

# **Wellbeing outcomes of lower income renters: a multi-level analysis of area effects**

authored by

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## ACRONYMS

ABS	Australian Bureau of Statistics
ACCS	Australian Community Capacity Study
ASGS	Australian Standard Geographical Structure
ARIA	Accessibility/Remoteness Index of Australia
ATO	Australian Tax Office
BMI	Body Mass Index
CCD	Census Collection District
CRA	Commonwealth Rent Assistance
DEEWR	Department of Education, Employment and Workplace Relations
ENHR	European Network of Housing Researchers
ERP	Estimated Resident Population
FaHCSIA	Families, Housing, Community Services and Indigenous Affairs
GDP	Gross Domestic Product
GIS	Geographic Information Systems
HILDA	Housing Income and Labour Dynamics in Australia
ISP	Income Support Payments
LGA	Local Government Area
MIAESR	Melbourne Institute of Applied and Economic and Social Research
NLF	Not in the Labour Force
OLS	Ordinary least squares
PCA	Principles Components Analysis
PHDCN	Project on Human Development in Chicago Neighbourhoods
POA	Postal Area
SAs	Statistical Areas
SA1	Statistical Area Level 1
SA2	Statistical Area Level 2
SA3	Statistical Area Level 3
SA4	Statistical Area Level 4
SEIFA	Socio-economic Indexes for Areas
SES	Socio-economic Status
SLAs	Statistical Local Areas



## EXECUTIVE SUMMARY

Whether it is better to be 'poor' in a 'poor area' or one that is more socially diverse has been a central concern for research attempting to establish the neighbourhood effects associated with concentrations of disadvantage and for policies aiming to ameliorate these effects. There is general agreement among researchers and policy-makers that neighbourhoods can exert both a negative and positive impact on wellbeing with a strong evidence base, particularly emanating from the US and Western European countries, of where effects are most pronounced and the causal mechanisms underpinning them. However, despite more than two decades of research, there remain critical questions unanswered and methodological challenges to overcome in how researchers adequately isolate the impact of an area from the personal attributes of the individuals who live there.

Being able to isolate the impact of an area above and beyond individual characteristics requires the use of robust longitudinal methods including both quantitative and detailed qualitative area-based ethnographies (van Ham et.al. 2012). There are currently significant gaps associated with both approaches, particularly in Australian studies specifically examining the longitudinal interrelationship between area diversity, the type of housing lived in, and wellbeing outcomes. The general consensus in the Australian evidence is that lower advantaged areas do not necessarily generate universally 'bad' outcomes for social rental residents' wellbeing, and that greater recognition needs to be paid to the wellbeing outcomes of private renters who are also concentrated in more disadvantaged areas.

This research seeks to address the quantitative gap in the evidence base by providing a longitudinal multi-level statistical analysis that can isolate individual and household level effects from area level effects. In doing so, the research will combine the construction of spatial measures indicative of 'social mix' from the Australian Census of Population and Housing data with individual panel data from the Household Income and Labour Dynamics in Australia (HILDA) survey. Specifically, the overall aim of the research is to compare the characteristics and place-based wellbeing outcomes of lower income renters across areas indicative of high to low social mix.

This AHURI Positioning Paper is the first of two reports documenting the outcomes for the project. The purpose of this Positioning Paper is to outline the conceptual and methodological framework that will guide the empirical analysis across all stages of the research. It also presents our sample framework for identifying lower income renters and a preliminary descriptive and area-based analysis of their circumstances drawing on 10 years of HILDA data and the 2011 Census.

Within the scope of this research, wellbeing is viewed as a multi-level holistic concept that, to be adequately comprehended must be conceptualised and measured within an integrated framework incorporating the situational context as well as subjective and objective measures of quality of life. In recognising the multi-level nature of wellbeing, the research questions and hypotheses are informed by the theoretical assumptions of the *Social Quality* framework in which wellbeing is conditional on four interrelated factors including socio-economic security, social inclusion, social cohesion, and social empowerment. To establish this we test the following:

- Moderate to higher-income private renters living in better off areas will exhibit greater personal life satisfaction and wellbeing compared with moderate to higher income private renters living in less advantaged areas.
- Social and lower-income private renters living in better off areas will exhibit greater personal life satisfaction and wellbeing compared with social and low-income private renters living in less advantaged areas.

In examining the interactions between tenure and conditional factors of social quality we will test the following specific hypotheses:

- Social and lower-income private renters living in more advantaged areas will have limited social networks compared with those living in more disadvantaged areas. Life satisfaction will be lower for low-income private and social renters with limited social networks.
- Social and low-income private renters living in or moving to more advantaged areas will have increased participation in the labour market over time contributing to greater life satisfaction, particularly satisfaction with employment opportunities once controlling for labour market engagement.
- Social renters will exhibit higher housing related socio-economic security compared with lower income private renters. The housing related socio-economic security of low-income private renters remaining in advantaged areas will be lower due in part to housing market pressures. Private renters living in more advantaged and socially diverse areas with low socio-economic security will have lower life satisfaction.
- Social renters are less likely to move out of areas of more concentrated disadvantage and social mix compared with low-income private renters. Higher social networks and housing related socio-economic security mediate life satisfaction of social renters who remain in disadvantaged areas.

The following research questions guide the analysis:

1. How do the demographic characteristics and housing costs of low-income renters living in areas of higher and lower advantage compare?
2. Is the social quality of life of lower-income renters living in more advantaged areas better compared with those living in less advantaged locations?
3. Is there evidence of any area level effects on wellbeing outcomes once statistically controlling for individual household level characteristics?

This Positioning Paper begins to address the first two questions by defining and presenting the rationale for our definition of lower-income renters. It also profiles the characteristics of four renter groups and outlines the types of locations in which groups of renters are most concentrated. Also presented is a preliminary exploratory analysis of subjective wellbeing that will be used to help refine the focus of the multi-level analysis.

## Key findings

The key descriptive findings at this first stage of the research include the following:

- Within HILDA there are typically higher proportions of social and private renters in receipt of income support that fall above rather than below the conventional definition of low income as being 40 per cent or below of the population-weighted household income distribution. As wellbeing is measured on an individual basis, our approach is to define the HILDA sample of 'lower' income *individual* renters more broadly than the conventional threshold of 40 per cent of household income. We divide renters into four groups including: social renters, private renters with income support, low-income private renters without income support, and moderate to high income private renters. Despite many social and private renters with income support falling above the 40 per cent threshold, their average income is approximately half (\$34 000–35 000) that of moderate to higher-income private renters (\$66 009).
- Social renters and private renters with income support share a similar age, marital status, gender and average income compared with the other two renter groups. Compared to moderate to higher income private renters, low-income private renters without income support are much younger and are predominately single. Moderate to

high-income private renters, on the other hand, are typically younger couples and/or families with young children.

- Individuals living in social rental are concentrated in the most disadvantaged and lowest status areas in terms of occupation and education, but are also found in mixed areas. Private renters with income support are mostly concentrated in less advantaged areas and their numbers reduce as the advantage of the area they live in increases.
- Census figures for 2011 indicate that the majority of public rental households fall within the lower income group definition, defined by a low income cut off band of (\$31 200–\$41 599). The highest numbers of social renter households are found in inner Melbourne, inner Sydney and North Adelaide. The largest numbers of lower-income private rental households are found in the Gold Coast, South East Melbourne, and Melbourne’s West. Social housing households are more concentrated into small spatial areas than lower-income private renters. Areas with the largest numbers of social rental households tend to differ from areas with high numbers of lower-income private rental households. The largest shares of both social renter households and lower-income private renters households live in suburbs with low-middle median rents and low-average incomes.
- Individuals in social rental are less likely to move, but when they do it is generally to a more advantaged area with a lower unemployment rate but which has higher rents. Private renters are most likely to move, with individuals receiving income support most likely to move to an area of lower rent. Despite their high mobility, many renters remain in similarly disadvantaged areas suggesting ongoing exposure to particular types of areas.
- While the wellbeing of moderate to higher-income renters steadily improves as the advantage of the area improves, this is not always the case for lower-income renters, particularly social renters. Subjective wellbeing, particularly in relation to satisfaction with financial situation, employment opportunities, with the home in which you live, community connection and feelings of safety for social renters is typically better in the lower to moderately advantaged areas compared with the more affluent and higher status areas. The domain of subjective wellbeing with the most area variation across renter groups is satisfaction with employment opportunities.

This preliminary descriptive analysis will be extended with the construction of our own spatial indicators of social mix, and through a multi-level statistical analysis of wellbeing outcomes that can further test the hypotheses outlined.

# 1 INTRODUCTION

The question of whether it is better to be 'poor' in a 'poor area' or one that is more socially diverse has generated considerable policy interest and debate over the past decade, yet continues to be an important issue requiring further research (Manley et al. 2011). There is growing consensus that place can make a difference to the social, emotional and economic wellbeing of households on many fronts and this has been a critical driver of policies directed towards improving the 'social mix' of communities. The policy goal of increasing the social mix is based on the premise that there will be reduced impacts on households from the negative consequences associated with concentrations of social disadvantage (Arthurson 2008).

Key among the assumptions of much area-based research is that the location in which you live can have an independent effect above and beyond the individual characteristics of those who live there. All else being equal, this 'area-based effect' assumes that individuals sharing a comparable social economic position will be worse off if the area in which they live is also disadvantaged (Ellen & Turner 1997). While we now have a much richer understanding of the potential causes underpinning area effects, there have been limited studies that provide widespread comparison across larger samples. In reviewing the international social mix literature Manley et al. (2011) conclude that a critical gap in the evidence base is the absence of longitudinal large scale survey research that can follow and statistically isolate area-based outcomes. Of particular relevance here is the virtual absence of Australian studies specifically examining the longitudinal interrelationship between area diversity, housing and wellbeing outcomes using robust statistical techniques. This project aims to address this existing gap in the literature by providing a longitudinal multi-level analysis that can isolate individual and household level effects from area level effects. It combines the construction of spatial measures indicative of social mix from the Australian Census of Population and Housing data, with individual panel data from the Household and Labour Dynamics in Australia (HILDA) survey.

While the bulk of international housing studies examining area effects focus on social renters, there is mounting concern about the impact that location may have for lower income private renters, yet their wellbeing outcomes remain largely under researched (Arthurson 2010, 2012; Hulse et al. 2012). In this research we compare the characteristics and place-based wellbeing outcomes of four key renter groups across areas indicative of high to low social mix. The groups include social renters, private renters with income support, low-income private renters without income support, and moderate to high-income private renters. Our definition of low-income renters therefore extends beyond an income threshold measure to examine both differences and similarities between groups to enable a comparison of the outcomes for those who are in receipt of housing and income assistance with those who are not.

The research is undertaken in three stages addressing the following research questions:

1. How do the demographic characteristics and housing costs of low-income renters living in areas of higher and lower advantage compare?
2. Is the social quality of life of lower income renters living in more advantaged areas better compared with those living in less advantaged locations?
3. Is there evidence of any area level effects on wellbeing outcomes once statistically controlling for individual household level characteristics?

This Positioning Paper documents the conceptual framework and preliminary descriptive findings from the first two stages to provide the background, rationale and broader theoretical assumptions of the research.

The first stage involves a synthesis of the current evidence base and challenges in isolating area-based effects within a policy framework aiming to facilitate greater area-based diversity in order to reduce the adverse consequences associated with spatial concentrations of disadvantage. We also draw on the breadth of wellbeing literature to provide a multi-level conceptual framework of place-based wellbeing that can help to guide and interpret the research. This specifically recognises the various conceptions of wellbeing stemming from the personal to the social through to ideas of place-based wellbeing, integrating both subjective and objective dimensions. In particular, we draw on the European framework of Social Quality, which conceptualises individual wellbeing as being shaped by broader social relations linked to four interrelated conditional factors of socio-economic security, social cohesion, social inclusion, and social empowerment (Beck et al. 2012).

The second stage of the research involves a detailed descriptive analysis of the characteristics and wellbeing outcomes of lower-income renters living in different areas. This stage also includes a review of ABS and other area-level indicators of social mix that can be merged with the HILDA data set.

In the final stage of the research, to be presented in a final report, we will undertake multi-level modeling of the relationship between housing tenure, area, and wellbeing outcomes. In this positioning we set out the statistical framework for undertaking a multi-level analysis of place-based wellbeing.

## **1.1 Outline of the report**

Following the introduction, Chapter 2 outlines the existing evidence base and challenges associated with identifying neighbourhood effects and more briefly the advantages and disadvantages of social mix policies that has cumulated over decades of research. It draws primarily on larger scale reviews, namely those undertaken by Galster 2012 for an international perspective and then reviews the Australian evidence of the relationship between area, housing and wellbeing outcomes. In Chapter 3, we present a review of the breadth of literature focusing on individual, social and place-based wellbeing to provide a multi-level conceptual framework that can complement a multi-level statistical analysis. Chapter 4 documents the proposed research approach to be extended in the next stage of the research. In this section we outline our data sources, how we construct our sample of renters and area-based measures as well as the method for undertaking descriptive and multi-level analysis. Chapter 5 presents a preliminary analysis of the characteristics of renters as well as an examination of area-based subjective wellbeing. We also draw on 2011 Census data to provide an initial spatial exploration of the location of social and private renters as well as their housing costs. The report concludes with some preliminary observations on the wellbeing of lower-income renters and outlines the directions for the next stage of the research.

## **2 EVIDENCE BASE FOR AREA EFFECTS AND POLICIES OF SOCIAL MIX**

There is now considerable evidence spanning a multi-disciplinary base of literature that where you live matters for your physical, emotional, social and economic wellbeing. Following Wilson's (1987) ethnographic study of the 'truly disadvantaged', much of the literature has focused on how neighbourhoods or 'locations of concentrated disadvantage' impact upon an individual's life chances above and beyond the characteristics of those who occupy an area, otherwise referred to as an 'area effect'. Extensive research over the years has established and theorised the many mechanisms or causal pathways linking neighbourhoods and locations to cumulative social disadvantage and how this may impact on all facets of wellbeing. Several recent reviews and edited collections have outlined the key research challenges that remain and the emerging evidence base for area effects research to date (Arthurson 2002; Atkinson 2008; Atkinson & Kintrea 2000; Galster 2012; Musterd et al. 2003; van Ham et al. 2012). This chapter reviews the current challenges in isolating area effects and presents a synthesis of the international and Australian evidence to date.

