcomes for the primary carers and the children, after controlling for other background characteristics. Even in a report focussing on housing, the richness of the LSIC data means we have had to be selective in the housing-related aspects to cover. The empirical analysis is supplemented in Chapter 4 by qualitative analyses based on the voices of the primary carers and children when asked to describe good and bad things about where they live.

In those chapters we have tried to be primarily descriptive and factual, to let the data and the survey participants' voices speak for themselves, drawing only limited judgements or implications. This has been to respect the intent of the *Footprints in Time* study design to take a strengths-based approach that highlights positive factors in children's lives. Such a descriptive overview of the housing experiences and trajectories of Indigenous children is of value in itself, given that no other data source exists that can portray the housing circumstances and pathways of Indigenous children in the detail made possible by the LSIC data. However, it is also important to relate the findings to issues of policy and practice. Since much of that discourse adopts a deficit lens, it is necessary to also engage with those viewpoints in discussing the implications of the findings.

General acceptance of the existence of an 'Aboriginal housing problem' has been evident from at least the 1960's (Memmott 1988) and permeates contemporary policy debates in Australia. Inferior housing circumstances experienced by Indigenous Australians relative to the non-Indigenous population are seen to contribute to disadvantage experienced by Indigenous children in health status and education outcomes. Overcrowding, housing instability, homelessness, and maintenance issues continue to be identified as key housing factors affecting Indigenous outcomes, with these problems seen to be particularly acute in remote communities (Australian Institute of Health and Wellbeing [AIHW] 2024, Dockery 2022, Habibis et al. 2016, Mintah et al. 2022). This is reflected in 'Closing the Gap' Target 9 of the current National Indigenous Reform Agenda, the key policy framework for addressing Indigenous disadvantage: "By 2031, increase the proportion of Aboriginal and Torres Strait Islander people living in appropriately sized (not overcrowded) housing to 88 per cent."[13]

[13] https://www.closingthegap.gov.au/national-agreement/targets

Poor housing is also highlighted as a risk factor in the AIHW's Aboriginal and Torres Strait Islander Health Performance Framework (AIHW 2024). Despite this widespread acceptance of a problem of inferior housing contributing to poorer outcomes for Indigenous children, direct empirical evidence of such causal effects of housing for the Indigenous population in Australia is scarce (see Dockery 2022).

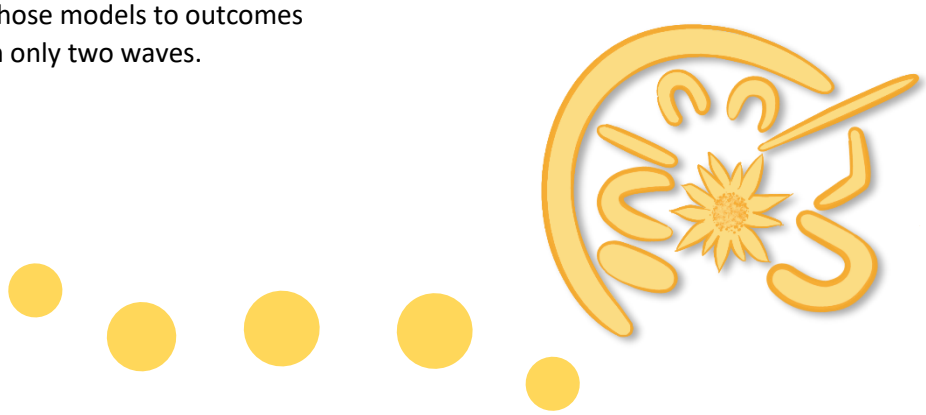
The *Footprints in Time* project's emphasis on the factors that contribute positively to help Indigenous children grow up strong and to be resilient, and the importance of family, extended family, and community (FaHCSIA 2009: 6), stands in clear contrast to these narratives. We believe the findings in this report offer novel and important insights for these narratives and policy issues and this can be attributed, in no small part, to the contrasting standpoint embodied in the design of the LSIC. A particularly intriguing finding is that, in general, housing circumstances tend to be inferior for Indigenous families living in Very Remote Australia when assessed on typical objective indicators of housing quality, yet on a range of subjective indicators Indigenous Australians in remote areas express high levels of satisfaction with their housing and neighbourhoods.

Housing pathways and resilience

The myriad ways in which housing may influence occupant outcomes, the interrelationships and trade-offs between those factors, and the complexity of pathways a child may experience as they grow up all contribute to the difficulty in establishing causal relationships between housing-related factors and children's outcomes. The cluster analysis undertaken in Chapter 8 helps us to make sense of these experiences, by partitioning the observed pathways into four main groups based on childhood experiences relating to their households' sole-parent status, frequency of moves, occupant density, homelessness, housing affordability, and disrepair. This is enriched by the availability of youths' self-assessed measures of their wellbeing in adolescence, including a measure of resilience derived from the Strong Souls instrument designed to be culturally appropriate for Indigenous youth.

The more recent waves of LSIC data reveal that, by and large, the cohort has grown up strong. The vast majority are assessed as being in good health, whether that assessment is made by themselves or their parents, are happy with how their lives are going as they navigate adolescence, and are positive about their future. As with previous research, the multivariate analyses reveal limited housing effects on either parents' or children's outcomes in terms of health and wellbeing. An exception is in regard to housing tenure, with homeownership associated with better child outcomes, higher parental satisfaction with the home and neighbourhood, fewer moves, and fewer incidences of disrepair. However, there is potential for omitted variable bias or selection effects to drive these results: that the relatively minor proportion of parents who purchased their own home (around 14 per cent) have attributes that we cannot control for in the modelling and that also contribute to positive life outcomes. Mintah et al. (2022), for example, show that Indigenous Australians with higher self-assessed health are more likely to transition from renting to homeownership. Surprisingly, episodes of homelessness were not found to be associated with poorer child health outcomes, although data availability restricted those models to outcomes observed in only two waves.

The four pathways identified in the cluster analysis characterise children's housing circumstances observed over the first 12 waves, and have been named as 'Stable Couples', 'Mobile Sole-parents', 'Full House', and 'Precarious Housing'. On mainstream measures of housing suitability, the 'Stable Couples' pathway would clearly be associated with the most favourable housing history, with two parents present in the home in most years, relatively low levels of occupant density, few moves, and homes rarely in need of major repairs. In contrast, the small but significant proportion (around 18 per cent) of children associated with the Precarious Housing pathway are more likely to have experienced high levels of occupant density, homes in need of repairs, and episodes of homelessness. On mainstream measures of housing suitability, they clearly experienced inferior housing relative to the cohort as whole, and particularly when compared to the Stable Couples group.



The challenges to identifying robust empirical associations between housing-related variables and children's outcomes in multivariate analyses are apparent from the outcomes observed for children experiencing these different pathways on two counts. The first is the relatively limited differences in the mean outcomes on measures of health and wellbeing for children experiencing these vastly divergent pathways. On some measures there is minimal variation in those mean outcomes, and on one – the children's assessment of how difficult their life is – those with the most challenging housing histories have the most positive mean outcomes. The second is the wide range of (relatively) positive and negative outcomes observed on the Strong Souls factor for children from each pathway. Many children who experience very challenging housing conditions during their childhood, on 'mainstream' criteria', grow up strong and healthy. Many children who grew up in more privileged housing backgrounds, have poorer health and wellbeing, and are finding life difficult as they approach adulthood. A similarly diverse range of outcomes is observed for the Mobile Sole-parent and Full House pathways.

This can be interpreted in a number of different ways. One is that housing characteristics have only minor effects on children's general health and socio-emotional development. As the results here and in previous research have found, effects appear more robust, and detrimental for, education outcomes. A second interpretation is that housing factors are important for children's development but, in the face of housing challenges, Indigenous families have the ability to draw on other means to compensate for those effects. Such resilience may be achieved through the strengths of family and extended kinship networks, parenting styles, or other coping mechanisms. Third, the measures typically used to capture housing suitability for families and children may not adequately capture housing quality for Indigenous people, suggesting the need for more culturally appropriate measures of housing preferences and aspirations for Indigenous people to be developed. The validity and cultural appropriateness of commonly used measures of crowding for Indigenous households, for example, has been questioned (Dockery et al. 2022).