### **2.1 Challenges in isolating area effects**

The field of area-based research has been plagued with difficulties in establishing how the direct causes of the neighbourhoods can be isolated from the characteristics of individuals who live there (Diez-Roux 2001; Duncan & Raudenbush 1999; van Ham et al. 2012; Macintyre et al. 2002; Sampson & Raudenbush 2002). Neighbourhoods are a composite of a myriad of characteristics that are often highly correlated with each other, and therefore difficult to isolate (Diez-Roux 2001). Failure to distinguish between correlated effects and neighbourhood (or contextual) effects has led many researchers to the erroneous conclusion that area effects are important when in fact all that has really been captured are correlations between individual outcomes and neighbourhood characteristics (van Ham et al. 2012). Critical in the isolation of area effects is defining what neighbourhoods might mean and how large the boundaries should be, to what extent 'buffer' effects around particular areas exist and to what extent do individuals and households interact outside these boundaries as well as the time, frequency and overall exposure that individuals and households may have to the potentially harmful sources within neighbourhood boundaries. Advances in both ethnographic and statistical methods as well as their combined use together is considered critical in progressing our understanding of the particular mechanisms shaping area effects and being able to isolate these effects in a more generalisable way.

The complexity of a neighbourhood raises important statistical challenges which, though surmountable, are often overlooked in existing studies on neighbourhood effects (Durlauf 2004; van Ham et al. 2012). There are three main issues identified in the neighbourhood effects literature: they are omitted variable bias, the endogenous membership problem and the simultaneity problem (Durlauf 2004; Moffitt 1998). Omitted variable bias occurs when important individual or household-level variables are excluded from the model and their effects captured by other variables whose effects are over or under-estimated as a result. To make causal inferences it is therefore imperative that the model controls for all explanatory variables that may be correlated with the outcome in question. Failure to do so could potentially lead to problems of 'selection bias' which arises when individuals sharing similar characteristics self-select into particular neighbourhoods for reasons that are unmeasurable by the dataset (Duncan et al. 1997). Selection bias can ultimately lead to the 'endogenous membership problem' when the unobserved individual or household-level characteristics that influence neighbourhood choice are also correlated with the outcome of

interest, thus either overstating or understating the neighbourhood effect (Duncan & Raudenbush 1999).

For instance, unemployed individuals may be more drawn to disadvantaged neighbourhoods than employed individuals. According to Oakes (2004), the self-selection of individuals into particular neighbourhoods, along with other factors such as interaction and common exposures, may result in 'clustering' which occurs when people within the same neighbourhood are more alike than people between neighbourhoods. The consequence of this is that any two individuals within the same neighbourhood will yield characteristics that are not entirely independent of each other (Oakes 2004, p.1933). Such a situation will invariably lead to biased estimates by confounding neighbourhood effects with simple correlated effects. In the event that neighbourhood composition is simultaneously the cause and product of the individuals residing within it, we encounter a simultaneity problem. Also referred to as the reflection problem (Manski 1993), such a situation arises when measures of neighbourhood characteristics are not independent from the individuals residing within it but are determined by it. It is based on the premise that people influence their neighbourhoods via exogenous and endogenous social interactions and are simultaneously influenced by it. The main challenge for the researcher is to isolate these transactional relationships so as to arrive at an accurate estimate.

The challenges listed above only capture some of the issues confounding neighbourhood effects studies. Galster (2008, p.3) identifies a total of six issues, which he classifies as 'paramount challenges'. In addition to the issues listed above, Galster (2008) recognises an additional three concerns that should be addressed when attempting to determine neighbourhood effects. The first of these raises the question of which geographic scale of a neighbourhood to use. This issue was first recognised by Suttles (1972) who confirmed the multiple geographic scales of neighbourhood. Defining a neighbourhood is highly relevant to a study on neighbourhood effects because the use of the 'wrong scale' may lead to inaccurate conclusions on neighbourhood effects. Earlier neighbourhood effects studies examining multiple geographical scales of neighbourhoods found that the use of smaller geographical scales better represented a neighbourhood (Buck 2001; Bolster et al. 2007; Graham et al. 2009). These studies also show evidence that neighbourhood effects are more pronounced when a lower geographical scale is used (van Ham & Manley 2009). Galster (2008) suggests conducting parallel analyses of a particular outcome where the neighbourhood is measured at different neighbourhood scales. This will enable the researcher to delineate which spatial scale produces the greatest neighbourhood effect.

Another challenge that is highlighted by Galster (2008, p.9) is the importance of identifying the degree to which individuals are 'exposed to the processes thought to convey neighbourhood effects, whether these processes work instantaneously to generate outcomes for individuals or with substantial lag or cumulative impact'. Galster (2008) uses a pharmacological metaphor of dosage-response to help ascertain what dose of neighbourhood might be causing the individual outcomes or individual response. He formulates a series of questions relating to composition (e.g. what are the ingredients that constitutes dosage?), administration (e.g. how frequently is the individual receiving the dosage?) and response to the neighbourhood dosage (e.g. are the effects of dosage immediate or lagged?) which are designed to assist the researcher in gaining a greater understanding of how neighbourhood characteristics can impact on residents (see Galster 2012).

The third challenge is that of identifying the mechanisms of neighbourhood effects. Galster (2008) builds on Manski's (1993) three hypotheses for why the behaviours of individuals that belong to the same group are not independent from each other. These hypotheses fall into three broad categories—endogenous neighbourhood effects, correlated neighbourhood effects and exogenous neighbourhood effects. Galster (2008) expands on these hypotheses

by putting forward various versions of each of these neighbourhood effects. He goes on to argue that consideration of these mechanisms is imperative for precise specification of neighbourhood variables and the appropriate geographical scale.

## **2.2 Emerging evidence base**

Synthesising decades of research evidence, predominately from the US and Western European countries, Galster (2012, pp.23–45) classifies the main casual mechanisms underlying neighbourhood effects into four broad themes of social-interactive, environmental, geographical, and institutional mechanisms. He then analyses the existing research to either support or refute each of the proposed transmission routes by which neighbourhoods might cause adverse or beneficial consequences for individuals. The evidence as to whether each mechanism has been found to impact individual wellbeing is shown in Table 1 below.

In sum, Galster (2012) concludes that there is strong support for neighbourhood effects linked to mechanisms of social contagion and collective socialisation impacting upon delinquency, crime and poorer mental health outcomes. Parental involvement in mediating exposure to neighbourhoods is influential in protecting children from the potentially harmful effects of areas. There is strong evidence in support of environmental mechanisms including exposure to violence and toxic pollutants and adverse physical and mental health outcomes. However, there is weaker if little support for institutional mechanisms of stigma, local institutional resources and local market actors. Geographical mechanisms of spatial mismatch are most evident in the US but not in Western European countries. There is limited support to show that social networking among lower and higher-income groups occurs, with emerging evidence that mixing groups may actually cause harm through conflict, isolation, and competition for resources.



**Table 1: Summary of the mechanisms and effects of neighbourhoods**

<b>Causal mechanisms</b>	<b>Evidence of effects</b>
<b>Social-interactive mechanisms</b>	
Social contagion Collective socialisation	Social contagion (peers) and/or the collective socialisation (role models, norms) appears in US poverty related outcomes. Weaker cohesion and structures of informal social controls in neighbourhoods found to contribute to youth delinquency, criminality and mental distress, but not linked to labour market performance in both US and European context.
Social networks	Little evidence of social networking between lower-income and higher-income households or children in the same neighbourhood.
Competition Relative deprivation	Little evidence that the competition or relative deprivation mechanism is at work in the US. The evidence from European studies suggests that the mixing of higher and lower-income groups can actually cause harm potentially through mechanisms of social conflict and envy or 'jealously effects'.
Parental mediation	Substantial indirect effects on children and young people via parental mediation.
<b>Environmental mechanisms</b>	
Exposure to violence Physical surroundings Toxic exposure	Environmental differences appear substantial and likely to produce important differentials in physical and mental health—large differences in exposure to violence that produce psychological consequences for children and adults. Exposure to environmental pollutants is harmful.
<b>Geographical mechanisms</b>	
Spatial mismatch Public services	Geographical mechanisms of access to employment opportunities and public services more evident in the US than in Europe.
<b>Institutional mechanisms</b>	
Stigmatisation Local institutional resources Local market actors	While institutional mechanisms are likely to be causing harm it is difficult to quantify the impact.

Source: From Galster 2012, pp.23–45, summarising the US and European evidence

Area effects can be exacerbated through the presence of threshold effects or tipping points where a particular mechanism or interaction of several mechanisms take effect at a set level of concentration of disadvantage, such as the rate of unemployment in an area. However, the evidence for such threshold effects is often mixed and inconclusive and there are significant challenges in their measurement. The evidence where threshold effects are most noted is in relation to the quality of schooling experience and educational outcomes for children and participation in employment in areas where there are excessive levels of unemployment and significant barriers to accessing jobs through the effects of 'spatial mismatch' (Atkinson 2008; Galster 2007, 2012).

### *2.2.1 The international debate about policies of social mix*

The cumulating evidence that areas of concentrated disadvantage underlie an array of social ills has been a central driver of policies aiming to 'balance the social mix' or 'tenure mix' of communities (Arthurson 2010). Policies seeking to increase diversity along the lines of household types, income, tenure, age, education and ethnicity have been implemented through numerous initiatives, including tenant right-to-buy schemes, mixed income and tenure building development; the destruction and renewal of existing housing estates in deprived areas, and the spot purchasing of social housing properties in neighbourhoods

with owners and other rental housing (Arthurson 2008, 2010; Atkinson 2008). While approaches differ across countries, the overall aim of social mix policies is to create more mobilised, cohesive and stable communities with increased opportunities for work and positive social engagement in the collective spaces within formally disadvantaged areas or to create opportunities to move beyond deprived neighbourhood boundaries (Arthurson 2008, 2010; Chaskin & Joseph 2010).

From the perspective of 'building communities', the expected routes by which social mix policies derive their benefits, Chaskin and Joseph (2010, pp.303–4) argue can be summarised into four broad themes linked to social capital, social control, social norms and expectations, and political and market influence. Essentially, social mixing is thought to ameliorate problems of social contagion stemming from cumulative forms of 'bad social capital' or networks. Problems are ameliorated by enhancing the presence of 'good social capital' from those with higher incomes who provide a form of positive role modeling while their greater expectations for law and order increase social control and their more mobilised political and market influence result in better quality services and overall living environment (Chaskin & Joseph 2010). The ideas behind mixed communities has led to large experimental and quasi-experimental studies trialing different policy interventions, typically directed at those living in public housing estates with the most noteworthy examples being the US moving to opportunity experiment (Clark 2008) and *Hope VI*, a US-based neighbourhood renewal initiative in which thousands of old and dilapidated public housing stock was demolished and replaced with mixed income accommodation (Popkin et al. 2009). There is also a growing evidence base from more in-depth ethnographic and case study research examining outcomes for smaller scale social mix initiatives (Arthurson 2012; Small & Feldman 2012).

A synthesis of the research and policy activity documented in special journal editions, international reviews and more recently canvassed at the 2011 European Network of Housing Researchers (ENHR) conference dedicated to the issue of social mix has helped identify where current knowledge gaps are emerging (Cheshire 2012; Manley et al. 2011). The growing body of international research, practice and policy commentary on the issue of social mix remains vibrant but contested with an underdeveloped and inconclusive evidence base on many aspects of the broader social and housing policy consequences for different groups of households as well as the set of assumptions informing the policies.

### *2.2.2 Evidence and gaps in Australian research*

In all, what remains to be answered for both research and policy, especially in the Australian context, is whether 'it is better to be poor in a poor area or one that is socially diverse' (Atkinson 2008, p.iv). While the problem of area effects is of international concern, the causes and consequences make generalisations from the broader international literature somewhat problematic. A critical difference that has not been adequately researched is the diversity of tenure mixes, geographies of concentrations of disadvantage, and social conditions that make up the Australian experience of area effects. The specific conditions linked to differences in locational choice, accessibility, and the capacity for ongoing tenure among social and private renters could result in varying degrees of exposure or neighbourhood 'dose' that could provide both adverse and beneficial outcomes depending on which aspect of wellbeing is being measured. Conversely, there may be little differences in wellbeing between tenures once taking into account overall exposure to particular areas.

Most of the Australian studies, particularly those focusing on quantifying area effects through more advanced multi-level statistical methods, have their origins in the social epidemiology of health inequalities and find strong and convincing adverse health consequences for low-income households living in more deprived areas compared to those living in more advantaged ones (Kavanagh et al. 2005;Turrell et al. 2007). There is also a body of literature showing more superior educational outcomes for those living in better off

neighbourhoods once controlling for the clustering within areas (Hemphill et al. 2010). There is some research evidence to suggest that neighbourhood effects are influential in the take up of jobs among young people (Andrews et al. 2002) and there is also a more robust evidence base on the adverse impact of neighbourhoods on the life chances of children (Edwards 2005) and strong evidence on crime and feelings of safety (Allard et al. 2012).

The evidence in other areas, as well as the potential causal pathways, has been more difficult to substantiate on a larger scale and drawing on longitudinal research. There is some support for the role of the social-interactive mechanisms (Jensen & Seltzer 2000; Ruming et al. 2004) in shaping individuals' socio-economic outcomes. Jensen and Seltzer (2000) analyse the role that family, friends and neighbourhoods play in influencing educational progress towards post-secondary education using survey data. The authors identify peer interaction as a statistically significant driver of educational outcomes for young people in Melbourne.

Evidence of the role of geographic mechanisms and limited accessibility to labour market resources in shaping low-income residents' outcomes is highlighted in a study by Heath (1999) who examines the factors affecting the behavioural patterns of unemployed teenagers in search of work. Heath's findings reveal that the local environment, particularly the local labour market and job information networks, are important indicators of job-search method choice. The evidence on spatial mismatch of job opportunities to affordable housing locations in Australian metropolitan cities remains contradictory (Berry 2006). Although, it is likely that a spatial mismatch is evident within outer metropolitan areas as well as regional and rural areas where many younger people in particular are required to relocate to seek work (Baum et al. 2008; Wheller 2011).

While it is critical to understand the various underlying mechanisms that may be shaping differences in outcomes, we still have an inadequate comparative evidence base of how the wellbeing outcomes of similar socio-economic groups compare when they live in better off neighbourhoods. Specifically, there has been limited Australian research that examines the interrelationship between income, tenure type, area, and wellbeing using longitudinal and multi-level research methods. In filling this gap, our primary focus in this research is to compare the area-based wellbeing of four broad groups of renters including social renters, private renters with income support, low-income private renters without income support, and moderate to high-income private renters. Our overall approach conceptualises wellbeing within a multi-level framework; this allows for the simultaneous connections to be made between individual characteristics and the social context in which they live. Next, we review the Australian housing literature to examine how the wellbeing of renters differs according to their housing tenure and location. While the bulk of the international evidence specifically examining neighbourhood effects and social mix policies stem from studies on public or social housing residents, there is some emerging research showing that the area-based wellbeing outcomes of Australian private renters is also of concern and that tenure is a critical mediating variable in the relationship between area and wellbeing.

The existing Australian housing research suggests that the impact of lower-income renters in better off versus more concentrated areas of disadvantage is likely to have both negative and positive impacts on resident wellbeing, depending on which causal mechanisms and outcomes are the focus of research. Moreover, while most international research has been directed at the problem of public housing, there is a general consensus among Australian housing researchers that the place-based wellbeing of lower-income private renters is of increasing concern, yet remains a largely neglected area of policy attention and intervention (Arthurson 2012; Hulse & Burke 2002; Hulse et al. 2012; Randolph & Holloway 2005, 2007; Stone & Hulse 2007; Randolph et al. 2010). Constraints on access to social housing, combined with increasing barriers to entering home ownership, have confined growing numbers of low-income households to the private rental system where they increasingly

compete with higher-income tenants for their housing. Private renters make up nearly a quarter of all households compared with 5 per cent of social renters. The proportion of low-income private renters in the bottom quintile now doubles those in social housing (Hulse et al. 2012, p.28).

There has been much research documenting the implications of the changing geography of private renting among low-income households, particularly in terms of declining affordability and issues of dislocation from inner-metropolitan gentrified areas to areas of higher concentrations of disadvantage (Atkinson et al. 2011; Hulse et al. 2012; Pawson et al. 2012; Randolph & Holloway 2005, 2007; Yates & Milligan 2007). Reviewing changes in the spatial distribution of private renting over the past two decades, Pawson et al. (2012, p.11) conclude that while many areas of concentrated disadvantage have high proportions of public renters, 'the most extensive areas of disadvantage now contain little public housing'. The high numbers of low-income households in private rental, relative to public renters, combined with affordability and sorting pressures directing them to most disadvantaged areas, suggests that exposure to area effects associated with concentrations of disadvantage will not be isolated to those living in public housing. Despite increasing concentrations of renters in poor areas, there remain pockets where lower to moderate-income residents have remained in higher income areas. Significant proportions of public housing stock remain in the more gentrified and increasingly affluent inner city areas where there may be greater scope for social mix in schools and other public settings as well as greater access to employment opportunities and vital services. At the same time, increased targeting of high needs residents, particularly among those living in the public high rise estates, provide a micro neighbourhood of concentrated disadvantage. Similarly, shared housing arrangements among lower-income households, particularly younger households, has also enabled many to rent in areas they normally could not afford. However, there is limited large scale comparative research on whether this makes a difference in wellbeing for lower-income renters living in these more affluent areas.

Disentangling the relationship between individual characteristics, tenure, area and wellbeing outcomes, is fraught with challenges and contradictions. Research on non-shelter outcomes undertaken by Phibbs and Young (2005) found that the quality of life for many public housing tenants improves significantly compared to the instability and disruptions faced, particularly by children, in the more insecure private rental sector. However, while outcomes in some aspects of life and functioning improve among those living in public housing, residents still encounter the highest rates of social exclusion in many other life domains including employment, suggesting that while wellbeing in some areas may be stabilised, other threats to wellbeing and quality of life remain (Randolph et al. 2010; Scuttella et al. 2009). Those moving into social housing from long-term homelessness still face significant difficulties adjusting to housing and establishing a sense of home and connectedness to their new environments, often feeling dislocated and isolated from existing social networks of support (Johnson et al. 2011; Parkinson 2012).

Despite the high prevalence of low-income households living in private rental, there have been limited comparative assessments of different forms of housing assistance on wellbeing outcomes (Hulse et al. 2012, p.28). There is growing evidence that when compared to social renters, low-income private renters face considerable threats to their overall socio-economic security, resulting from higher concentrations of unemployment, underemployment and precarious employment combined with higher rental payments (Randolph et al. 2007; Parkinson 2010; Parkinson et al. 2012). Although, there still remain gaps as to how these dynamics are played out spatially, Randolph and Holloway's (2002) anatomy of housing stress of the 'working poor' and low-income households in Sydney suggests that affordability problems are most noted in the inner, middle and western Sydney suburbs, many of which are areas of concentrated disadvantage. Moreover, rent assistance provided little relief to the affordability problems of these households.

In their survey of (N=1688) lone parent renters in receipt of private rent assistance and public renters across different states and geographical areas, Burke and Hulse (2002, pp.vi–viii) found distinct differences in the non-shelter and shelter wellbeing outcomes between the two groups of renters. Specifically, compared to those in public rental, private renters in receipt of rent assistance were younger, more educated, more likely to speak English as their first language, and had a limited history of public housing use in the past. Moreover, parents in private rental generally had access to greater resources including work and child support payments with fewer children to support compared with their public rental counterparts. However, parents in private rental were less stable in their housing with limited social ties and community involvement in the areas they were living in, especially among those within the inner areas and with more detached housing. In contrast, parents in public housing were more likely to have lived in and had significant ties to family and friends and positive associations with the tenure in the past. There was a strong preference among this group to continue to live in public housing, particularly in terms of the affordability and ongoing security it was able to provide. Despite mostly positive associations, many public housing parents were more likely to express concerns about personal safety than those in private rental.

The greater stability of parents in public rental compared with those in private rental suggests that they could, over time, be more exposed to the adverse consequences of concentrations of disadvantage. In undertaking a multivariate factor analysis, Burke and Hulse (2002, p.17) also found that labour market participation between the two groups of renters could be attributed to differences in their overall socio-economic profile. Longer exposure to disadvantage could be associated with lower overall labour market participation through an area effect via mechanisms of social contagion (Galster 2012) and 'housing related poverty traps' (Hulse & Randolph 2005; Feeny et al. 2012) that create significant barriers to gaining work above and beyond individual attributes. At the same time lower-income private renters may have more scope to move, but they may not necessarily move to areas of fewer disadvantages, and the impact on employment outcomes could be dependent on how long they remain dependent on income support and remain in the rental sector. Comparative exposure to potentially adverse areas may then yield similar outcomes for private renters.

Subsequent exploratory research undertaken by Stone and Hulse (2007) examined the statistical relationship between housing assistance, attributes of housing, and place with dimensions of social cohesion using four secondary data sets. Their analysis built on an extensive review of the theoretical literature outlined earlier in Hulse and Stone (2006). This literature conceptualised social cohesion as the composite of dimensions of social connectedness linked to social capital, and inequalities linked to social exclusion that are situated within the broader cultural context influenced by social norms and behaviours. Through their exploratory analysis, Stone and Hulse (2007, pp.viii–x) found that various attributes of housing and characteristics of place have a direct relationship with measures of social connectedness 'over and above the effect of individual inequalities'. Specifically, compared with home ownership, private renting in particular was found to be negatively associated with most of the variables, indicating social connectedness at a neighbourhood level including: attachment to area, neighbourhood trust and cooperation, shared neighbourhood, and identification with the local area. They also found that public renters were significantly less likely to feel safe in their local area compared to private renters. Social connectedness was typically found to be higher in rural and regional areas compared with metropolitan areas. Measures of social connectedness among those in more deprived areas produced mixed findings. On the one hand, deprived areas were positively associated with high social networks of support, but on the other hand, these areas were negatively associated with other dimensions related to the poor quality of the neighbourhood.

Burke and Hulse's (2002) and Stone and Hulse's (2007) research provide important foundational comparisons of the wellbeing outcomes among public and private renters. However, there is a need to identify differences in wellbeing outcomes among a larger cohort of both rental groups that can be followed over time and which adequately controls for area effects. Although there may be some important differences influencing the outcomes of low-income social and private renters, both groups are likely to face considerable constraints in moving to areas that provide better opportunities. The findings from Burke and Hulse's (2002) and Stone and Hulse's (2007) studies are important because they begin to highlight the place-based differences across rental groups. Their findings suggest that tenure policies seeking to address wellbeing in one life domain may have adverse consequences in other areas of life that serves to undermine a sense of both personal and collective wellbeing.

The emergence of potentially conflicting or contradictory wellbeing outcomes linked to mechanisms of relative deprivation, competition and associated jealousy or envy effects is reinforced in both Australian (Arthurson 2010, 2012) and international (Atkinson & Kintrea 2000; Galster 2007; Chaskin & Joseph 2010) intensive case studies of areas where initiatives to increase social diversity of residents have been implemented. While some benefits have been found from increasing the social diversity of an area, mixed groups generally do not 'mix' in a meaningfully necessary way that can shape anticipated positive role modeling outcomes. In terms of tenure mix, areas with high concentrations of owner occupiers are most resistant to ideas of social mix, which has been found to undermine attempts to foster social integration and harmony among residents. Similar adverse wellbeing outcomes have been found in mixing private and social renters. Ruming et al. (2004) conducted a case study of private and public tenants in Belmont, New South Wales, and found that public tenants located in mixed-tenure neighbourhoods dominated by private tenants did not feel readily accepted into communities. They found that limited interaction between public and private housing tenants, with the latter group experiencing 'forces of oppression, stigmatisation and exclusion' (p.25).

Drawing on three local case studies, Arthurson (2010) found issues of resentment, conflict, social distancing and stigmatisation among higher and lower-income residents that were generally precipitated by differences in values between groups living in close proximity. Opportunities for social connection were found to become even more remote as differences in income and socio-economic position increase. Moreover, lower-income groups living in more middle class areas can become isolated from much needed social interaction and support, particularly in areas with high ownership where social networks and busy lives draw many to interact outside their immediate neighbourhood. Tensions may also emerge among 'older' and 'newer' high needs residents within the same tenure groups. Nonetheless, there were also benefits in these mixed communities in terms of reported feelings of increased safety as well as increased opportunities for interaction around shared activities, such as attending schools, which can potentially enhance outcomes for children. Based on a consideration of the difficulties and potential benefits, Arthurson (2010) concluded that social mix at the broader neighbourhood level may be a more important policy goal than attempting to create socially heterogeneous building complexes.

In sum, areas of more concentrated disadvantage do not necessarily generate universally 'bad' outcomes for residents' wellbeing. Likewise, lower-income households living in more advantaged areas also experience mixed benefits in terms of wellbeing, particularly important in relation to social ties, social support and feelings of belonging to a particular area and cultural group. These findings, along with other similar studies focusing on the policies of social mix, beg the question, as posed by Chaskin and Joseph (2010, p.300) of what can be realistically expected in terms of building community. As argued by Atkinson (2008, p.5):

... residents of all neighbourhoods should be able to claim a standard of living, regardless of whether such additional compound effects can be demonstrated. The research evidence shows that certain social (low income) and tenurial (public renting, because of its close link with low income) combinations and concentrations also present challenges and increased public costs. This suggests that keeping an eye on particular aspects of social balance, community harmony and inclusion and the need to promote opportunities for residents should be a guiding commitment to public housing, regeneration activities and planning bodies.

What are the most important outcomes and does the attainment of wellbeing in one area at the expense of others outweigh any potential harm? This problem links to the general 'paradox' encountered in wellbeing research across the disciplines that has led to the recognition that wellbeing and overall life satisfaction needs to be conceptualised and measured within an integrated framework that incorporates the situational context as well as subjective and objective measures of quality of life. This notion of 'standard of living' fits within a broader quality of life framework that posits the need to identify subjective and objective elements of wellbeing that enhance not only the individual's quality of life, but a collective 'social quality' of life among all who reside in any location. In the next section we present a multi-level conceptual framework for examining the place-based wellbeing of renters.

### 3 TOWARDS A MULTI-LEVEL FRAMEWORK OF PLACED-BASED SOCIAL WELLBEING

Wellbeing as a concept encompasses ideas of personal flourishing influenced by positive psychology through to the search for new indicators of national prosperity that can meaningfully reflect the quality of life and standards of living of a country (Haworth & Hart 2012). It has become a nebulous term subject to extensive theorisation and measurement across disciplinary boundaries. However, as Gasper (2010, p.187) argues, wellbeing in its broadest conception can be viewed as:

... an evaluation of a person's situation, or more fittingly, an evaluation which is focused on the quality of the person's being. Well-being is thus a vague concept that can span various aspects of life and is subject to normative debate, rather than a sharply and consensually defined single thing. Possibly 'well-living' and 'life going well' would be better labels—more active and indicating that there are diverse relevant aspects so that the label is an umbrella for a variety of matters.

While viewing wellbeing as an umbrella term has certain appeal any matter of 'things' can be grouped under its prongs, thus running the risk of losing clarity of definition and focus. The vagueness of the term is further complicated by the growing recognition of the need for a more holistic understanding of human functioning that seeks to better integrate the contexts in which people live. This multi-level understanding of wellbeing is well articulated by Prilleltensky and Prilleltensky's (2012, pp.63–68) conception of *webs of wellbeing*, in which wellbeing is derived from the interdependence of *personal, relational, organisational and communal wellbeing*. Understanding the elements of being or the preconditions that make individuals, communities, and nations function well creates a frame of reference for comparison and has underpinned the long-term obsession across disciplines from psychology, economics and health to sociology with measuring the 'good life' or the 'good society'. Wellbeing, when viewed as an integrated 'paradigm', has as its central contribution in academic, policy, and practice settings a focus on the positive attributes of being and what might be needed to attain this (Haworth & Hart 2012).

Despite widespread variation in its conception and measurement, practitioners and scholars identify some unifying commonalities that distinguish a focus on 'wellbeing' from other areas of inquiry (Atkinson et al. 2012, p.4). The common starting point for understanding wellbeing across fields of inquiry is what Atkinson et al. (2012, pp.4–5) refers to as a 'components approach' in which abstract concepts of wellbeing in different domains and levels of relations are broken down into its constituent parts 'but that the central concept of wellbeing is itself individual in scale'. The significant challenge within a components approach lies in distinguishing the components that constitute an overall measurement of wellbeing from those that shape wellbeing. Within this approach, the conceptualisation and measurement is further distinguished between subjective and objective dimensions of wellbeing, and between 'hedonic' and 'eudaimonic' perspectives.

Subjective wellbeing is most commonly associated with the pursuit of measuring and understanding the correlates of self-assessed 'evaluations' of emotional, mental and physical functioning, quality of life, satisfaction with life, and personal happiness (Phillips 2006). An individual's assessment of their subjective wellbeing is thought to have both an *affective component* that links into how one feels about their situation and a *cognitive component* in which individual experience is evaluated within their own context shaped by personal history and cultural norms (Conradson 2012, p.17). Subjective assessments typically rely on a series of component-related questions which vary on an ordinal continuum or likert scale from high to low, 'strongly agree' to 'disagree' and so forth. On the other hand, measures of objective wellbeing typically take the form of standardised



measures or 'indicators' that can be applied across or used to classify populations into particular groupings or assign some continuous numeric value to. Objective wellbeing ranges from assessments of individual physiology through to the productivity of national and international economies. Obvious examples include Body Mass Index (BMI), mortality rates, unemployment, household income and wealth, gross domestic product (GDP) and so on.