These are not incompatible explanations, and each may have varying elements of applicability depending upon the particular housing factor in question and the context in which the family lives. As explained below, we believe variation in housing circumstances and in outcomes by remoteness offer strong support for the resilience explanation.

The strength of family and culture

In addition to the finding of only weak associations between housing variables and children's health and wellbeing outcomes, the analysis reveals contrasting results relating to remote housing. Going by a number of measures used as indicators of housing quality or housing outcomes for the general Australian population, the study families in more remote parts of Australia clearly have inferior housing outcomes. Some key examples include:

- Tenure – the incidence of homeownership declines steadily with remoteness, from 36 per cent for families living in ARIA level 1 (Major Cities) to being quite rare at just 2.5 per cent in ARIA level 5 (Very Remote Australia). The proportion in public (state government) housing increases with remoteness. In Very Remote Australia, over 70 per cent of the study children's families lived in public housing in Wave 8, around 3 times the proportion in Major Cities and Inner Regional Australia. A further 14 per cent of families in Very Remote Australia lived in community housing.
- Occupant density – households in both Major Cities and Inner Regional areas had a ratio of 1.4 occupants to bedrooms. This increased to 1.6 in Outer Regional Australia, 1.8 in Remote Australia, and 2.0 occupants to every bedroom in Very Remote Australia. Measures based on the number of extra bedrooms required show a similar increase in the incidence of 'crowding' with remoteness.
- Neighbourhood socioeconomic status – the families in Very Remote Australia lived in neighbourhoods of lowest socioeconomic status based on means for the three available SEIFA measures.
- State of repair – parents living in remote areas are more likely to report that their home requires major repairs.
- Sharing facilities – when asked in Wave 3, the proportion of parents who reported that they shared facilities with other families was highest in Remote Australia (40 per cent) and Very Remote Australia (20 percent). This compares to less than 4 per cent in the three non-remote ARIA categories.

The multivariate modelling finds little evidence of significant relationships between housing variables and parental health and wellbeing. The exception is homeownership, which is positively associated with self-assessed general health, but not with the Strong Souls or coping scores. Despite this regional variation in housing circumstances, parents living in Remote Australia and Very remote Australia report higher satisfaction with the home in which they live than those living in urban areas. Those raw differences in satisfaction ratings are confirmed by regression modelling which shows, after controlling for other factors, that living in Very Remote Australia is associated with significantly better parental outcomes across all three measures relative to those living in Major Cities. General health and Strong Souls outcomes are also higher for parents living in Remote Australia relative to Major Cities, although the differences are less pronounced.

Parents' subjective assessments of other aspects of their communities shed further light on the apparent contradiction that those in Very Remote Australia are living in inferior housing but are the most satisfied with their homes. Parents in Remote Australia and Very Remote Australia are markedly more satisfied with their feelings of being part of the community; and those in Very Remote Australia with the neighbourhood in which they live. This raises the likelihood that a stronger sense of community in more remote communities is one of the contributing factors, or 'omitted variables', contributing to the positive outcomes of parents and youth in spite of the observed housing characteristics.

Survey participants' qualitative comments support the importance of this sense of community. When asked what were some of the good things about where they lived (see Chapter 4) parents emphasised community: everyone knowing each other; good neighbours and good people in the neighbourhood; everyone looking out for one another, pulling together and supporting one another. Other positive aspects included connection to family ('family all live here', 'my family all grew up here'), attachment to country and culture ('my mother's country and my family all come here and stay here', 'having strong culture'), and being able to participate in traditional activities such as fishing, hunting, and collecting bush tucker.

While we do not know definitively whether these comments were made by parents living in remote, regional or urban areas, it is reasonable to infer from the descriptions of these positive aspects of where people live that many relate to living in remote communities, or at lease outside of urban areas; such as 'small community everyone know each other', 'away from drugs and alcohol', 'no humbug, quiet community', 'way out of town and all the bad things that happen', and 'everyone in the community is Aboriginal'; plus the many references to open spaces, being on country, cooking kangaroo, fishing and hunting. The strong association identified in the modelling between remoteness and satisfaction with feeling part of the community adds weight to hypothesis that these factors are more prominent in more remote Australia. Those living in the Major Cities are least satisfied on this dimension by a considerable margin. Recall also the multivariate modelling shows parents in Very Remote Australia have the highest level of satisfaction with the neighbourhood in which they live.

Returning to the muted differences in study youths' reported wellbeing conditional on the four housing pathways, we note that the main item contributing to the higher Strong Souls scores for youth experiencing the Precarious Housing pathway is their more positive confirmation of the statement 'You know a lot about your Aboriginal/Torres Strait Islander family history and culture'. In turn, this group had spent by far the largest proportion of their childhoods in remote Australia. Those from the Precarious Housing pathway were observed to be living in Very Remote Australia in 61 per cent of the observations across Waves 1-12. The next highest among the four pathways was the children who experienced the Full House pathway, who were observed to be living in Remote Australia for just 14 per cent of annual observations (Figure 21).

We therefore believe that there are strong grounds to suggest the paradox of the tenuous relationship between indicators of housing quality and both parents' and children's health and wellbeing can be explained by Indigenous Australians facing a trade-off between housing quality as measured by mainstream indicators, and the positive effects of a sense of identity and community created through connections to family, extended kinship, culture, and country. The trade-off exists because housing quality declines with remoteness, while strength and resilience grounded in connection to family and culture increases with remoteness.

It must be stressed that this is not to suggest that people living in urban areas do not also have strong connection to family, culture and country and strive to maintain those connections, only that that this can be more challenging in urban settings. Stakeholder consultations supported this view, with one indicating that Indigenous people often feel isolated when living in cities because, whether as homeowners, or private or public renters, they have little control over who they live near, in contrast to remote communities where typically many neighbours are of the same family group. Dockery (2012) also finds that a positive relationship between Indigenous Australians' sense of cultural identity and psychological wellbeing is moderated for those living in Major Cities and Inner Regional Australia because, in urban areas, a stronger sense of cultural identity is accompanied by heightened feelings of experiences of discrimination.

Another finding that may reflect the strengths of Indigenous kinship networks and communities is the limited evidence of adverse effects for children living in sole-parent families as opposed to couple households. The multivariate analyses identified significant and negative effects for children in sole-parent families in only two of many models estimated: for the teacher-assessed SDQ ($p<0.01$) and a weakly significant effect in the model for the NAPLAN writing score.

Wellbeing measures for children designated as experiencing the Mobile Sole-parent pathway were very similar to those for the Stable Couples group, despite experiencing more frequent changes of address, higher occupant density and episodes of homelessness. Hewitt and Walter's (2022) analyses of effects of household composition for parental and child health, based on the first eight waves of the LSIC, also found that the health of mothers and children in lone-parent families was no different to those in couple households, which contrasts to results for non-Indigenous populations. They interpret the finding as an indication that for Indigenous families "… sociocultural practices of childrearing and living arrangements that encompass extended kin are protective of health" (Hewitt and Walter 2022: 135).

Policy implications

Evidence presented in this report shows that Indigenous youth who have experienced starkly contrasting housing circumstances in childhood can and do grow up strong. This is not to dismiss very important issues facing Indigenous youth and ongoing gaps in outcomes when compared to non-Indigenous young Australians, particularly with respect to mental health and educational outcomes. However, in line with Mick Dodson's observation quoted in the introduction, it does highlight that there are many other, more important factors determining the life trajectories of Indigenous youth. Key among these are the strengths that arise from connection to family, culture and country. We believe the regional variation in housing circumstances, the empirical relationships between housing and parental and child outcomes, and subjective assessments of housing suitability all point to Indigenous Australians facing a trade-off between housing quality and those strengths grounded in kin and culture.

These findings have a number of implications for policy relating to housing and beyond. The observation of limited variation in children's outcomes, irrespective of starkly contrasting housing pathways, suggests that housing policies that focus only on physical aspects of housing or tenure arrangements are unlikely to be an effective approach to address socio-economic disadvantage for Indigenous families. The design of social housing policy and housing assistance needs to be cognisant of other factors that promote better outcomes for Indigenous families and children, and to ensure these are accommodated in the way they are targeted and governed, such as rules relating to occupancy rates. As one stakeholder pointed out, the same would apply to policies and practices governing the placement of Indigenous children in out of home care.