Theories and measurement of wellbeing are further distinguished between hedonic and eudaimonic perspectives, both of which have their origins in divergent Greek philosophical underpinnings of how to attain the 'good life' (Ryan & Deci 2001). The hedonic conception comes from the utilitarian writings of Aristippus, which essentially views that wellbeing is attained through the maximisation of happiness and pleasure and the avoidance of pain. To this end, subjective wellbeing represents 'the totality of one's hedonic moments' and is made up of life satisfaction, positive mood, and the absence of negative mood (Ryan & Deci 2001, pp.143–4). However, the eudaimonic conception, with its origins in Aristotelian philosophy, rejects the notion that hedonic happiness principally defines wellbeing, rather that happiness comes from doing what is virtuous or meaningful to one's life (Ryan & Deci 2001, p.145). Eudaimonic conceptions, most notably those linked to the emerging field of positive psychology, distinguish between psychological wellbeing and subjective wellbeing, with the former focusing on functionality and needs attainment that are required to facilitate human flourishing. Achieving eudaimonic wellbeing involves three interrelated goals of attaining a sense of *autonomy*, *competence* and *relatedness* to others. There are divergent views as to whether these three factors 'define' wellbeing or 'foster' wellbeing, with Ryan and Deci (2001, p.147) arguing the latter.

One enduring problem within wellbeing research, particularly those focusing on *hedonic* assumptions of happiness, is that individuals living in harsh material conditions or who endure excessive levels of stress can report high levels of subjective wellbeing despite the existence of low 'objective' wellbeing. Within an eudaimonic approach such outcomes are not necessarily incongruent because individuals can view their situation within 'a wider framework or interpretative horizon' and the focus of research is to understand how individuals and communities may flourish despite the existence of adverse life events or situations, extending to the notion of 'the thriving individual' and 'the thriving community' (Haworth & Hart 2012, p.16). In taking a more holistic approach, Ryan and Deci (2001, p.148) argue that wellbeing is multidimensional and that for most individuals is likely to comprise both happiness and meaning or hedonic and eudaimonic conceptions.

On the other hand, relying on single objective measures also has its limitations. There are often blurry distinctions between what is 'objective' and not, given that most measures have at some point been based on someone else's 'evaluation' (Gasper 2005). The drive to measure wellbeing more comprehensively beyond single objective measures such as GDP, where it is increasingly recognised that rising growth and income levels do not equate with growing life satisfaction, have led governments and international welfare agencies to examine more deeply the components that make up quality of life (Gasper 2005; Phillips 2006). Assessments of national economic wellbeing building on ideas on Sen's (1985) and Nussbaum and Sen's (1993) capabilities framework, have sought to integrate subjective measures of individual and community flourishing with the more traditional objective measure of Gross Domestic Product (Haworth & Hart 2012; Phillips 2006). The Australian Treasury, for example, now has a much broader framework of national wellbeing that incorporates: '*The distribution of opportunities across the Australian people; the sustainability of opportunities available over time; the overall level and allocation of risk borne by individuals and, in aggregate, the community; and the complexity of the choices facing people and the community*' (Gorecki et al. 2011, pp.4–5).

Overcoming the incongruence of personal assessments of wellbeing with the attainment of basic needs rely on a composite of both subjective and objective measures that cut across

particular life domains in an attempt to reflect the multi-layered assessments, including influences on the surrounding environment and location in which people live (Phillips 2006). The early focus of a components approach to subjective wellbeing has expanded to a broader conception of social wellbeing informed by the sociological concepts of Marx's historical materialism, class consciousness and alienation and the functional sociology of Durkheim through concepts of social solidarity and anomie. An emergent field of social wellbeing research draws on more recently popularised concepts of social capital, social cohesion, collective efficacy and social exclusion in an attempt to understand how processes of social engagement and unequal power relations shaped by social norms and cultural assumptions could be conceived as wellbeing outcomes in and of themselves as well as influential mediators of wellbeing in other 'life domain' areas (Keyes 1998; Phillips 2006; Sampson 2012).

There has been a significant overlap in the use of the concepts of social capital, social cohesion and social exclusion. Despite the inherent difficulties in operationalising these concepts, they remain fundamentally important to understanding the 'social quality of life' that underpins the impetus for social policies (Phillips 2006). While whole books and fields of study have been devoted to each of the above concepts in isolation, that discussion does not do justice here—suffice to say they remain widely used as 'mechanisms' to explain neighbourhood effects as well as informing the assumptions on the strengths and limits of policies of social mix. (For a more detailed discussion, see Phillips 2006, and for an Australian discussion with a specific housing focus, see Hulse & Stone 2006).

Several frameworks have incorporated broader conceptions of wellbeing to an understanding of people's assessment of their opportunities, social relations and the impact of place. Keyes's (1998, p.122) framework links social processes to a components wellbeing approach by developing empirically measurable components of five social concepts that include:

- *Social integration*—sense of belongingness, closeness, comfort from a community.
- *Social contribution*—view people as kind, trustworthy, and honest'.
- *Social acceptance*—have valuable resources to contribute to the world.
- *Social actualisation*—believe society is making progress and values social institutions.
- *Social coherence*—having predictability and control over life.

Together these components, Keyes (1998) argues, contribute to social wellness, which in turn is linked to greater sources of personal wellbeing.

Geographical approaches, similar to those emerging in psychology, are informed by both subjective and objective measures of social wellbeing in place. Ideas of place-based wellbeing drawing on the work of human geographers have been influential in shaping the broader neighbourhood effects paradigm. The importance of the locational context and, in particular, ideas surrounding spatial inequalities, social segregation, place-based attachment and displacement, have been influential in shaping a broader understanding of the uneven development of social wellbeing that is 'essentially and necessarily emergent in place' (Atkinson et al. 2012, p.3). Similarly, ecological approaches associated with Bronfenbrenner (1995) in which wellbeing is conceived as being produced across different places of relations including schools and communities has been a highly influential framework for understanding wellbeing in its social and environmental context.

Ground breaking social indicators research undertaken by Smith (1973) across different US cities, conceived wellbeing in terms of the composite of outcomes in key life domains that incorporate economic dimensions of income, wealth and employment, physical and emotional health, social dimensions of education, social order, social belonging, recreation

and leisure, as well the individual's overall living environment. Smith's early approach to analysing wellbeing across place recognised the need to statistically address area-based clustering before multi-level statistical approaches were fully advanced (Conradson 2012). The broad life domain approach adopted by Smith (1973) is now evident in subjective accounts of life satisfaction common to the development of national indexes such as the Australian Unity Wellbeing Index (Cummins et al. 2003) as well as those that mix both subjective and objective measures of social exclusion (Scuttella et al. 2009).

Subjective accounts of wellbeing and place have focused on the central importance of a *sense of place* defined both in terms of the physical and relational belonging to a particular locality that has important meaning for the development and continuity of personal identity. Place-based attachment 'characterises the long-term affective bonds between individuals and significant places in their lives' that occurs over a period of time and that is built up from the cumulative day-to-day activities as well as important life events (Tuan 1977; Rowles 1983, p.90). Ideas of place-based attachment have informed assessments of whether policies to artificially create communities can be potentially harmful to wellbeing and in fact be undermined by the strong drive that people have to create a sense of belonging not only to the geographical spaces they live in but to the familiar relations attached to a place.

### **3.1 Social quality as an integrated framework of wellbeing**

The review of the literature has thus far emphasised the various conceptions of wellbeing stemming from the personal to the social through to ideas of place-based wellbeing, arguing for the importance of both subjective and objective accounts and for broader conceptions recognising the multi-level nature of wellbeing. There have been many frameworks that have sought to integrate wellbeing and quality of life within a holistic approach and Phillips (2006) provides an excellent overview of these approaches. One particular framework, *Social Quality*, has been the subject of extensive theorisation, review and refinement since it was first conceived in 1997 by the European Foundation on Social Quality in an attempt to enhance social cohesion and combat social exclusion (Phillips 2006, Van der Maeson & Walker 2012). Most recently social quality has been defined in the following way: '*Social quality is the extent to which people are able to participate in social relationships under conditions which enhance their wellbeing, capacities and potential*' (Beck et al. 2012, p.68).

The Social Quality approach is both a theoretical and empirical model founded on the principle idea that individuals are fundamentally 'social beings' with collective identities that are historically transformed through social relations over time. The theoretical exercise has involved retracing the philosophical or ontological nature of individuals in society to arrive at a conception of the duality of agency and structure informed by critical realist assumptions. The formation of collective identities from the individual occurs through the 'interplay between two basic tensions' of firstly biographical development with societal development and secondly between existing systems, institutions, organisations and the 'lifeworld of communities, families, networks, groups' (Beck et al. 2012, p.50). It is thus a transformative model that seeks to outline the constitutional and conditional factors that are necessary for individuals to form collective identities and thus become 'competent social actors' who can flourish in their own personal lives. It engages with the normative and ethical ideals underpinning 'healthy' societies and the social policies that should be pursued in order to secure a minimum or basic standard of social quality for all citizens that can increase their overall life chances.

Within this framework, the constitutional conditions for social quality include personal (human) security—the existence of rights and acceptable rules; social recognition—the experience of respect by others; social responsiveness—the openness of groups, communities and systems; and personal(human) capacity—the possibility to relate to other people (Beck et al. 2012, p.56). These constitutional conditions are further operationalised

through four interrelated conditional factors including: socio-economic security, social cohesion, social inclusion and social empowerment. In much of the theoretical and empirical literature each of these terms have been conflated and used interchangeably. Thus, the final definition of each of these conditional factors has involved considerable reconceptualisation with clear rationales outlining their distinction and use within a social quality framework. The proposed definitions of each of the conditional factors are shown in Table 2.

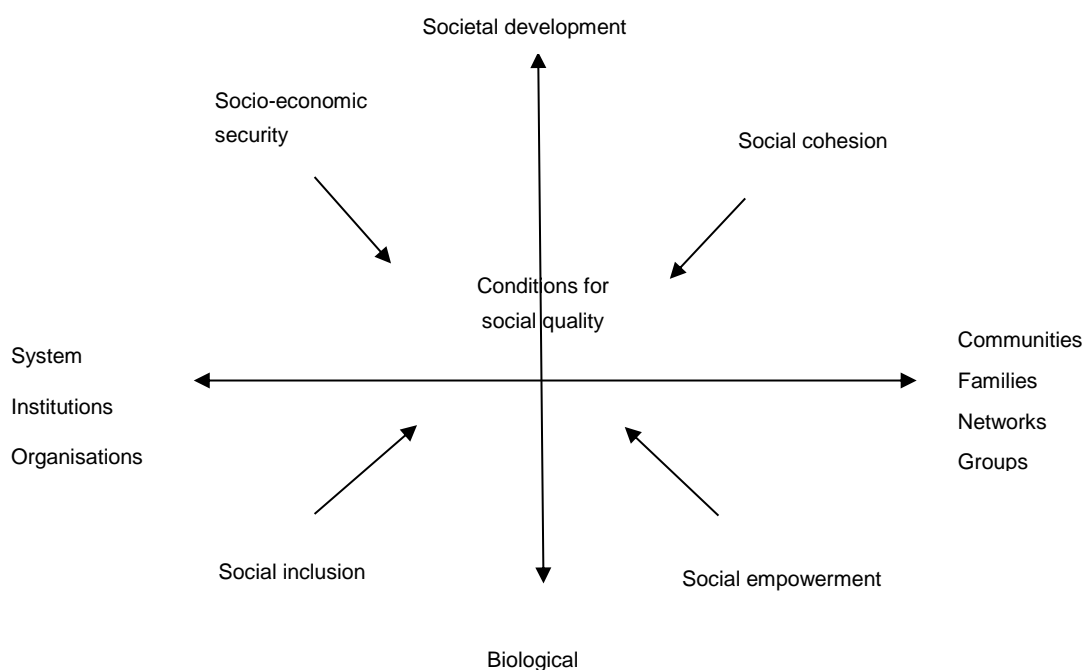
**Table 2: Definitions of conditional factors of social quality**

Conditional factors of social quality	Cited definition
Socio-economic security	... is the extent to which individuals have resources over time.
Social cohesion	... is the extent to which social relations, based on identities, values and norms, are shared.
Social inclusion	... is the extent to which people have access to and are integrated into the different institutions and social relations that constitute everyday life.
Social empowerment	... is the extent to which the personal capabilities of individual people and their ability to act are enhanced by social relations.

Source: Taken from W Beck, LJG van der Maesen and A Walker (2012), 'Theoretical foundations', in Ed LJG van der Maesen & A Walker (eds), *A social quality: From theory to indicators*, pp.61–62

While there is no necessary direct causal connection between each of the conditional factors, that is, social inclusion does not necessarily always result in socio-economic security, together they are necessary in contributing to an overall quality of social life. The mutual dependence of the conditional factors along with the sets of tensions between biographical and social development and systems and communities is represented as a quadrangle as shown in Figure 1.

**Figure 1: The quadrangle of the conditional factors of social quality**



Source: W Beck, LJG van der Maesen and A Walker 2012, 'Theoretical foundations', in LJG van der Maesen & A Walker (eds), *A social quality: From theory to indicators*, p.61

Finally, the quality of society can be assessed over time through the establishment, collection and refinement of social indicators that allow comparisons to be made across countries and within different social groups. While social quality as such cannot be fully measured, 'indicators' based on strong theoretical grounding can establish the extent to which a society is meeting conditional requirements based on a theoretical and ethical assessment of social quality. Several social quality indicators have been developed for each of the conditional indicators that combine both subjective and objective assessments. The indicators are developed through a 'domain' based approach that specifies or seeks to operationalise the exact meaning of each factor and therefore which type of indicator falls within each conditional factor and not the other. Each of the conditional factors are 'specified' as follows:

- *Socio-economic security* is having resources to cope with aspects of daily life (including risks).
- *Social cohesion* is human engagement as the primary source of developing inter-human conditions, connections and relations.
- *Social inclusion* is having access to and participation in institutions, organisations, systems and social relations.
- *Social empowerment* is enabling people to function as creative actors in determining their daily life.

(Beck et al. 2012, p.103)

The final domains for the four conditional factors are shown in Table 3 below. Each domain has a series of potential indicators many of which are measured at the broader area level, however they can also be collected and related to micro or individual measures, particularly those relating to socio-economic security and social inclusion. The social quality approach provides a sophisticated framework that is theoretically robust and can be operationalised within empirical research. Clearly, no single project on wellbeing can adequately engage with all conditional factors. However, the overall benefit provided by the social quality framework for this particular research is that it provides a coherent framework for the types of variables at individual and collective level that are likely to be important for wellbeing as well as a broader set of theoretical ideas to assist in the interpretation of wellbeing outcomes.

**Table 3: The domains of the conditional factors of social quality**

Socio-economic security	Social cohesion
Financial resources	Trust
Housing	Other integrative norms and values
Environment	Social networks
Health and Care	Identity
Work	
Education	
Social inclusion	Social empowerment
Citizenship rights	Knowledge base
Labour market	Labour market
Services (public and private)	Supportiveness of institutions
Social networks	Public space
	Personal relations

Source: W Beck, LJG van der Maesen and A Walker 2012, 'Theoretical foundations', in LJG van der Maesen & A Walker, A social quality: From theory to indicators, p.103

### 3.2 Multi-level modeling of place-based wellbeing

The ideas of the distinct but interrelated contribution of subjective and objective as well as hedonistic and eudaimonic conceptions highlight that wellbeing, while measured at the individual level, is shaped by the broader context of the social relations and places in which people live. The increasing recognition of the interrelatedness of wellbeing at different sites coupled with advances in statistical methodologies has enabled researchers to examine these interdependencies within the one study, and is becoming increasingly applied within studies focusing on neighbourhood effects and place-based wellbeing. The challenge for researchers in undertaking wellbeing research is to seek to develop methodologies that can account for both the simultaneous and multi-level nature of wellbeing outcomes. Several methodological approaches have been proposed to cope with this issue of endogeneity. Among these are quasi-experimental methods, Geographic Information Systems (GIS) and multi-level modeling.

In recent years, multi-level modeling techniques have become more widely used by researchers, particularly by those wishing to measure the extent and nature of spatial variations in individual outcomes. An alternative way of conceptualising multi-level data structure is to think of them as different levels of a hierarchy. Area-based data form a hierarchical structure whereby individuals  $i$  (level 1) are 'nested' in particular areas,  $n$  (level 2). Moreover, when we have repeated observations from the same individuals we have an additional level with observations nested within individuals. This hierarchical structure of neighbourhoods is a key rationale for the use of multi-level analysis, which allows one to concurrently examine the neighbourhood-level and individual-level effects on individual outcomes (Diez-Roux 2000).

In standard regression models, such as ordinary least squares, the hierarchical nature of the data is ignored. One of the key issues with using individual-level data in neighbourhood effects studies is that it does not take into account the likelihood that the wellbeing outcomes of individuals residing within the same neighbourhood may be more alike than those residing in different neighbourhoods (Oakes 2004; Ballas & Tramner 2011). This is to say that individuals residing in a neighbourhood where average life satisfaction is relatively high may generate more positive subjective wellbeing outcomes than those belonging to a different neighbourhood which reports lower average life satisfaction outcomes. Thus, there is a group clustering effect that is not often captured by individual-level data (Ballas & Tramner 2011). This violates the assumption of independence in standard ordinary least squares (OLS) regression, which presupposes that all individuals are extracted from a random sample so that the mean of the error term, which captures all unmeasured causes of the dependent variable,  $y$ , is independent of the values of the explanatory variables (Allison 1998). Thus, employing OLS regression methods to discern neighbourhood effects would invariably result in the acute issue of omitted variable bias. To avoid the pitfalls that would arise with using OLS in the context of this study, we exploit multi-level modeling techniques which provide a neat way to isolate and model area effects from the individual characteristics of individuals in a particular area.

Multi-level models provide an extension of the standard regression model by allowing the different hierarchies to be isolated and analysed concurrently in the one regression. So, in the case of examining individuals within clusters of a neighbourhood, a multi-level model provides both the average and the variation around the average at both the individual and the neighbourhood level. Following the notation of Dujardin, Peeters and Thomas (2009), multi-level models can be explained mathematically using the following equation:

$$y_i = \alpha_n(i) + \beta_n(i) X_i + \varepsilon_i \quad \text{where;} \quad (1)$$

$$\alpha_n(i) = \alpha + v_n(i) \quad \text{and;} \quad (2)$$

$$\beta_{n(i)} = \beta + \mu_{n(i)} \quad (3)$$

Where  $y_i$  denotes the dependent variable for individual  $i$ , and  $\alpha_{n(i)}$  and  $\beta_{n(i)}$  denotes a random intercept and slope, respectively with means  $\alpha$  and  $\beta$ . On face value, equation (1) resembles the traditional OLS regression model; its distinctive feature, however, is that it allows neighbourhoods to deviate from their mean values, as represented by equations 2 and 3. Thus, it factors in the possibility that the outcomes of individuals from the same neighbourhood may vary systematically.

In recognition of the usefulness of multi-level analysis in quantifying neighbourhood effects, a number of notable international and national studies have emerged in the literature that allow for joint effects of individual and neighbourhood characteristics. Among these are studies by Bailey et al. (2012), Ballas and Tranmer (2011), Baum et al. (2009); and Propper et al. (2005). In a study on mental health in the UK, Propper et al. (2005) used the British Household Panel Survey to investigate the association between neighbourhood and mental health. The authors found that individual and household-level characteristics played a more significant role in predicting mental health disorders, with neighbourhood effects explaining only around 1 per cent of the total variance in mental health. Using the same data source, Ballas and Tranmer (2011) reported a similar result in their analysis on the relative importance of the area, household and individual characteristics on happiness outcomes. They found that, having controlled for individual, household and area characteristics, the variation in happiness and wellbeing is not found to be statistically significant between neighbourhoods. Bailey et al. 2012, on the other hand, found statistically significant area effects in their examination of place attachment in deprived neighbourhoods. The authors concluded that place attachment declined as neighbourhood deprivation increased. An Australian study by Baum et al. (2009) found that socio-economic mix characteristics of the neighbourhood are important in understanding neighbourhood satisfaction. All in all, findings reported from the above studies suggest that neighbourhoods generate different outcomes for different wellbeing indicators.

In carrying out multi-level models techniques, there are a number of methodological questions that must be considered by the researcher. The first of these relates to defining the spatial scale of a neighbourhood (Galster 2008). A common problem identified in neighbourhood studies has been the use of large geographical areas to define a neighbourhood (Ellen et al. 2001). The problem with this is that associations between the neighbourhood and wellbeing outcomes may become difficult, if not impossible, to detect. In dealing with this problem, a number of studies have used multiple spatial scales to define the neighbourhood (Buck 2001; Bolster et al. 2004; Propper et al. 2005). Propper et al. 2005, for instance, use a considerably smaller spatial scale than that used in most US and UK studies (Propper et al. 2005). They design what the authors term 'bespoke' neighbourhoods for each person at each point in time. In creating these bespoke neighbourhoods, the authors begin by matching individuals by their postcode to the corresponding enumeration district. They then identify adjacent districts based on the distance between each individual's centroids, and aggregate the enumeration districts of the nearest 500 people to each respondent's home address. They also expand the bespoke neighbourhood to include the nearest 2000 people, but find no significant differences in results. Shields et al. (2009), on the other hand, defines the neighbourhood in terms of collection district (CD) which contains around 250 households on average. Overall, neighbourhood studies that explore multiple spatial scales find stronger links between neighbourhoods and wellbeing outcomes when smaller geographical scales are used (Galster 2008)..

A second important methodological challenge that should be addressed when quantifying neighbourhood effects relates to measuring exposure to a particular neighbourhood. Galster (2008) argues that neighbourhood effects may vary depending on the degree to which an

individual is exposed to a neighbourhood, that is, the wellbeing outcomes of an individual who has lived in a deprived neighbourhood for 20 years may be more adversely affected than an individual who has lived in the same neighbourhood for five years. To ascertain timing and duration effects on individuals' wellbeing outcomes, Galster (2008) suggests drawing on a panel dataset of a subset of individuals who are exposed to a particular neighbourhood for an extended period of time and running a series of models. In each model, he suggests varying the period over which neighbourhood exposure is measured. For instance, in model 1, neighbourhood exposure may be measured for  $t$  years; in model 2, neighbourhood may be measured for  $t-1$  years etc.

A third challenge in multi-level modeling/neighbourhood effects analysis concerns the construction of a measure of neighbourhood characteristics. A large majority of neighbourhood studies have used composite indices to measure neighbourhood characteristics, given the strong degree of correlation between different measures of socio-economic status (Pickett & Pearl 2001). Typically, studies use administrative neighbourhood characteristics data such as those obtained from census data, and construct a composite index of area characteristics using Principle Components Analysis (PCA) (Bailey et al. 2012; Baum et al. 2009; Evans & Kelley 2002; Propper et al. 2005; Shields et al. 2009). Alternatively, researchers can use existing composite area-based measures to measure socio-economic advantage/disadvantage. In the Australian context, the Socio-economic Indexes for Areas (SEIFA) developed by the ABS using Census data fall into this category. SEIFA provide a readily accessible socio-economic index for regions that allows us to determine differences in social and economic wellbeing across different geographical areas. While administrative data sources capture vital demographic information, which are essentially derived by aggregating individual characteristics, they do not provide insight into the physical fabric of the neighbourhood, such as markings of gang graffiti, or the incidence of abandoned cars (Sampson & Raudenbush 2002, p.2). Such information can only be obtained through the adoption of what Sampson & Raudenbush 2002 refer to as 'ecometric' standards of gathering data, which involves scientifically measuring the ecological settings using such methods as neighbourhood case studies, and observational data on physical characteristics and social interactions occurring within neighbourhoods.

Complementing administrative data with ecological measures will arguably provide a more thorough analysis of the impact of neighbourhoods. The strength of this approach is illustrated in Sampson's (2012) recent book, in which he documents the cumulative findings from nearly two decades of research from the Project on Human Development in Chicago Neighbourhoods (PHDCN). However, such an approach to the collection and analysis of *ecometric* measures, while greatly extending the scope of neighbourhood research, is still in its infancy in Australia compared with the US (see Mazerolle et al. 2007 and the project website for the Australian Community Capacity Study (ACCS) currently being undertaken by the University of Queensland as an example of this approach).



## 4 OUTLINE OF RESEARCH METHOD

The emerging evidence base on neighbourhood effects as well as the benefits and limitations of area-based social diversity currently underpinning social mix policies has shown that outcomes can be both positive and negative and are mediated by place-based social relations. Examination of place-based wellbeing of low-income renters therefore requires a coherent framework that can help to make sense of differences in outcomes. The research questions and hypotheses are informed by the theoretical assumptions of the social quality framework outlined in Chapter 3 in which life satisfaction is conditional on four interrelated factors, including socio-economic security, social inclusion, social cohesion, and social empowerment. In this research, measures of life satisfaction are treated as the main outcome variable that is in turn mediated by intermediate subjective and objective outcomes related to dimensions of social quality. The following research questions guide the analysis:

- How do the demographic characteristics and housing costs of low-income renters living in areas of higher and lower advantage compare?
- Is the social quality of life of lower-income renters living in more advantaged areas better compared with those living in less advantaged locations?
- Is there evidence of any area level effects on wellbeing outcomes once statistically controlling for individual household level characteristics?

### 4.1 Research hypotheses

Our research hypotheses rest on two general assumptions that will be used to test whether it is 'better to be poor in a poor area or one that is more advantaged and socially diverse'. In supporting the notion that place matters for overall wellbeing, our first general assumption to test is that renters as a whole population group, including lower-income and higher-income renters, regardless of tenure, will have greater satisfaction across the broad personal satisfaction life domains living in areas that are characterised by greater area advantage, and/or by tenure and social mix. To establish this we test the following:

- Higher to moderate-income private renters living in better off areas will exhibit greater personal life satisfaction scores compared with higher-income private renters living in less advantaged areas.
- Social and lower-income private renters living in better off areas will exhibit greater personal life satisfaction scores compared with social and low-income private renters living in less advantaged areas.

By comparing the two groups of higher and lower-income renters, we can better determine the impact of area on wellbeing versus other characteristics. We assume that any variance in personal life satisfaction between the two higher and lower-income renter groups can be further explained by differences in social quality mediated by tenure. To contain the analysis, we focus specifically on the domains of socio-economic security and opportunities for social inclusion. In examining the interactions between tenure and conditional factors of social quality, we will test the following specific hypotheses:

- Social and lower-income private renters living in more advantaged areas will have limited social networks compared with those living in more disadvantaged areas. Life satisfaction and wellbeing will be lower for lower-income private and social renters with limited social networks.
- Social and lower-income private renters living in or moving to more advantaged areas will have increased participation in the labour market over time contributing to greater life satisfaction and wellbeing, particularly satisfaction with employment opportunities once controlling for labour market engagement.

- Social renters will exhibit higher housing related socio-economic security compared with lower-income private renters. The housing related socio-economic security of low-income private renters remaining in advantaged areas will decrease. Private renters living in more advantaged and socially diverse areas with low socio-economic security will have lower life satisfaction.
- Social renters are less likely to move out of areas of more concentrated disadvantage and social mix compared with low-income private renters. Higher social networks and housing related socio-economic security mediate life satisfaction and wellbeing of social renters who remain in disadvantaged areas.

## 4.2 Research design

The research combines a longitudinal and multi-level spatial analysis of wellbeing outcomes of an Australian wide representative sample of social and private renters. Drawing on a statistically representative sample enables a broad cross-section of different population groups to be included in the analysis. A summary overview of the research design is shown in Table 4 and is expanded upon in the section to follow.

**Table 4: Summary overview of research design**

<p><b>Data sources</b></p> <p>Census and other spatial data used to rank and then cluster area-based measures. The area data will be merged with the in-confidence HILDA dataset. Draws on a pooled dataset of 10 years of HILDA data.</p>
<p><b>Sample</b></p> <p>Comparison of characteristics and wellbeing outcomes of social renters, private renters with income support, low-income private renters without income support, and moderate to high-income private renters.</p>
<p><b>Analysis</b></p> <p>Descriptive analysis and preliminary bi-variate statistical tests between low-income renters including social renters (public and community), private renters receiving income support and higher-income renters. Descriptive analysis of wellbeing outcomes of different rental groups living in areas of higher and lower advantage. Multi-level modeling of wellbeing outcomes using various level 2 area-based measures as proxies for social mix combined with level 1 personal characteristics. Controls for dynamic changes in outcomes between consecutive years.</p>

### 4.2.1 Data sources

This research makes use of 10 years (2000–10) of the in-confidence (more spatially detailed) Household, Income and Labour Dynamics in Australia (HILDA) dataset to draw on a large sample of low-income renters living in higher and lower advantaged areas characterised by indicators of social and tenure mix. Our overall approach in testing the hypotheses and answering the research questions will be to provide a spatial analysis from 10 years of HILDA data focusing on the characteristics of low-income and other renters in receipt of housing assistance/income support living in different areas, dwelling types and statistically determining, using multi-level modeling techniques the impact of various area-based measures.