More generally, government must recognise the inherent strengths provided by connection to kin, culture, and country, and support it through appropriate housing, including remote housing, to ensure Indigenous people do not have to face a trade-off between culture and housing quality. The fact that we find little evidence that inferior housing has a negative effect on children's health outcomes should not be seen as an argument to reduce investment in housing in Aboriginal communities and remote Australia. The fact that an area offers additional positive amenities - particularly for the health and development of children – would provide a clear case to increase investment in the availability and quality of housing in that area, not to reduce it.

Moreover, investment in housing infrastructure or housing assistance will be most effective when the design of houses and the management of tenancies supports these strengths inherent in Indigenous family networks and attachment to culture. This suggests an important role for Indigenous controlled housing organisations, as they are likely to be more attuned to local groups' preferences for household living arrangements and their wider family and cultural connections. In terms of the raw means, parents renting in community controlled housing actually provided the highest levels of satisfaction with feeling part of the local community (see Figure 10).

However, this finding was not observed once other factors, notably remoteness, were controlled for in the multivariate analyses. Those models suggest homeowners and private renters were the most satisfied across the tenure categories. The multivariate results do show that parents living in community housing – which in this sample were primarily tenants of Indigenous controlled housing organisations - provided significantly higher ratings than public housing tenants with respect to the community being good for kids and for safety.

In terms of tenure, homeownership was observed to be associated with better outcomes across a range of indicators, including children's wellbeing and schooling outcomes, parental wellbeing, and parental assessments of housing and neighbourhood quality. This could be taken to suggest value in policies to promote private homeownership for Indigenous Australians, but as we have stressed it is difficult to claim homeownership has a causal effect on those outcomes.

Stakeholders indicated that, in some cases, occupants in community housing in remote communities did feel their tenure was effectively one of homeownership, as the family may have lived in the same house for multiple generations and expected to continue to do so. More research is needed to understand Indigenous people's aspirations for private homeownership and how this would apply within remote community contexts, and to test for causal effects of homeownership.

The survey results indicate room for improvement in the timeliness of maintenance responses by community housing organisations and public housing authorities. Need for major repairs was most prevalent for community and public housing tenants, and this was compounded in more remote areas. All rental tenants, including private renters, indicated that the major frustration with getting repairs done was the inaction of their landlords. There is some evidence that living in housing in need of major repairs contributes to poorer outcomes for children and parents, but it is difficult to determine whether this is a direct causal effect.

Future directions

In highlighting the good things about the communities and families that Indigenous children live in, the strengths-based approach urged by the *Footprints in Time* Steering Committee has been invaluable to unearthing these intricacies between housing and children growing up strong and resilient. This contrasts to the deficit narrative inherent in much of the discourse about Indigenous housing and remote communities, including in the Closing the Gap targets and reporting. Deficit viewpoints are particularly insidious when cultural differences are seen as the cause of the problem. Policy prescriptions are then inevitably assimilationist and Indigenous standpoints suppressed (Pickering 2000).

For Indigenous Australians, relevant culturally-based differences can include preferences for household occupancy levels, mobility, private ownership and sharing. On each of these, conventional measures of housing quality would identify 'gaps' between the Indigenous and non-Indigenous populations, but with little empirical evidence to support those assumptions. To ensure policy formulation avoids assimilationist assumptions and builds on the strengths of Indigenous families and culture there is a need for future research to develop housing measures that accurately reflect Indigenous preferences and aspirations for housing. This must include the incorporation of Indigenous standpoints in research and embrace developing notions of Indigenous data sovereignty.

As one example, while housing instability and mobility is often seen as counterproductive for children, by far the most common reasons for moves observed for the LSIC children are in fact for positive reasons, including moving to a bigger or better home, being allocated housing, and to be close to family (Figure 16). There is also a need for the development of culturally-specific measures of household measures of 'crowding' and, as noted, for research into Indigenous aspirations around homeownership. As the LSIC study youth transition to adulthood, there is the opportunity to include questions on the meaning of and aspirations for homeownership for this cohort.

The main exception to the finding of limited associations between housing and children's outcomes is with respect to education outcomes, in our case measured by NAPLAN results. Household occupancy levels, frequent moves, and living in public or community housing are all associated with lower test scores, and there is a steep decline in scores with remoteness. There is an urgent need to understand why these associations exist in contrast to other indicators of children's health and development, and how the delivery of education can be reformed to better meet the needs of Indigenous children in remote Australia.

Finally, we have argued for the potential benefits of an expanded role for Indigenous controlled housing organisations in delivering housing that is better aligned with Indigenous Australians' needs and aspirations. Quantitative and qualitative evidence of such positive effects, and on how this is achieved, is as an important topic for research in order to promote improved housing policies and outcomes for Indigenous Australians.

Appendix: Multivariate analyses

This section presents the multivariate analyses that lie behind the associations between housing circumstances and children's outcomes reported in the main chapters. The analyses look at the study children's physical health, social and emotional wellbeing, and academic achievement over the timeframe of the survey and at the parents' health and wellbeing.

For the child outcomes over the duration of the survey we concentrate on the 'global health measure' as reported by Parent 1. Social and emotional development is modelled using the Strengths and Difficulties Questionnaire (SDQ) 'total difficulties score'. The SDQ scores from questionnaires completed in reference to the study child by the parent and by the child's teacher are assessed. Academic achievement is proxied by students' matched NAPLAN scores from tests completed when children are in Years 3, 5, 7, and 9 at school. For parents' health the modelling is based on their self-assessed global health, and scores from the 'Strong Souls' instrument. To take stock of the children who have grown up strong, scores are used from the children's own responses to the Strengths and Difficulties Questionnaire and the Strong Souls questions.

In addition to these study child and parent outcome models, a range of other models are estimated to provide greater insight into housing experiences, such as models of parents' ratings of the quality of their communities and housing.

For each model, data from the maximum number of waves possible are used. This varies substantially across models due to data for many of the dependent variables being collected in some waves only. The number of observations is also reduced where there are missing observations within waves, such as for non-responses or 'don't know' responses. The number of observations used in the base models and the minimum, average, and maximum observations per individual are reported at the bottom of the tables. This provides a good idea of the number of waves of data used in the estimation (the panel dimension).

A1: Child outcome models

Results of base models of selected outcomes for the study children are reported in Table 8 (health and SDQ) and Table 9 (NAPLAN scores). These are termed 'base models' in the sense that they incorporate a key set of control variables likely to be associated with outcomes and which are available in all waves in which the outcome variable is also available. There are a number of other housing variables that may be associated with outcomes, but with more limited availability. We separately test for the effect of these by adding them to the set of explanatory variables reported in the base models. Full results for these supplementary models are not reported, but rather the key results of interest discussed in the chapters above.

The child outcomes modelled are the parental assessed 'global health measure'; social and emotional development based on teacher- and parent-completed SDQs; and academic achievement on NAPLAN tests. The modelling approaches for each of these three outcomes are discussed in turn below, along with an overview of results from the base models. The control variables include basic demographics of the study child (age and gender) and of the responding parents' characteristics (parents' own assessed health, gender, highest level of education and whether they are non-Indigenous). Parents' rating of the study child's general health is also included as an independent variable in models of social and emotional development and academic achievement.

Variables relating to living arrangements are whether the parent is a sole-parent as opposed to living with a partner, remoteness, housing tenure, a measure of household density (or crowding), and the decile of Relative Indigenous Socioeconomic Outcomes of their current neighbourhood. An alternative measure of neighbourhood socio-economic composition was also tested – the SEIFA decile for the Index of relative socioeconomic advantage/disadvantage. The estimate for the Indigenous specific measure had a higher level of significance in all but one model (parent-assessed SDQ), and for consistency was retained in all child outcome models.

A measure of the number of adverse major life events reported was also included. This is based on whether, in the past 12 months, the parent reported:

- they or a close family member had been badly hurt or sick
- a close family member or friend had passed away
- the family had serious worries about money
- the family had been humbugged or harassed for money
- they or a close family member had a drug or alcohol problem
- they or a close family member had been mugged, robbed or assaulted
- any of the study child's parents or carers leaving due to a family split-up.