At the area base level, the in-confidence HILDA data set has data available at the postcode and small area (statistical local area) level, allowing researchers to merge Australia-wide spatial measures of social and tenure mix from sources such as the Census data. In addition, there are several area-based measures including SEIFA deciles<sup>1</sup> that can be

<sup>1</sup> SEIFAS include four different area-based indices reflecting different dimensions of socio-economic conditions of particular locations and provide an aggregate of the overall characteristics of an area.

readily identified in the existing HILDA data set to approximate indicators of area-based social mix. The analysis for this Positioning Paper makes use of the existing SEIFA deciles for advantage and disadvantage and occupation and education to initially explore whether the descriptive characteristics and preliminary indicators of wellbeing vary across areas indicative of social mix. While SEIFAs are useful in providing ready available measures of area-based variation of key demographic indicators, they do not adequately capture the housing dimensions of social mix. Moreover, the SEIFAs in HILDA are based on the 2001 Census for all ten years of data. In the next phase of the research, we will augment the existing SEIFA deciles by developing additional area-based measures from the Census and other relevant sources that will be used to rank and then cluster area-based measures from small area postcode data and merge with the HILDA in-confidence dataset containing postcode level variables. In line with Propper et al. (2005), two levels of spatial unit will be explored. Being able to isolate area effects through large statistically representative surveys such as HILDA matched with broader area level data will provide greater insight into the influence of different area-based social compositions on wellbeing outcomes.

At the individual level, HILDA contains many relevant measures of subjective wellbeing including the Short Form 36 (SF-36) physical, mental and emotional health measures and life satisfaction. The domains of life satisfaction include an individual's satisfaction with employment opportunities, financial situation, the home in which they live, with health, how safe they feel, feeling part of community, satisfaction with the neighbourhood in which they live, and the amount of free time they have. The domains will be examined separately by renter groups. For each domain of subjective wellbeing, HILDA contains several potential measures of objective wellbeing that can also be examined to determine the extent to which subjective and objective measures are aligned for each renter group, particularly those relating to socio-economic security and social inclusion. In addition, HILDA contains detailed data on tenure and dwelling type, including those living in high rise buildings through to caravans. Dwelling types and tenure can be interacted with area-based measures (which can then be matched to postcodes) to identify different types of public housing residents living in high and low density housing in different locations indicative of higher and lower social mix. Similar measures can be constructed for private renters including those in receipt of income support by way of comparison.

#### *4.2.2 Sample of lower-income renters*

The review of the literature emphasises the importance of analysing the outcomes of public and private renters separately, but the issue of establishing the threshold cut off point for who is defined as low-income is less straightforward. This has important implications for which households are retained in the final sample and whether this is the group of most policy interest. The typical approach to identifying low-income renters is to select those in the bottom 40 per cent of the income distribution based on equivalent disposable income. Within this approach it is common for some studies to exclude those in the bottom income decile because expenditure levels are found to be comparable with those in higher-income deciles, suggesting that they have access to other assets or financial resources (Gabriel et al. 2005, p.65). Others have simply excluded those with negative incomes, e.g., those on negative incomes were excluded from Wood and Ong's (2009) housing affordability study and Buddelmeyer and Verick's (2008) poverty dynamics study as both argued that negative incomes are typically due to tax minimisation strategies or temporary losses from self-employment that disguise one's true financial position.

Our initial approach to the construction of low-income renters in the HILDA data set is to start with the 40 per cent cut off point for different renters. We then cross-tabulate renter groups by household income to determine what proportion are above and below the 40 per cent threshold. The identification of low-income renting households falling at or below 40 per cent of the distribution firstly involves removing households with negative disposable

income. Next, disposable household income was equivalised for each remaining household using the OECD modified equivalence scale. The OECD modified equivalence scale assigns a weight of 1 to the first adult, 0.5 to each additional adult, and 0.3 to each child. Household disposable income is then divided by the total weight for each household. Disposable household income is equivalised to take into account overall economies of scale derived from the number of people living in the household who share an income. Household population weights within HILDA were then applied to determine the income threshold at each equivalised disposable income percentile generalisable to the Australian population. Using cross sectional weights enables robust estimates of the distribution of household income across the Australian population to be determined for each given year. Table 5 shows the amounts of household income at the 40 per cent income threshold for each year of observation.

**Table 5: Annual equivalised household income data from the general population, HILDA 2001–10**

	<b>40<sup>th</sup> income percentile threshold</b>	<b>Mean income in lowest 40% of the distribution</b>	<b>Mean income in top 60% of the distribution</b>	<b>Mean income across entire distribution</b>
2001	19,642.7	12,584.8	72,489.8	\$62,872.5
2002	20,395.7	13,461.9	74,741.9	\$65,051.4
2003	21,112.6	14,364.1	76,968.7	\$67,176.8
2004	22,140.0	14,939.7	81,318.8	\$71,051.6
2005	24,318.5	16,404.9	88,498.5	\$76,994.6
2006	26,019.3	17,593.8	95,499.0	\$83,770.4
2007	28,232.5	18,800.3	103,891.5	\$90,152.0
2008	30,868.3	19,833.3	108,917.1	\$94,397.2
2009	33,300.0	20,305.4	115,600.4	\$99,806.8
2010	33,123.1	21,746.6	117,738.4	\$102,309.5

Source: HILDA Release 10

The measure of household income is then merged with responding individuals living in particular households. This means that each member living in a particular household will have the same amount of income. Low-income renters in the initial sample frame are defined as adult responding individuals belonging to low-income households as defined above. While wellbeing is often shaped by the broader household in which people live, the unit of analysis is typically that of the individual and we therefore follow the outcomes of individuals living in particular types of household, or in other words their wellbeing outcomes are attributed to the household they live in.

In further distinguishing renters without the use of an income threshold, we divide the sample into four initial groups including: (1) those renting from a public housing authority and (2) those living in community housing; (3) private renters in receipt of income support payments (ISP) as potential CRA recipients; and (4) all other renters. The private renters in receipt of income support include those who are the direct beneficiaries of the payment. Eligibility for government pensions and allowances is based on the total income of an income unit that is considered to pool or share their income, for example, a couple and their dependent children. However, there can be others living in a household who are not assigned to the same income unit because there is no assumption of income sharing, for

example, a shared housing household with all unrelated people. Table 6 below shows the numbers and percentage of renters within each of the rental groups before income thresholds are applied. The proportion of social to private renters is consistent with the broader tenure distribution across the Australian population. There are very small numbers of those living in community housing and so in subsequent analysis of characteristics and wellbeing we collapse those renting in public and community housing into one group of 'social renters'.

**Table 6: Sample numbers of all renter groups before income threshold, HILDA 2001–10**

	Social renters				Private renters with income support	Other renters		Total		
	Public landlord		Community housing landlord			N	%	N	%	
	N	%	N	%	N	%	N	%	N	%
2001	552	16.2	20	0.6	928	27.2	1914	56.1	3414	100
2002	507	16.2	12	0.4	850	27.2	1758	56.2	3127	100
2003	463	14.9	5	0.2	830	26.7	1814	58.3	3112	100
2004	452	14.7	18	0.6	780	25.3	1829	59.4	3079	100
2005	441	13.5	26	0.8	826	25.3	1974	60.4	3267	100
2006	448	13.4	13	0.4	830	24.8	2054	61.4	3345	100
2007	441	13.3	19	0.6	802	24.1	2061	62.0	3323	100
2008	455	13.7	18	0.5	768	23.2	2073	62.6	3314	100
2009	524	14.7	18	0.5	865	24.3	2152	60.5	3559	100
2010	513	14.0	23	0.6	956	26.1	2170	59.3	3662	100

Source: HILDA Release 10

**Table 7: Sample numbers of renters with high and low income, HILDA 2001–10**

	<b>Renters with moderate to high income</b>	<b>Renters with low income</b>	<b>Total</b>	<b>Percentage of total renters with low income</b>
	<b>N</b>	<b>N</b>	<b>N</b>	<b>%</b>
2001	2715	699	3414	20.5
2002	2411	716	3127	22.9
2003	2397	715	3112	23.0
2004	2359	720	3079	23.4
2005	2495	772	3267	23.6
2006	2569	776	3345	23.2
2007	2510	813	3323	24.5
2008	2448	866	3314	26.1
2009	2684	875	3559	24.6
2010	2748	914	3662	25.0

Source: HILDA Release 10

Table 7 above shows the numbers and percentage within each rental group as a proportion of all renters who fall within the top 60 per cent (high) and bottom 40 per cent (low) of the income distribution according to the method of identifying low-income households outlined above. Between 2001 and 2010, low-income renters in the bottom 40 per cent represent 21 to 25 per cent of all renters. With the exception of 2008, Table 8 shows that there are higher proportions of private renters in receipt of income support who fall within the top 60 per cent of the income distribution than in the lowest 40 per cent. Similarly, more social renters fall above the 40 per cent income threshold than in the low-income group below. This indicates that there are large numbers of social renters and private renters in receipt of income support who would not be considered to be low-income renters based on a household cut off threshold measure of 40 per cent.

**Table 8: Percentage of renters with 'high to moderate' and 'low' incomes by rental groups, HILDA 2001–10**

<b>Renter groups</b>	<b>%</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Social renters	High	9.9	9.5	8.2	8.3	7.7	7.1	6.9	7.3	8.5	8.1
	Low	6.9	7.1	6.8	6.9	6.6	6.7	6.9	7.0	6.8	6.5
Private renters in receipt of ISP	High	18.0	16.8	16.3	14.7	14.3	14.0	12.8	11.1	12.9	13.9
	Low	9.2	10.4	10.3	10.7	10.9	10.8	11.3	12.1	11.4	12.2
Other private renters	High	51.5	50.8	52.5	53.6	54.4	55.7	55.8	55.5	54.0	53.0
	Low	4.5	5.4	5.9	5.8	6.1	5.7	6.3	7.0	6.4	6.3
Total renters	N	3414	3127	3112	3079	3267	3345	3323	3314	3559	3662
	%	100	100	100	100	100	100	100	100	100	100

Percentages from total distribution of household equivalised income of all renters.

Source: HILDA Release 10

In considering the potential implications of excluding significant numbers of social renters, our preference is to retain all renters who are in receipt of housing assistance/ income support irrespective of whether they fall above or below an income threshold. There is a further smaller group of private renters who are in the bottom 40 per cent who are not in receipt of income support. This low-income group of private renters is also retained for the purposes of the initial descriptive analysis presented in the Positioning Paper. The assumptions made in retaining all social renters and private renters in receipt of income support is that while some might not be considered to be living in a 'low-income' household, they remain of interest to policy-makers because they are most likely to be those targeted and affected by social mix and other non-housing-related policies. Our focus is therefore broader than the conventional definition 'low-income renters' to include those who are both low income and the beneficiaries of government subsidised housing related assistance. We refer to these groups as 'lower'-income renters.

Moreover, there is a need for a more fluid way of identifying individuals who are likely to be affected by low income overtime. There are various reasons why private renters in receipt of income support fall above a low income threshold, including the possibility that many might not be in receipt of income support for the whole year and while annual household income may have been higher at a previous point in the year their current financial situation may be significantly constrained. Private renters in receipt of income support will often resort to shared housing arrangements because of limited income and difficulties with affordability, and many individuals within these groups are likely to be omitted if the focus only concentrates on low household income. For most part, private renters in receipt of income support are unlikely to be among the highest income households and this is further confirmed in the descriptive analysis to follow in Section 5. The overall impact of low household income on wellbeing for different rental groups will be addressed through the use of controls in the multi-level modeling rather than at the point of sample selection. The final rental groups that we base our analysis on in the HILDA data are listed in Table 9 below and include social renters, private renters with income support (ISP), low-income private renters without income support (ISP), and moderate to high income private renters.

**Table 9: Classification of sample renter groups**

<b>Renter groups</b>	<b>Data definition</b>
Social renters	Includes those renting from a public or community landlord.
Private renters with ISP	Private renters who are the recipients of government income support including the age pension and family assistance.
Private renters with low income and no ISP	Low-income private renters who fall at or below the 40 per cent income threshold for each corresponding year between 2001 and 2010 who are not in receipt of government income support.
Moderate to high income private renters	Low-income private renters who fall above the 40 per cent income threshold for each corresponding year between 2001 and 2010 who are not in receipt of government income support.

### 4.2.3 Descriptive analysis

A descriptive analysis will be undertaken to determine whether there are any differences in individual characteristics and measures of subjective wellbeing according to area characteristics. The main descriptive research question that we begin to address in this paper is:

- How do the demographic characteristics and housing costs of low-income renters living in areas of higher and lower advantage compare?

This Positioning Paper focuses on preliminary findings from the descriptive analysis of our renter groups drawing on a pooled sample of 10 waves of HILDA data. A pooled sample means that we combine the observations for each year so that the analysis is based on observations or individual 'episodes' rather than individual cases. The descriptive analysis presented in this report focuses on an initial exploration of the existing area-based measures contained within HILDA, namely the SEIFA deciles of advantage and disadvantage and occupation and education. We also begin to compare the characteristics and outcomes among those who remain in particular areas between consecutive years of observations or who remain *in situ* versus those who move.

We present an initial analysis of the spatial distribution and concentration of renters, looking specifically at social renters and lower-income private renters, as at the most recent (2011) Census. It gives an initial profile of the extent to which different renter households are spatially concentrated into particular parts of Australia. These patterns suggest the extent to which there will be variations in the levels of social advantage or social mix of rental households. Differing patterns between public renters and low-income private renters are noted. The description is based on Table Builder 2011 custom tables. It is intended to provide a comparison to HILDA data on different renter groups presented in this Positioning Paper. Variables on income support are not available in the Census so a direct comparison of groups is not possible. The modeling stage of the project will combine the household detail of the survey with spatial detail.