A simple index of negative life events was constructed, which could potentially range from a value of 0 if no adverse major life events were recorded, to 7 if all those events were reported. A very small proportion of respondents did report all 7 adverse events in some waves, but the variable had an overall mean of 1.8 across the panel. One in five reported none of those events occurring in the past 12 months and 50 per cent of people reported just one event.

The index uses only a subset of the data collected in the 'major life events' section, with a view to limiting it to events that were unambiguously adverse and asked consistently across waves. In the first three waves the section included the question "In the last 12 months have you felt too crowded where you live, moved house, or had housing problems?" This was not utilised in the index as moving house may well have been a positive event. Effects of housing moves are also tested separately based on

data on address changes. Measures of the frequency of moves are not included in the base models as this required dropping observations from the initial waves.

A measure of financial stress was generated from questions included from Wave 3 onwards. This was specified as a dummy variable taking on a value of one if, in the last twelve months, the family had to do any of the following because of a shortage of money: could not pay bills on time, could not pay the rent or mortgage on time, went without meals, was unable to heat or cool the home, pawned or sold something, or sought assistance from a welfare or community organisation.

Dependent Variables

Study child global health

The health measure is based on the following question put to Parent 1: "In general, would you say (study child's) health is excellent, very good, good, fair or poor?". With five potential responses, a panel version of the ordered probit model is used to model the probability of the parent choosing a category associated with better health status.[14] The panel model takes account of the fact that there are repeat observations on children over time, with additional clustering of the standard errors by the Indigenous Area the family was initially recruited from to allow for the stratified or non-random nature of the sample selection for the LSIC (see Hewitt 2012).

The question has been asked in every wave of the survey, so there are as many as 13 observations for a single study child (see Table 8).

Strengths and Difficulties Questionnaire

The LSIC survey incorporated adapted versions of the Strengths and Difficulties Questionnaire, an instrument designed to assess psychological adjustment of children and youths aged 3 to 16 (see Goodman 1997, 2001). The SDQ instrument contains 25 items relating to positive and negative aspects of psychological adjustment grouped into five sub-scales: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and pro-social behaviour. The LSIC data contain a derived 'total difficulties score', which is the focus of analysis here. Validation studies have provided qualified support for the use of the SDQ for Australian Indigenous children (Williamson et al. 2014, Zubrick et al. 2006).

The total difficulties score is derived by summing the values on 20 of the 25 items (the pro-social behaviour scale is excluded), with the responses assigned numerical values of 0, 1, or 2, respectively, where the respondent indicates 'no', 'sometimes', or 'yes' in respect to whether the child displayed particular behaviours in the past 6 months. Following Goodman (1997), the total difficulties scores based on the parent-assessed SDQ are categorised into three ranges of normal (0-13 on the total difficulties score), borderline (14-16) and abnormal (17-40); and from the teacher-assessed SDQ as normal (0-11), borderline (12-15) and abnormal (16-40). As ordered, categorical variables, these models are also estimated using the ordered probit model, with the variables coded such that a positive effect equates to a movement from 'abnormal' to 'normal'.

[14] STATA corporations' XTOPROBIT is used.

The SDQ was included in the parent questionnaires for both cohorts in Waves 3, 6, 8 10 and 12, and for the Kids cohort only in Wave 4; and in the teacher questionnaire for the Kids cohort in Wave 2, and for both cohorts in Waves 3-6 and again in Waves 9-12.

National Assessment Program - Literacy and Numeracy

The LSIC data contain a large number of measures relating to the study children's cognitive ability, school achievement and school experiences (see Biddle et al. 2019). The analysis here focusses on scores from the Commonwealth Government's National Assessment Program – Literacy and Numeracy (NAPLAN). NAPLAN involves students sitting standardised tests in reading, writing, spelling, grammar, and numeracy in grades 3, 5, 7, and 9. The study children's test scores are available as matched data to the LSIC survey data. The Kids cohort has participated in the Year 3, Year 5, Year 7, and Year 9 NAPLAN tests. Data are currently available for the Baby cohort for the Year 3, Year 5, and Year 7 NAPLAN tests, with the Year 7 tests conducted in 2018 and 2019 when the children were aged around 12 to 13 years.

The NAPLAN scores have the advantage of being objective measures that will not be subject to potential respondent bias that might affect parental rated measures of child outcomes, noting the parent is also the source of many of the control variables used. However, there are also missing values for many children. In some cases, this may be due to non-consent or a failure in the matching of LSIC children to NAPLAN records. However, there is also the possibility that academically weaker children may be dissuaded by their schools from participating in the tests to boost school level results (see, for example, Fitzgerald *et al.* 2023, p.32). This latter source of missing data would potentially lead to biased estimates in the modelling.

The NAPLAN scores are available as standardised scales as explained in the LSIC User Guide:

"… a score of 600 in reading will have the same meaning in 2012 as in 2010. The use of a common scale that spans years 3, 5, 7 and 9 allows both the comparison of each student's achievement with other students, and the analysis of each student's progress across time" (DSS 2023: 58).

This makes the NAPLAN scores well suited as dependent variables for panel models with repeat observations on subjects over time. Models with each of the five NAPLAN scores are estimated as random-effects linear panel models, with the results reported in Table 9.

Strong Souls

The discussion of the dependent variables used in models for parents' outcomes, contained below in Appendix A2, provides an overview of the Strong Souls instrument and the construction of a single Strong Souls resilience score using factor analysis. The Strong Souls instrument was included in the Parent 1 questionnaires in Waves 1 through to 9 and again in Wave 11. A factor analysis of the data pooled across those waves revealed one dominant factor and the scoring coefficients associated with that factor are used to define a single Strong Souls resilient factor as an outcome variable.

The Instrument was included in the Study Child questionnaires in Wave 9 for the older cohort, and for both cohorts in Wave 12. Again, a factor analysis was used to generate

a single variable as a summary Strong Souls measure for the study children. While this variable has not been used in the multivariate modelling, it is explored as an outcome variable in the analysis of housing pathways in Chapter 8. A factor analysis was conducted for the pooled data from Wave 9 and Wave 12, and the resulting factor pattern and standardised scoring coefficients reported in Table 7.

As with the parents' responses, there is one very dominant factor with an Eigenvalue of 3.6 (1.1 for the second factor), meaning much of the information across the items can be summarised using this composite factor.[15] The Strong Souls item 'You get used to big changes fast' had a large number of missing responses ('don't know' or refused). As this item also had the weakest correlation with the main factor, it was dropped from the analyses to allow retention of those observations. In the coding in the LSIC dataset, a lower number on each item corresponds to a more positive sentiment. Hence, the opposite of the resulting standardised score is used as the measure of emotional wellbeing and resilience.

Table 7: Principal components factor analysis of Strong Souls items for study child, Waves 9 and 12

Item put to Study child: How much is this like you? (Aways, most times, sometimes, not really)	Factor pattern	Standardised scoring coefficient
People say that you are really good at something	0.650	0.180
You are a good son/daughter to their family	0.625	0.173
You have a strong family who help each other	0.622	0.172
When you get sad you can find something that makes you happy	0.605	0.168
You have an older person looking out for you	0.582	0.161
When you're sad you have a person you can talk to	0.570	0.158
You know someone who is a really good person	0.569	0.158
You have lots of friends	0.538	0.149
You are really into something (like music, football, clothes)	0.531	0.147
You laugh and make jokes a lot	0.515	0.143
You know a lot about your Aboriginal/Torres Strait Islander family history and culture	0.462	0.128

Thurber et al. (nd.) conducted an exploration of the properties of the Strong Souls items using data from responses of the Kids Cohort in Wave 9. They found an 8-item 'resilience' measure based on the Strong Souls questions approaches acceptable convergent and divergent validity, and correlates with other key socio-emotional wellbeing measures, albeit weakly. The resilience construct they recommend contains eight of the items included in the one-factor resilience summary score used here (Table 7). The items included in the measure derived in this report but omitted in

[15] In factor analysis or principal component analysis, the eigenvalue is a measure of how much of the variance in a set of variables can be explained by the one factor, where that factor is a composite scalar of the original variables.