The following specifications were used with the 2011 Census:

- Households
- In rental tenure
- Cross-tabulated by tenure and landlord type:
  - Public and community housing.
  - Private rental, including real estate agents and persons not in the same household.
  - Other and not stated landlord types.
- To highlight 'lower income private renters', households with equivalised household incomes (this is computed within the Census itself using the OECD modified scale) below a cut-off roughly similar to the \$33 123.1 cut-off in the 2010 HILDA calculations were identified. This is an approximation to match with HILDA definitions of the bottom 40 per cent of equivalised disposable income distribution. Negative and zero incomes have been excluded. Equivalised gross household incomes in the following bands were included, equating to an income cut-off of \$41 599 per year or less:
  - \$1–\$199 (\$1–\$10 399)
  - \$200–\$299 (\$10 400–\$15 599)
  - \$300–\$399 (\$15 600–\$20 799)
  - \$400–\$599 (\$20 800–\$31 199)
  - \$600–\$799 (\$31 200–\$41 599)
- The tabulations are based on place of enumeration and exclude those with no usual address.
- Four geographical units across Australia were considered with this initial data: Statistical Areas 4 (SA4), Statistical Areas 2 (SA2), Statistical Local Areas (SLAs), and Postal Areas. Selected data at the SA4 and SA2 levels are presented here. SA2 and SA4 regions are part of the new Australian Standard Geographical Structure (ASGS) main hierarchy. In urban areas, SA2s typically include gazetted whole suburbs and



combinations of whole suburbs. In rural areas they are typically defined by gazetted towns, city or the region they are associated with (ABS 2011, p.23). The SA4 regions reflect larger sub-state labour market boundaries and correspond with the collection of labour force data. They typically have large populations of 100 000 people or more. In rural areas they reflect an aggregation of smaller labour markets in the surrounding areas (ABS 2011, p.27).

#### *4.2.4 Construction of area-based measures*

The area-based (or 'level 2') measures are likely to have four distinct functions within the multi-level model. Table 10 below summarises the four potential functions of the spatial data in the methodology along with likely potential data sources and examples.

The first function of the spatial data is to provide aggregate measures of comparative levels of the social and economic advantage of spatial units. For this purpose, spatial units will be ranked from least advantaged to most advantaged, using either composite (e.g. SEIFA) and/or individual socio-economic measures (likely to comprise income, education, occupation, tenure and housing costs). As examples, spatial units could be ranked as having high advantage in terms of high average incomes; or high SEIFA educational and occupational advantage scores.

The second role of the spatial data is to provide measures of the comparative degree of social and economic mix of the spatial unit. It is important to consider spatial measures both of advantage and mix within the methodology. Although these concepts overlap, they encompass diverging research questions and assumptions (Galster 2007). For example, the study will test to what extent social renters are less likely than private renters to move out of areas of more concentrated disadvantage. To measure the degree of social mix, spatial units will be ranked by two opposing measures (advantage, disadvantage) and categorised on a scale from homogeneously disadvantaged, to comparatively mixed, to homogeneously advantaged. Spatial mix is likely to be measured in categorical form. To capture proxies for social mix there is also the potential to use spatial indexes of dissimilarity or segregation (Reardon & Firebaugh 2002; Baum et al. 2009).

The third function of the spatial data will be to provide aggregate measures of specific domains of conditional factors of social quality. Some of these will relate to equivalent level 1 indicators from the HILDA data. As an example, levels of social cohesion in the domain of 'volunteering' could be compared at both the individual and area levels to explore relationships between individual volunteering and overall levels of volunteering in a spatial area. The identified domains of social quality are socio-economic security; social cohesion; social inclusion; and social empowerment. In general, level 2 coverage of these domains is comparatively poor and only some spatial measures of this type will be able to be assembled. Finally, some spatial data may be used to provide additional geographical indicators not included in the micro data. These are likely to be objective aggregate measures of the proximity of spatial units to certain amenities (e.g. jobs, schools); or the level and quality of different services. The use of such data will be dependent on investigations into its potential availability, form, and complexity.

**Table 10: Functions of spatial data in the methodology**

Function of spatial data	Potential data sources	Comment / example
Social and economic advantage	SEIFA Census ATO Other, e.g. housing sales to be investigated	Do lower-income renters have better outcomes in higher income areas? (or other measures of advantage)
Social and economic mix	Census Other, e.g. housing sales to be investigated	Do lower-income renters have better outcomes in areas of concentrated low incomes; areas with a comparative 'mix' of incomes; or areas of concentrated high incomes? (or other measures of advantage)
Domains of conditional factors of quality (compare to level 1 measures)	Census Other, e.g. labour market, school, crime data to be investigated	Measures of socio-economic security; social cohesion; social inclusion; social empowerment where available. Are renters more likely to volunteer in areas with high rates of volunteering?
Other geographical variables	Census Other to be investigated	Additional geographical variables. Are renters less likely to be economically active in areas with low levels of job accessibility?

Table 11 below summarises the quality of available data at both the individual (level 1) and area (level 2), by type. This highlights that key functions of the spatial data in the model will be to measure social advantage and social mix. Of the domains of conditional factors of social quality, spatial data are likely to provide some aggregate measures of socio-economic security but to not have meaningful measures in other domains.

**Table 11: Summary of the quality of available data by level (individual /area), and type**

Measure	Level 1 indicators (HILDA)	Level 2 Area indicators (Census and Others)
Social advantage	Good	Good
Social mix	n/a	Good
<i>Domains of social quality</i>		
Socio-economic security	Good	Fair
Social cohesion	Fair	Poor
Social inclusion	Fair	Poor
Social empowerment	Fair	Poor
Other geographical variables, e.g. proximity	n/a	Fair

The focus of the spatial data will be on the Census of Population and Housing; and particularly Time Series Profile data covering 2001, 2006 and 2011. These roughly equate to the longitudinal coverage of the HILDA dataset and take into account changes in spatial boundaries over time. As well as identifying relevant Census variables, the suitability of small area labour market, income assistance, school, crime and other data will be investigated for the next stage of the project. The functionality of custom Table Builder tables from 2006 and 2011 Census years are also likely to be a focus in that they allow

custom Census data to be extracted for different renter groups (as later in this Positioning Paper).

There are several considerations in the choice of spatial unit. The first consideration is availability. Census data contains a range of spatial units within different hierarchies. These include postcode (postal area), statistical local areas (SLAs), and new Australian Standard Geographical Structure (ASGS) units such as Statistical Areas 2, 3 and 4.

Compared to the Census, other data sources are more restricted in the choice of spatial unit. Much administrative data is typically published at the postcode or Local Government Area (LGA) level. Spatial units of differing size and type can be matched (concorded) to other spatial units (e.g. overlapping postal areas with SLAs or SAs with postal areas) with varying degrees of accuracy and difficulty, often using published spatial concordance files. A key consideration is that spatial data ultimately needs to merge with the spatial identifiers in the in-confidence HILDA dataset. This in-confidence micro data includes spatial identifiers for SLA and postcode (postal area). The methodology is based on merging household data with spatial data, with the merge based on either or both of these two potential spatial variables. The new (2011) ASGS units as opposed to older ASGC hierarchies (including SLAs) will be investigated for use, following the ABS premise that 'the ASGS represents a more comprehensive, flexible and consistent way of defining Australia's statistical geography than the ASGC' (ABS 2011). The specifics of spatial units and merges will be explored and finalised in the next stage of the project.

On average, SLAs contain 3968 households in total, with an average of 532 lower-income rental households using the criteria described. There are 1377 populated SLAs in the 2011 Census. Postal Areas are smaller and contain on average 2207 households with 296 lower-income rental households. There are 2515 populated POAs in the 2011 Census. In the new geography, SA2s are between SLAs and POAs in size, with 2205 populated SA2s in Australia containing on average 2517 households. SA4s are much larger, with 97 populated SA4s across Australia containing on average 57 223 households.

One implication of needing to merge spatial with household data at the SLA or POA level is that data for larger spatial units—for example, LGAs—can easily be merged as these are aggregates of smaller units. The detail of more fine-grained spatial data, for example at the collection district, SA1 or mesh block level would, however, not be captured by the model. These finer grained patterns would need to be aggregated to the SLA or POA level before being merged. The main potential spatial units to be investigated for the methodology are POAs, SLAs, and new ASGS units such as SA2s which closely accord to suburbs or communities. The ABS describes SA2 as 'a general-purpose medium-sized area built from whole SA1s. Their aim is to represent a community that interacts together socially and economically', and note that 'the SA2 is the lowest level of the ASGS structure for which Estimated Resident Population (ERP), Health and Vitals and other non-Census ABS data are generally available'. SA4s are larger regions and would be used to cluster smaller spatial units to provide a second scale of spatial unit. They are described as being designed 'for the output of labour force data' and 'the best sub-state socio-economic breakdown in the ASGS' (ABS 2011).

Table 12 shows spatial data sources by their potential function, their spatial disaggregation, and their timing. The first row shows that, at the area base level, the in-confidence HILDA data set has identifiers available at the POA and SLA level allowing researchers to directly merge Australia wide spatial measures of social and tenure mix from sources such as the Census and Australian Tax Office (ATO) data. In addition there are several area-based measures including SEIFA deciles that can be readily identified in the existing HILDA data set to approximate indicators of area based social mix. The analysis for this Positioning Paper makes use of the existing SEIFA deciles for advantage and disadvantage and occupation and education. While SEIFAS are useful in providing ready available measures

of area based variation of key demographic indicators, they do not adequately capture housing dimensions of social mix, as discussed. Moreover, the SEIFAS in HILDA are based on the 2001 Census for all ten years of data and obscure trends in areas over time.

**Table 12: Potential spatial data sources by role, timing and spatial units**

Source	Potential function	Spatial units	Time coverage
SEIFA (HILDA unconfidentialised)	Social and economic advantage	Statistical Local Area (SLA) and Postcode (POA)	2001 only
SEIFA (original)	Social and economic advantage	Variety including POA, SLA, suburb, CCD Mainly old ASGS	2001 and 2006. 2013 to be released post-study
Census time series profiles	Social and economic advantage Social mix	Variety including new ASGS units (SA4, SA2, etc.) Also POA, SLA, suburb	2001, 2006, 2011
Census basic and expanded community profiles	Social and economic advantage Social mix Domains of conditional factors of social quality	Variety including new ASGS units (SA4, SA2, etc.) Also POA, SLA, suburb To use earlier years would require more difficult spatial concordances	2011 To use earlier years would require more difficult spatial concordances
ATO taxable income data	Social and economic advantage	Postcode	Financial years 2000–01 to 2009–10
Small area labour market, other DEEWR data	Social and economic advantage Domains of conditional factors of social quality	SLA, SA3, region	2010 and 2011
Other to be investigated e.g. housing, crime, services, government payments	Domains of conditional factors of social quality Other geographical variables	Administrative data is often at the LGA, SLA or POA level	Variable

#### 4.2.5 Dataset creation

In the next phase of the research we will augment the existing SEIFA deciles by developing additional area-based measures from the Census and other relevant sources that will be used to rank and then cluster area-based measures from small area data (SA2, LGA, POA or SLA) and merge with the HILDA in-confidence dataset containing spatial identifiers. Being able to isolate area effects through large statistically representative surveys such as HILDA matched with broader spatial data will provide greater insight into the influence of different area-based social compositions on wellbeing outcomes.

Relevant Census and other small area data will be ranked and used to derive variables that describe particular types of area in terms of their levels of social mix and advantage. These variables are likely to be in decile form. Spatial data will be merged with the in-confidence survey data using the spatial identifiers in HILDA, most likely those for SLA and POA. In some cases this match will be direct. In others, spatial data will first be concorded in order to align with spatial identifiers in the micro data. To account for changes over time and the

longitudinal nature of the model, spatial data will also have to be interpolated across different HILDA waves.

The first step is to compile available and relevant spatial data. Spatial data for small areas will then be ranked at different scales—across Australia, by state and territory, and potentially by city or region (SA4 or similar). This ranking will create custom variables. Our approach to defining areas is based on distinguishing similar types of areas. A common method of approaching this is to examine those who reside in the same decile of area (e.g. the top/bottom 10% for postcodes in that state or territory). While this method does lose the localised spatial analysis that can be undertaken for more in-depth case studies, more general inferences can be made as to whether there is any variance in wellbeing according to particular area types (advantage, mix). This analytical approach can help to detect the presence of an area effect while also being able to measure exposure over time across a large sample of the Australian population. It avoids small number problems, and also maintains the confidentiality of the HILDA dataset.

After ranking and computing custom variables describing area advantage, mix and characteristics, the spatial data will be merged with micro data using shared spatial identifiers. In some cases, this will be a direct merge based on shared SLA or POA identifiers. In other cases, spatial data will first need to be matched to a concordance file aligning different spatial units to SLA or POA level. Temporal interpolation will also be required to fit different years of data in with the HILDA waves (see Table 13).

**Table 13: Approach to temporal interpolation of different data sources**

HILDA Wave	Census year	Financial/ATO data year
1	2001—August, actual	2000–01 and 2001–02
2	2002—interpolated from 2001 to 2006	2001–02 and 2002–03
3	2003—interpolated from 2001 to 2006 trend	2002–03 and 2003–04
4	2004—interpolated from 2001 to 2006 trend	2003–04 and 2004–05
5	2005—interpolated from 2001 to 2006 trend	2004–05 and 2005–06
6	2006—August, actual	2005–06 and 2006–07
7	2007—interpolated from 2006 to 2011 trend	2006–07 and 2007–08
8	2008—interpolated from 2006 to 2011 trend	2007–08 and 2008–09
9	2009—interpolated from 2006 to 2011 trend	2008–09 and 2009–10
10	2010—interpolated from 2006 to 2011 trend	2009–10 and 2010–11 (when released)

#### 4.2.6 Proposed multi-level model approach

There are two main research questions that will be addressed in the final phase of the research. These are:

1. Is there evidence of any area-level effects on wellbeing outcomes once statistically controlling for individual household-level characteristics?
2. Is the social quality of life of low-income renters living in more advantaged areas better compared with those living in less advantaged locations?

To address the above research questions, we will apply a multi-level modeling approach. Following the steps proposed by Oakes (2004), in the first stage of the analysis we will attempt to verify whether there are any between-neighbourhood differences with respect to the outcome variable. In our study, this means determining whether individuals' quality of life

varies by individuals living in more advantaged geographical areas as compared to those living in relatively less advantaged regions. To do this, we will first fit a fully unconditional model, otherwise known as a one-way random-effects analysis of variance (Oakes 2004). This means that, at the individual level (herein referred to as level 1), a person's life satisfaction is equal to their neighbourhood's mean life satisfaction plus some residual error term. Using Oakes' notation, this can be summarised mathematically as follows:

$$y_{ig} = a_g + e_{ig} \quad (1)$$

where  $Y$  denotes individual  $i$ 's quality of life,  $g$  denotes the neighbourhood in which individual  $i$  resides,  $a_g$  denotes the neighbourhood's mean life satisfaction and  $e_{ig}$  represents the residual.