Thurber et al's (nd.) preferred construct are the items relating to people saying you are really good at something; being able to find something that makes you happy; and knowing a lot about your family history and culture.

Results

Housing related variables:

Remoteness is captured by a series of mutually exclusive dummy variables relating to the Accessibility/Remoteness Index of Australia category of the family's address. The omitted or comparison category is Major Cities. There is a clear and strong association in which children's NAPLAN scores decline with remoteness, and this is one of the largest effects observed on these indicators of academic achievement (Table 9). Parents' assessment of their child's general health is also significantly worse for children living in Remote and Very Remote Australia. However, there is no evidence from either the parent-assessed or teacher-assessed SDQ scores that children's social and emotional adjustment varies systematically by remoteness (Table 8).

All child outcomes improve with the decile of Relative Indigenous Socioeconomic Outcomes of the neighbourhood, although the effect is not statistically significant in the case of the parent assessed SDQ scores. There is little difference in academic achievement of children living in community housing relative to state government housing tenants. However, scores tend to be higher for those in private rental, and are markedly higher for homeowners. Homeowners' children also display higher parent-assessed SDQ scores (highly significant) and general health and teacher assessed SDQ scores (both weakly significant). The better outcomes observed for children of parents who own their own home should not necessarily be interpreted as an effect of the housing they live in or tenure arrangement *per se*. While the models control for some other characteristics, including parental education, there are likely to be other positive but unobserved attributes of those Indigenous families who achieve homeownership that also correlate with children's outcomes (omitted variable bias).

Following Dockery (2022), three different specifications of measures of household density were tested: (1) the straight ratio of the number of people in the household to the number of bedrooms; (2) the number of additional bedrooms required for all household members to have their own bedroom, but assuming a couple would share the one room and (3) the number of additional bedrooms required for one couple and all other household adult members to have their own bedrooms, and allowing up to two children to share a bedroom. For measures (2) and (3), the variable is set to zero if there are an adequate number or spare bedrooms given the requirement. None of these measures were significant in the models for general health and SDQ scores. Measure (2), labelled 'Bedrooms req'd' had the highest significance in the models for general health and the teacher assessed SDQ, and was retained in the models in Table 8. In contrast, measure (3), labelled 'Bedrooms req'd – kids share', had the highest significance in the models of NAPLAN scores. Requiring extra bedrooms after allowing for up to two children per bedroom is associated with marginally lower NAPLAN scores on each test, with the coefficients significant but at only the 10 per cent level in one model.

Other controls

For the study child, better assessed general health is also associated with better socio-emotional development and academic achievement. Girls fare better than boys on all outcome measures, Across the NAPLAN tests, the gender gap is smallest in numeracy. There is evidence in only two of the models that living in a sole-parent family as opposed to a couple household, has a negative effect on child outcomes, namely the teacher-assessed SDQ ($p<0.01$) and weakly significant in the model for the NAPLAN writing score. Parent 1 being male is associated with a better rating of the child's general health, but this may reflect a difference in the way mothers and fathers interpret the scale than an actual health effect. Having a non-Indigenous Parent 1 appears to be associated with better outcomes within the schooling system, with significantly higher scores on the teacher-assessed SDQ scale and modestly significant and positive associations with several of the NAPLAN scores. Parent 1's assessment of their own health correlates significantly with their rating of the study child's health ($p<0.01$) and their assessment on the SDQ (weakly significant).

The variable capturing whether Parent 1 is in employment is significant in the NAPLAN models only. Parental education is positively associated with child health, both SDQ scores, and a number of the NAPLAN scores.

Family experiences of negative life events do appear to impact negatively on the children, but with varying levels of significance across the models. Available from Wave 3, the measure of financial stress was not included in the base models for the child's general health or teacher-assessed SDQ due to the loss of observations in the early waves. When added to the base model for parent-assessed SDQ, this measure had quite a sizeable and highly significant negative effect. There is weak evidence that it is also associated with lower general health rating when added to that base model ($\beta=-0.04$, $p=0.05$), but was insignificant in the teacher-assessed SDQ and in all models for NAPLAN test scores.

Table 8: Child Outcomes: base models for general health and socio-emotional development

		SDQ	
VARIABLES	General health	Parent-assessed	Teacher-assessed
Study child characteristics			
General health [0-5]		0.180***	0.114***
		(0.000)	(0.005)
Male [0,1]	-0.086**	-0.305***	-0.776***
	(0.047)	(0.000)	(0.000)
Age [months]	-0.001	0.003***	-0.004***
	(0.105)	(0.000)	(0.000)
Parent/Family characteristics			
Sole-parent household [0,1]	-0.002	-0.066	-0.177***
	(0.964)	(0.197)	(0.007)
P1 is male [0,1]	0.188***	-0.011	-0.210
	(0.009)	(0.931)	(0.354)
P1 non-Indigenous [0,1]	0.076	0.024	0.269***
	(0.127)	(0.785)	(0.008)
Parental health [1-5]	0.388***	0.048*	0.021
	(0.000)	(0.065)	(0.515)
P1 highest education [0,1]			
Did not complete Yr 10	-0.042	0.018	-0.101
	(0.593)	(0.815)	(0.467)
Yr 10/11 or equivalent	—	—	—
Yr 12 or Certificate I/II	0.011	0.010	0.276**
	(0.793)	(0.883)	(0.016)
Cert III/IV or Uni degree	0.099**	0.176***	0.166**
	(0.031)	(0.004)	(0.029)
Remoteness Level [0,1]			
Major city	—	—	—
Inner regional	0.023	0.059	0.088
	(0.680)	(0.552)	(0.470)
Outer regional	-0.048	0.216**	0.185
	(0.382)	(0.050)	(0.117)
Remote	-0.138**	0.014	0.129
	(0.016)	(0.905)	(0.508)
Very Remote	-0.267***	0.094	0.188
	(0.001)	(0.541)	(0.306)
Decile of Relative Indigenous Socioeconomic Outcomes	0.024***	0.023	0.063**
	(0.009)	(0.146)	(0.014)
Housing tenure [0,1]			
Rents, community housing	-0.050	-0.224**	-0.069
	(0.326)	(0.019)	(0.450)
Rents, government housing	—	—	—

		SDQ	
VARIABLES	General health	Parent-assessed	Teacher-assessed
Rents, private	-0.032	0.069	0.087
	(0.503)	(0.378)	(0.306)
Homeowner/purchaser	0.130*	0.278***	0.234*
	(0.052)	(0.007)	(0.057)
Other	-0.015	0.031	-0.162
	(0.814)	(0.778)	(0.193)
Bedrooms req'd	0.007	0.013	0.026
	(0.528)	(0.369)	(0.233)
Negative life events	-0.021**	-0.108***	-0.044**
	(0.027)	(0.000)	(0.014)
Financial stress		-0.229***	
		(0.000)	
Intercepts:			
Cut1	-2.048***	-0.109	-1.178***
	(0.000)	(0.648)	(0.000)
Cut2	-1.089***	0.524**	-0.556**
	(0.000)	(0.028)	(0.041)
Cut3	0.381**		
	(0.036)		
Cut4	1.652***		
	(0.000)		
Observations	14,792	5,977	3,451
Individuals	1,751	1,572	1,285
Obs per individual			
Min	1	1	1
Mean	8.4	3.8	2.7
Max	13	6	7
Wald chi-square	812.1	292.8	232.0
Prob(chi-sq)	(0.000)	(0.000)	(0.000)

Notes: Robust p-values in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Child outcomes: base models for NAPLAN test scores

VARIABLES	Reading	Writing	Spelling	Grammar	Numeracy
Constant	79.77***	141.91***	69.91***	88.22***	14.24
	(0.000)	(0.000)	(0.000)	(0.000)	(0.356)
Study child characteristics					
General health [0-5]	4.29**	5.91***	4.07**	6.71***	4.98***
	(0.039)	(0.005)	(0.019)	(0.010)	(0.001)
Male [0,1]	-25.19***	-43.29***	-34.34***	-31.27***	-9.65***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)
Age [months]	2.49***	1.63***	2.70***	2.23***	2.86***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Parent/family characteristics					
Sole-parent h-hold [0,1]	-2.27	-6.89*	-5.92	0.43	-4.20
	(0.492)	(0.073)	(0.134)	(0.890)	(0.194)
P1 is male [0,1]	-12.31*	-12.47	-0.55	-11.33	1.79
	(0.098)	(0.163)	(0.932)	(0.194)	(0.751)
P1 non-Indigenous [0,1]	9.84**	8.89*	0.48	11.55**	7.35*
	(0.046)	(0.097)	(0.922)	(0.035)	(0.069)
Parental health [1-5]	-1.17	1.68	-0.18	0.15	-0.12
	(0.489)	(0.333)	(0.906)	(0.934)	(0.925)
Any parent works	10.90***	7.51*	6.14**	7.84*	9.15***
	(0.010)	(0.074)	(0.049)	(0.092)	(0.008)
P1 highest education [0,1]					
Did not complete Yr 10	-4.50	-6.78	-7.61	-9.35	-11.85**
	(0.487)	(0.300)	(0.300)	(0.215)	(0.028)
Yr 10/11 or equivalent	—	—	—	—	—
Yr 12 or Certificate I/II	3.35	11.64**	5.94	0.91	1.42
	(0.566)	(0.039)	(0.271)	(0.876)	(0.735)
Cert III/IV or Uni degree	3.41	13.40***	9.16**	10.71**	9.36***
	(0.384)	(0.005)	(0.026)	(0.017)	(0.001)
Remoteness Level [0,1]					
Major city	—	—	—	—	—
Inner regional	-11.98**	1.04	-9.50	-11.05*	-6.30
	(0.014)	(0.838)	(0.115)	(0.055)	(0.189)
Outer regional	-28.66***	-20.15**	-14.59*	-24.33***	-18.30***
	(0.000)	(0.010)	(0.055)	(0.003)	(0.001)
Remote	-45.68***	-36.22***	-37.82***	-44.53***	-27.19***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Very Remote	-50.99***	-55.87***	-47.12***	-51.31***	-48.71***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Decile of Relative Indigenous Socioeconomic Outcomes	3.09***	4.94***	3.32***	3.73***	3.49***
	(0.005)	(0.000)	(0.010)	(0.003)	(0.000)

VARIABLES	Reading	Writing	Spelling	Grammar	Numeracy
Housing tenure [0,1]					
Rents, community housing	-0.68	9.55*	-1.43	2.61	-5.12
	(0.911)	(0.083)	(0.750)	(0.682)	(0.304)
Rents, government housing	—	—	—	—	—
Rents, private	14.32**	15.20***	3.56	11.02*	4.31
	(0.026)	(0.008)	(0.433)	(0.052)	(0.190)
Homeowner/purchaser	33.41***	29.15***	14.12***	34.65***	19.98***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Other	13.30*	17.51***	9.00*	9.83	8.97**
	(0.063)	(0.008)	(0.073)	(0.237)	(0.044)
Bedrooms req'd - kids share	-3.43**	-3.82**	-6.00***	-6.27**	-2.57*
	(0.041)	(0.025)	(0.000)	(0.020)	(0.068)
Negative life events	-2.54**	-1.26	-1.77*	-0.84	-2.47***
	(0.023)	(0.281)	(0.075)	(0.417)	(0.002)
Observations	2,550	2,545	2,553	2,544	2,508
Individuals	1,183	1,181	1,185	1,179	1,175
Obs per individual					
Min	1	1	1	1	1
Mean	2.2	2.2	2.2	2.2	2.1
Max	4	4	4	4	4
R-squared	0.5	0.39	0.49	0.42	0.61

Notes: Robust p-values in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

A2: Parent 1 outcome models

As with the child outcomes, base models of selected parental outcomes are developed utilising as many waves of the data as possible. The outcomes analysed are parents' self-assessed general health, a summary score based on questions from the Strong Souls instrument designed to assess resilience, and a measure of how well parents feel they are coping in their life. The results attained when additional variables of interest are added are discussed at relevant points throughout the report, though their inclusion will often necessitate estimating the model on a more limited sample. The key housing variables included are the same as those included in the child outcomes models: ARIA remoteness category, housing tenure, neighbourhood decile of Indigenous relative socio-economic outcomes and household density. Controls are also now added for the parent's age via a series of dummy variables.

Dependent variables and model specification

Parental health

The parental health measure is based on the self-assessed 'global health measure'. In each wave except Wave 8, Parent 1 is asked 'In general, would you say your health is excellent, very good, good, fair or poor?'. As with the child health outcome, this is modelled using the ordered probit model, with 5 ordered categories and higher values corresponding with better assessed health.

As with the child outcome models, all the parental outcomes models allow for clustering of the standard errors by initial Indigenous Area to allow for the stratification of the sample.

Strong souls

Strong Souls is a survey instrument initially developed to provide a culturally appropriate tool for measuring the social and emotional wellbeing of Indigenous youth participating in the Aboriginal Birth Cohort study. A pilot study found the instrument to have acceptable validity and reliability for measuring the wellbeing of Aboriginal adolescents (Thomas et al. 2010). A range of items from the instrument tested in the Strong Souls pilot stage were adapted into LSIC, and there are some differences in the items included in the LSIC and the finalised Strong Souls instrument (Thurber et al. 2019). For this study 12 items from the 'resilience' sub-scale of the Strong Souls instrument are used as a measure of parents' wellbeing (see Table 10). These questions were asked of all Parent 1's in Waves 1, 4 and 8, but only of new P1's in most intervening waves (Waves 2, 3, 5, 6, 7, 9 and 11). The section was included again for all parents in Wave 13, but without three of the items. Hence, the resilience outcome measure used here is generated up to Wave 11 only.

There are no established scoring scales or cut-off points for an index based on responses to the Strong Souls questions (Thurber et al. 2019). To derive a single outcome variable from the Strong Souls instrument, a factor analysis of the pooled responses from Waves 1 to 11 was conducted. On each item, the parents' responses are recorded against a 4-point scale of either 'always', 'most times', 'sometimes' or 'not really'; or else 'lots', 'fair bit', 'little bit', 'not much'; and coded 1 to 4 respectively. A principal components analysis returned one very dominant factor with an eigenvalue of 3.48, with the eigenvalue of the second factor dropping to 1.10, and the outcome measure is based on the correlations of the variables with that dominant factor. Table 10 shows the resulting factor pattern and the standardised scoring coefficients used to generate the 'resilience' measure.

The measure is standardised to have a mean of zero and standard deviation of one. Note that the coding of the items in the LSIC data is such that a lower number corresponds to responses consistent with higher resilience (i.e. 1='always' or 'lots'; 4='not really' or 'not much'). Therefore, the negative of the resulting standardised score is used in the modelling, such that a higher score indicates more resilience. The base model is estimated using random-effects linear regression.

Table 10: Principal components factor analysis of Strong Souls items, parents, Waves 1-11

Item put to Parent 1:	Factor pattern	Standardised scoring coefficient
You got lots of friends	0.619	0.178
You know someone who is a really good person	0.600	0.173
You laugh and make jokes a lot	0.596	0.171
When you're sad or upset you have a person you can talk to	0.580	0.167
You have a strong family who help each other	0.571	0.164
People say that you are really good at something (like music, cars, clothes, football, fishing, computers, etc)?	0.559	0.161
When you get sad or upset, you're able to find something that cheers you up	0.536	0.154
You are a good son or daughter to your family	0.516	0.148
You got an older person looking out for you	0.506	0.145
You are really into something (like music, cars, clothes, football, fishing, computers, etc)	0.497	0.143
You get used to big changes in your life fairly quickly	0.443	0.128
You know a lot about your (Aboriginal/Torres Strait Islander) family history and culture; (if non-Indigenous: You understand a lot about Aboriginal/Torres Strait Islander history and culture)	0.389	0.112

Coping

The third parental outcome measure is based on two items that were asked in the Social and Wellbeing section of the survey in eight waves commencing from Wave 2 and including Waves 11-13. The questions are:

How difficult do you feel your life is at present? Answered on a scale from 1='No problems or stress'; 2='Few problems', 3='Some problems', 4='Many problems; and 5='Very many problems'.

How well do you think you are coping? Answered on a scale from 1='Not at all', 2='A little'; 3='Fairly well'; 4='Very well'; and 5='Extremely well'.

The first of these was reverse-coded and the responses to the two questions summed to give a continuous variable that could range from a value of 2 for parents with very many problems and who are not coping at all through to 10 for parents who have no problems or stress and who are coping extremely well. The base model for this 'coping' measure is estimated using a panel linear regression model with random effects.

Results

Results for the base models for parental outcomes are reported in Table 11 and briefly discussed here, along with the rationale for inclusion or exclusion of explanatory variables. There are substantially more observations and a significantly greater panel dimension available for estimation of the model for parental health. Few significant effects are observed for the Strong Souls resilience factor score. There is weak evidence that being a sole-parent as opposed to a partnered parent is associated with lower health and greater difficulty coping. The results imply general health deteriorates with age, while parents aged 35-44 find life most challenging. If the responding parent is not Indigenous, they tend to report better general health, but lower on the Strong Souls resilience factor ($p<0.05$). Noting that the Strong Souls instrument was developed specifically to measure social and emotional wellbeing for Aboriginal and Torres Strait Islander people, this model was also estimated using only responses from Indigenous parents, and all results (not reported) are qualitatively similar.

Variables based on whether the responding parent is in work and, where applicable, either parent is in work were tested in the models for Strong Souls. These were not included in the model for general health or for coping because of potential endogeneity given health status and coping are also likely to shape employment outcomes. Responding parents who are in work score significantly higher on the Strong Souls factor score. The variable based on either parent being in work was less significant, and its inclusion results in a substantial drop in the number of observations available given it cannot be determined in Waves 1 and 2.

There is some evidence that parents who completed school score higher on the Strong Souls measure, but overall there is only limited evidence of associations between these measures of parental outcomes and their educational attainment.

One of the most robust patterns to emerge from the parent outcomes model is that parents living in more remote settings have better outcomes. There is some evidence of a general positive gradient in outcomes with increasing remoteness, but for general health, Strong Souls and feelings of coping with life, outcomes for those parents living in Very Remote Australia score are significantly better than for parents living in Major Cities.

Homeowners report significantly higher general health, but there is otherwise minimal evidence of effects of housing tenure on parent wellbeing. The three measures of household density were tested in each model, but all proved insignificant. The measure providing the highest level of significance was retained for completeness.

The count of negative life events was highly significant and negative in models for Strong Souls and coping. Again, it was not included in the base model for general health, since one of the contributing items in the negative life events index is whether they or a close family member had been badly hurt or sick. If it is included, it has a negative association with health whether in the contemporaneous wave (β=-0.11, $p<0.01$) and if lagged by one period (β=-0.07, $p<0.01$) to reduce the direct endogeneity.

Finally, the measure of financial stress was included in the base model for coping. The results indicate that experiences of financial stress are strongly associated with parents finding their lives more challenging. The questions contributing to the financial stress measure were asked only from Wave 3 onwards, and hence the variable was not used in the base models for general health and Strong Souls to avoid the loss of observations. When it is included, financial stress was found to have strong and significant negative associations with general health (β=-0.21, $p<0.01$) and with the Strong Souls resilience score (β=-0.19, $p<0.01$). Hence, financial circumstances appear to be one of the stronger predictors of parents' wellbeing.

Table 11: Parental outcomes: base models for general health and social and emotional wellbeing

VARIABLES	General health[a] (orderd probit)	Strong Souls - resilience (OLS)	Coping (OLS)
Constant		-0.12	6.80***
		(0.281)	(0.000)
Parent characteristics			
Sole-parent [0,1]	-0.05*	-0.01	-0.08**
	(0.065)	(0.822)	(0.020)
Age [0,1]:			
15_24 years	0.15***	-0.05	-0.15
	(0.000)	(0.445)	(0.276)
25-34 years	—	—	—
35-44 years	-0.17***	-0.01	-0.15***
	(0.000)	(0.893)	(0.000)
45 years and older	-0.43***	-0.05	-0.11*
	(0.000)	(0.425)	(0.084)
P1 is male [0,1]	0.10	-0.01	0.06
	(0.288)	(0.879)	(0.499)
P1 non-Indigenous [0,1]	0.30***	-0.13**	-0.03
	(0.000)	(0.050)	(0.546)
Parental health [1-5]			0.36***
			(0.000)
P1 is employed		0.14***	
		(0.000)	
P1 highest education [0,1]			
Did not complete Yr 10	0.01	-0.14***	-0.06
	(0.884)	(0.007)	(0.448)
Yr 10/11 or equivalent	—	—	—
Yr 12 or Certificate I/II	-0.01	0.03	0.02
	(0.744)	(0.551)	(0.648)
Cert III/IV or Uni degree	0.03	0.08	-0.10*
	(0.436)	(0.174)	(0.061)
Remoteness Level [0,1]			
Major city	—	—	—
Inner regional	0.01	0.19	-0.01
	(0.888)	(0.102)	(0.879)
Outer regional	-0.03	0.17**	0.11*
	(0.603)	(0.022)	(0.068)
Remote	0.16**	0.25**	0.02
	(0.034)	(0.027)	(0.769)
Very Remote	0.29***	0.35***	0.28***
	(0.000)	(0.000)	(0.001)
Decile of Relative Indigenous Socioeconomic Outcomes	0.02**	-0.00	-0.00

VARIABLES	General health[a] (orderd probit)	Strong Souls - resilience (OLS)	Coping (OLS)
	(0.034)	(0.834)	(0.816)
Housing tenure [0,1]			
Rents, community housing	-0.02	-0.05	0.03
	(0.562)	(0.380)	(0.670)
Rents, government housing	—	—	—
Rents, private	0.02	0.02	-0.04
	(0.581)	(0.752)	(0.441)
Homeowner/purchaser	0.25***	0.07	0.04
	(0.000)	(0.182)	(0.488)
Other	0.12*	0.00	-0.08
	(0.060)	(0.997)	(0.318)
Household density			
Bedrooms required	-0.01	0.01	
	(0.245)	(0.542)	
Bedrooms req'd - kids share			-0.02
			(0.241)
Negative life events [0-7]		-0.05***	-0.18***
		(0.000)	(0.000)
Financial stress [0,1]			-0.36***
			(0.000)
Observations	14,007	4,260	7,046
Number of individuals	1,757	1,719	1,521
Obs per individual			
Min	1	1	1
Mean	8	2.5	4.6
Max	12	6	7
R-squared		0.04	0.19
Wald chi-square	236.1	163.9	1358.3
Prob(chi-sq)	(0.000)	(0.000)	(0.000)

Notes: a. cut points from the ordered probit model not reported. Robust p-values in parentheses *** p<0.01, ** p<0.05, * p<0.1.

A3: Attitudes about the community, neighbourhood and the homes people live in

Table 12: Parental ratings of community amenity, scales from 1 to 5, ordered probit panel models

VARIABLES	Good community for little kids?[a]	How safe is this community?[b]	Are there good places to play?[c]
Study child characteristics			
Male [0,1]	-0.070**	-0.027	0.031
	(0.029)	(0.572)	(0.360)
Age [months]	0.000	0.003***	0.001
	(0.564)	(0.000)	(0.154)
Parent/family characteristics			
P1 non-Indigenous [0,1]	0.073	0.081	0.087*
	(0.165)	(0.157)	(0.082)
P1 highest education [0,1]			
Did not complete Yr 10	0.053	-0.025	0.035
	(0.213)	(0.627)	(0.398)
Yr 10/11 or equivalent	—	—	—
Yr 12 or Certificate I/II	0.140***	0.124*	0.063
	(0.002)	(0.059)	(0.199)
Cert III/IV or Uni degree	0.150***	0.057	0.126***
	(0.001)	(0.349)	(0.007)
Parental health [1-5]	0.119***	0.109***	0.065***
	(0.000)	(0.000)	(0.001)
Sole-parent h-hold [0,1]	-0.016	-0.030	0.025
	(0.642)	(0.480)	(0.477)
Housing tenure [0,1]			
Rents, community housing	0.243***	0.281***	0.038
	(0.004)	(0.002)	(0.671)
Rents, government housing	—	—	—
Rents, private	0.306***	0.337***	0.240***
	(0.000)	(0.000)	(0.000)
Homeowner/purchaser	0.479***	0.443***	0.236***
	(0.000)	(0.000)	(0.000)
Other	0.300***	0.573***	0.114*
	(0.000)	(0.000)	(0.060)
Remoteness Level [0,1]			
Major city	—	—	—
Inner regional	0.216**	0.279**	-0.266**
	(0.017)	(0.011)	(0.036)
Outer regional	0.118	0.078	-0.348***
	(0.104)	(0.459)	(0.000)
Remote	-0.288***	-0.378***	-0.851***
	(0.003)	(0.000)	(0.000)
Very Remote	0.393***	0.388***	-0.408***
	(0.000)	(0.001)	(0.000)
Decile of SEIFA of Advantage and disadvantage [0-10]	0.141***	0.139***	0.114***

VARIABLES	Good community for little kids?[a]	How safe is this community?[b]	Are there good places to play?[c]
	(0.000)	(0.000)	(0.000)
Intercepts:			
Cut1	-1.297***	-1.271***	-1.265***
	(0.000)	(0.000)	(0.000)
Cut2	-0.318***	-0.121	-0.421***
	(0.000)	(0.291)	(0.003)
Cut3	0.609***	1.047***	0.344**
	(0.000)	(0.000)	(0.011)
Cut4	1.782***	2.331***	1.365***
	(0.000)	(0.000)	(0.000)
Observations	8,122	5,220	8,107
Individuals	1,732	1,698	1,732
Obs per individual			
Min	1	1	1
Mean	4.7	3.1	4.7
Max	10	7	10
Wald chi-square	661.3***	508.6***	397.2***
Prob(chi-sq)	(0.000)	(0.000)	(0.000)

Notes: Robust p-values in parentheses, *** p<0.01, ** p<0.05, * p<0.1. a. 5-pt scale from 1='Very bad' to 5='Really good'; b. 5-pt scale from 1='Dangerous' to 5='Very safe'; c. 5-pt scale from 1='no, none' to 5='Yes there are lots of good places'.

Table 13: Parental satisfaction with their home and neighbourhood, scales from 0 to 10, linear regression models, Wave 5 (cross-section)

	Satisfaction with …			
VARIABLES	Home in which you live	How safe you feel	Feeling part of community	Neighbourhood in which you live
Constant	7.681***	9.048***	6.395***	6.763***
	(0.000)	(0.000)	(0.000)	(0.000)
Study child is male	-0.146	-0.107	-0.105	-0.358**
	(0.340)	(0.324)	(0.424)	(0.013)
Parent/Family characteristics				
Sole-parent household [0,1]	-0.334**	-0.288**	-0.290	-0.282**
	(0.048)	(0.011)	(0.145)	(0.030)
Parental health [1-5]	0.275***	0.216***	0.396***	0.206**
	(0.002)	(0.000)	(0.000)	(0.012)
P1 highest education [0,1]				
Did not complete Yr 10	-0.157	-0.397**	0.079	0.025
	(0.575)	(0.020)	(0.821)	(0.925)
Yr 10/11 or equivalent	—	—	—	—
Yr 12 or Certificate I/II	-0.484	-0.424**	-0.136	0.021
	(0.124)	(0.021)	(0.650)	(0.946)
Cert III/IV or Uni degree	-0.622*	-0.223	0.326	0.029
	(0.063)	(0.184)	(0.401)	(0.920)
Housing tenure [0,1]				
Rents, community housing	0.171	0.203	0.087	0.202
	(0.575)	(0.203)	(0.643)	(0.459)
Rents, government housing	—	—	—	—
Rents, private	0.068	0.095	-0.308	0.163
	(0.781)	(0.616)	(0.144)	(0.482)
Homeowner/purchaser	1.036***	0.393**	0.650**	0.639**
	(0.000)	(0.032)	(0.019)	(0.010)
Other	0.520	0.174	0.083	0.565*
	(0.108)	(0.475)	(0.799)	(0.065)
Remoteness Level [0,1]				
Major City	—	—	—	—
Inner Regional	-0.037	0.088	0.550**	0.329
	(0.874)	(0.638)	(0.013)	(0.284)
Outer Regional	0.409	0.118	0.518	0.670***
	(0.156)	(0.587)	(0.121)	(0.005)
Remote	0.364	0.231	1.262***	0.287
	(0.117)	(0.293)	(0.000)	(0.460)
Very Remote	0.792***	0.195	1.872***	1.048***
	(0.009)	(0.404)	(0.000)	(0.000)
Neighbourhood deciles [0-10]				
SEIFA of Advantage and disadvantage	0.075**			0.166***
	(0.045)			(0.000)

	Satisfaction with …			
VARIABLES	Home in which you live	How safe you feel	Feeling part of community	Neighbourhood in which you live
Relative Indigenous Socioeconomic Outcomes		-0.066**	-0.082**	
		(0.024)	(0.037)	
Household density				
Persons per bedroom	-0.363***			
	(0.003)			
Bedrooms req'd – kids share		0.069	0.074	0.118*
		(0.285)	(0.419)	(0.080)
Negative life events [0-7]	-0.183***	-0.139***	-0.117*	-0.057
	(0.001)	(0.001)	(0.060)	(0.381)
Financial stress [0,1]	-0.428**	-0.162	-0.180	-0.124
	(0.014)	(0.146)	(0.224)	(0.297)
Street conditions [0,1]				
Not a main road	—	—	—	—
Main road, single lane	-0.011	-0.256*	-0.138	-0.199
	(0.963)	(0.069)	(0.388)	(0.187)
Main road, multiple lanes	-0.284	-0.050	-0.706**	-0.668***
	(0.256)	(0.766)	(0.010)	(0.003)
Observations	1,037	1,083	1,076	1,032
R-squared	0.101	0.069	0.154	0.091
F-statistic	9.16	6.31	12.15	8.9
(Prob > F)	(0.000)	(0.000)	(0.000)	(0.000)

Notes: Robust p-values in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

A4: Need for repairs and likelihood of moving

Table 14: Probability of major things needing fixing, and of moving before next wave, probit model results

VARIABLES	Home needs major repairs	Moves in coming wave
Constant	0.167**	1.341***
	(0.042)	(0.000)
Wave 1 [0,1]	0.126*	
	(0.065)	
Wave 2 [0,1]	0.210***	
	(0.001)	
Parent/Family characteristics		
P1 non-Indigenous [0,1]	-0.128**	-0.082*
	(0.043)	(0.089)
P1 highest education [0,1]		
Did not complete Yr 10	-0.005	-0.117**
	(0.916)	(0.011)
Yr 10/11 or equivalent	—	—
Yr 12 or Certificate I/II	-0.073	-0.075
	(0.251)	(0.188)
Cert III/IV or Uni degree	0.011	-0.124**
	(0.863)	(0.016)
Sole-parent household [0,1]	-0.124***	0.117***
	(0.009)	(0.001)
P1 is employed [0,1]	-0.095**	-0.013
	(0.025)	(0.677)
Housing tenure [0,1]		
Rents, community housing	0.097	0.022
	(0.137)	(0.692)
Rents, government housing	—	—
Rents, private	-0.316***	0.662***
	(0.000)	(0.000)
Homeowner/purchaser	-0.370***	-0.422***
	(0.000)	(0.000)
Other	-0.554***	0.509***
	(0.000)	(0.000)
Remoteness Level [0,1]		
Major city	—	—
Inner regional	-0.103	0.018
	(0.139)	(0.689)
Outer regional	-0.051	0.172***
	(0.498)	(0.007)
Remote	0.177**	0.291***
	(0.033)	(0.000)
Very Remote	0.161*	-0.036
	(0.078)	(0.636)

VARIABLES	Home needs major repairs	Moves in coming wave
Decile of SEIFA of Advantage and disadvantage [0-10]	-0.044***	0.003
	(0.000)	(0.722)
Household density		
Persons per bedroom		0.111***
		(0.000)
Bedrooms required	0.042***	
	(0.001)	
Negative life events [0-7]		0.044***
		(0.000)
Observations	7,279	11,867
Individuals	1,719	1,613
Obs per individual		
Min	1	1
Mean	4.2	7.4
Max	6	12
Wald chi-square	366.81	807.5
Prob(chi-sq)	(0.000)	(0.000)

Robust p-values in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

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