Next, we will specify an area-level model (herein referred to as a level 2 model) of the neighbourhood-specific intercept which is a function of the grand mean and a separate random error term for neighbourhood  $g$ ,

$$a_g = a^* + u_g, \quad (2)$$

where  $a^*$  represents the grand mean, and  $u_g$  is a random effect (i.e. error or deviate from  $a^*$ ) for each neighbourhood. By substituting the neighbourhood-specific intercept in equation (2) into equation (1), we get the following equation.

$$y_{ig} = a^* + u_g + e_{ig}, \quad (3)$$

which states that each person's quality of life,  $y_{ig}$ , is equal to a grand mean of all people's quality of life, denoted  $a^*$ , plus an effect,  $u_g$ , which is a neighbourhood level residual capturing random error at the neighbourhood level, and a random error term  $e_{ig}$ . By introducing separate intercepts for each neighbourhood, multi-level models deal with the issue of individuals clustering within the same neighbourhood (Oakes 2004). However, equation 3 does not deal with the selection bias issue which occurs when the background characteristics of individuals prompt persons to self-select into particular neighbourhoods. In dealing with the selection bias issue, Oakes (2004, p.1935) suggests a second step to 'free the estimates from "selection" confounding'.

In controlling for selection bias, the next step involves the inclusion of individual characteristics to equation 3. The main objective in this step is to identify a set of explanatory variables on individuals' background characteristics that may help to determine the factors influencing individuals to move to or reside in their neighbourhoods. These will include a set of individual and household characteristics that represent individual heterogeneity, such as individual and household characteristics, employment characteristics, household income and so on. For the moment, however, we will assume that, like Oakes (2004), only socio-economic status (SES) variables, age and sex are included in the multi-level model. Incorporating these into the level 1 model expressed in equation 3 and assuming, for the moment, that neighbourhood-level model in equation 2 is unchanged, we have the following level 1 equation:

$$y_{ig} = a^* + b_1SES_{ig} + b_2AGE_{ig} + b_3SEX_{ig} + u_g + e_{ig} \quad (4)$$

Equation 4 will enable us to determine whether there are any neighbourhood-level effects on wellbeing outcomes once statistically controlling for individual household-level characteristics, thereby answering the first research question. When expressed this way, it is evident from equation 4 that a multi-level model is essentially just a multiple regression model with the addition of an extra error term,  $u_g$  (Oakes 2004).

To address the second main research question, which asks whether the social quality of life of low-income renters residing in advantaged areas fare better than that of individuals living

in less advantaged locations, we will include a set of neighbourhood-level SES measures to equation 4. Such neighbourhood measures can be denoted in terms of composite score like a SEIFA index or some aggregate SES measure, like percentage of persons within neighbourhood  $g$  that are unemployed. These variables will capture differences in individual  $i$ 's quality of life between advantaged and disadvantaged neighbourhoods. Adhering to Oakes' (2004) notation, the inclusion of neighbourhood-level characteristics into the multi-level model will modify equation 4 to be expressed as follows:

$$y_{ig} = a^* + b_1SES_{ig} + b_2AGE_{ig} + b_3SEX_{ig} + NSES_g * DRenter_i + u_g + e_{ig} \quad (5)$$

where  $NSES$  denotes the neighbourhood-level SES measure for neighbourhood  $g$ , and  $DRenter$  are a series of indicator variables representing the different renter groups. The coefficient on the  $NSES_g * DRenter_i$  variable tells us the percentage difference in wellbeing outcomes for each renter group by neighbourhood SES compared to some predetermined omitted category.

In our initial exploratory analysis, we will make use of SEIFAs to control for area-based measures. However, in subsequent stages of the methodological approach, we will construct our own composite measures of social mix using neighbourhood characteristics data obtained from the Census.

## **5 CHARACTERISTICS OF RENTERS IN AREAS OF ADVANTAGE AND DISADVANTAGE**

The earlier review of the Australian evidence on the characteristics and wellbeing outcomes of renters highlighted many distinctions between those who rent socially and those who rent privately. This next section builds on the existing evidence base to provide a detailed profile of each of the four renter groups introduced in the previous section. Analysis of the four groups reveals important differences as well as similarities that are likely to be influential in shaping place-based wellbeing outcomes.

The purpose of the analysis presented here is to identify whether the four rental groups vary according to key demographic characteristics and, in particular, to establish whether there is any variance in the characteristics across areas at a descriptive level. Differences are likely to be important in understanding issues of exposure to particular areas, duration in particular states such as labour market position, and the capacity to relocate to a better off area to improve wellbeing outcomes over time. A preliminary analysis of domains of life satisfaction is also presented to establish the extent to which subjective wellbeing descriptively varies across areas of advantage and disadvantage. Specifically, we begin to answer the first two research questions:

1. How do the demographic characteristics and housing costs of low-income renters living in areas of higher and lower advantage compare?
2. Is the social quality of life of low-income renters living in more advantaged areas better compared with those living in less advantaged locations?

This preliminary analysis will be extended in the final report with the development of refined area measures. This stage of the research helps to identify potentially important relationships between tenure, area and wellbeing outcomes to be pursued in the modeling. In this analysis we draw on the existing HILDA spatial measures of the SEIFA deciles of advantage and disadvantage to identify patterns of variation across socio-economic areas.

### **5.1 Demographic profile of renter groups**

In this section we first examine how each group compares according to selected demographic characteristics of gender, age, marital status and number of children. In general, as shown in Table 14 below, social renters and private renters with income support share a similar profile with respect to their characteristics. Social renters and private renters with income support are of similar age and gender compared with the other two renter groups. Nearly two thirds of social renters (59%) and private renters with ISP (64%) are female. Social and private renters with ISP also share a similar marital profile with around a third who are legally married or in a de facto relationship and the remaining two-thirds who are single, separated, divorced and widowed. They are typically over 40 years of age, although social renters are slightly older on average (47 years) than private renters with income support (43 years). The profile of social renters reveals a high degree of equivalence among these groups on demographic characteristics, although social renters are slightly more likely to have more children. The comparable profiles of social and private renters with income support suggests that differences in placed-based wellbeing outcomes will be mediated by other factors linked to socio-economic security including housing and opportunities for social inclusion.

In contrast, low-income private renters without income support and moderate to higher-income private renters are quite distinct groups. Low-income private renters without income support are much younger with a mean age of 30 years and are predominately single (64%). They are roughly split between males (51%) and females (49%). Most (88%) do not have any resident children. Opportunities for mobility and participation in employment are likely to be much greater for this group although they are likely to have low socio-economic



security. Moderate to higher income private renters differ again. They are slightly more likely to be male (54%) compared with other renter groups and have an average age of 33 years with the majority (61%) aged less than 35 years. They have the highest proportion who are married (31%) or living in a de facto relationship (30%) suggesting that the majority would have access to other resources within their household. However, they do have comparable proportions of children to that of social and private renters with income support. The overall profile of these renters is that of the younger couple and/or families with young children. The presence of a partner for most would increase their overall socio-economic security compared with the other renter groups.

**Table 14: Socio-demographic characteristics of renters, HILDA 2001–10<sup>a</sup>, column %**

		<b>Social renters</b>	<b>Private renters with ISP</b>	<b>Low-income private renters with no ISP</b>	<b>Moderate to high-income private renters</b>	<b>All renters</b>
Gender	Male	40.9	36.1	51.2	53.9	47.3
	Female	59.1	63.9	48.8	46.1	52.7
		100	100	100	100	100
Age groups	Under 35	30.0	43.5	72.1	60.9	52.5
	35–54 yrs	35.3	27.8	22.5	34.2	32.0
	55+ yrs	34.7	28.7	5.5	4.9	15.5
		100	100	100	100	100
Marital status	Legally married	24.8	21.5	9.5	30.3	26.0
	De facto	14.3	14.9	11.6	29.9	22.7
	Separated	5.7	7.8	4.9	3.9	5.2
	Divorced	15.1	13.0	9.0	6.4	9.6
	Widowed	9.2	8.6	0.9	0.2	3.7
	Single never married	30.8	34.2	64.2	29.2	32.8
		100	100	100	100	100
Number of resident children	Zero	63.4	60.4	88.4	67.4	66.3
	One	14.4	19.0	6.5	14.6	15.2
	Two	13.0	12.4	3.8	11.3	11.4
	Three or more	9.2	8.2	1.3	6.7	7.1
		100	100	100	100	100
Sample (person-period observations)		4,968	8,435	1,972	17,827	33,202

a. Based on person-period observations of pooled HILDA data from 2001 to 2010.

Source: HILDA Release 10

## **5.2 Participation in education and paid work**

The employment and educational profile of renters is shown in Table 15 below. While participation in paid work is most frequent among moderate to higher-income private renters (73%), there are surprisingly high rates of labour market participation among all other rental groups. Nearly a third of social renters (32%) are employed on either a full-time or part-time basis. Over a quarter of private renters with income support are in paid work. The majority of low-income renters (80%) without income support are in paid work, with the largest proportion (47%) employed on a full-time basis. Social renters (61%) and private renters with income support (59%) have comparable proportions that are not in the labour force. As to be expected, the rate of unemployment (14%) is highest among private renters with income support.

Among the private renters with income support who are in work, the type of employment is typically based on casual contracts suggesting that many are likely to be combining income support with more precarious employment. Low-income renters without income support also have high rates who are employed on a casual basis suggesting increased risks to socio-economic security, particularly with respect to the stability of their incomes and housing. They are also a group who is most likely to be studying for a post school qualification (27%) indicating that many will be combining precarious incomes with further education.

**Table 15: Labour force and educational characteristics of renters, HILDA 2001–10<sup>a</sup>, column %**

		<b>Social renters</b>	<b>Private renters with ISP</b>	<b>Low-income private renters with no ISP</b>	<b>Moderate to high-income private renters</b>	<b>All renters</b>
Labour force status	Employed full-time	18.5	5.3	46.8	73.2	46.2
	Employed part-time	13.5	21.4	32.7	16.2	18.1
	Unemployed	7.5	13.9	5.1	2.3	6.2
	NLF	60.5	59.3	15.3	8.3	29.5
		<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
Job contract (employed persons only)	Fixed term	9.8	5.9	10.7	11.7	10.9
	Casual or other	35.2	62.8	45.5	18.3	26.2
	Permanent	55.0	31.3	43.8	70.0	62.9
		<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
Highest qualification	University qual.	7.9	7.2	17.4	26.1	18.0
	Other post- school qual.	23.7	25.5	24.6	31.8	28.5
	Year 12 or below	68.5	67.3	58.0	42.2	53.5
		<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
Studying a post-school qualification	No	93.5	84.4	72.5	87.7	86.8
	Yes	6.5	15.6	27.5	12.3	13.2
		<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
Sample (person-period observations)		4,968	8,435	1,972	17,827	33,202

a. Based on person-period observations of pooled HILDA data from 2001 to 2010.

Source: HILDA Release 10

### 5.3 Income and housing

Broadening the conceptualisation of low-income renters beyond an income threshold cut off point of 40 per cent yields quite interesting similarities and contrasts between the renter groups from a policy perspective. While in the earlier section it was shown that as many social and private renters with income support fall above as they do below the 40 per cent cut off point, they by no means have household incomes that could be considered high relative to other renters. As shown in Table 16 below, the income patterns of social renters and private renters with income support broadly correspond with their demographic and employment profile. The equivalent household income of \$66 535 among the moderate to higher-income private rental group nearly doubles that of social renters (\$35 423) and private renters with income support (\$33 900).

Despite the similar incomes, private renters with income support pay an additional \$243 in monthly median rental costs (or average \$251) compared with their social rental counterparts. Moreover, while the household income among private renters without ISP (\$16 154) is approximately half that of social renters, they also pay around \$250 more per month in their housing. This indicates that housing related socio-economic insecurity is more probable among both groups of 'lower'-income private renters.

**Table 16: Equivalised annual disposable income and monthly rent paid, HILDA 2001–10<sup>a</sup>, column %**

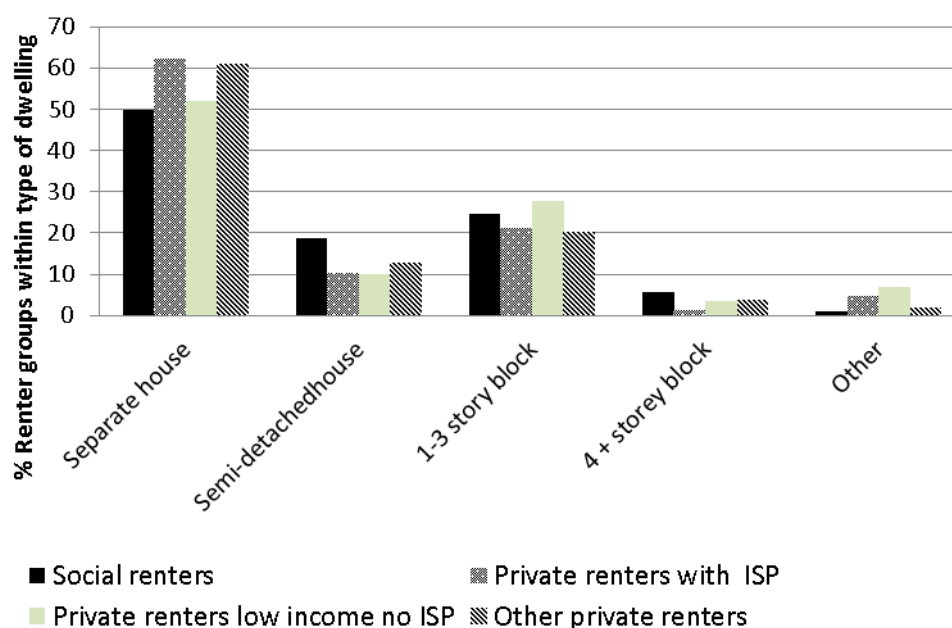
		Social renters	Private renters with ISP	Private renters with no ISP & low income	Moderate to high-income private renters	All renters
Mean equivalised household disposable income (\$)		35,423	33,900	14,976	66,009	50,244
Average monthly rent (\$)	Mean	495.0	745.8	745.3	1,045.5	869.1
	Median	435.0	678.0	652.0	956.0	782.0

a. Based on person-period observations of pooled HILDA data from 2001 to 2010.

Source: HILDA Release 10

Figure 2 illustrates the type of dwelling rental groups lived in. As shown and to be expected, social renters are the least likely to live in a separate house although very few (6%) live in the more high density four or more storey blocks. There is also a slightly higher proportion of low-income private renters without ISP (27%) who live in one to three bedroom flats, although this type of dwelling is generally spread evenly amongst renter groups. The type of housing in which renters live could mediate area based wellbeing outcomes and thus will be an important variable to control for in the subsequent analysis.

**Figure 2: Dwelling characteristics of renters, HILDA 2001–10<sup>a</sup>**



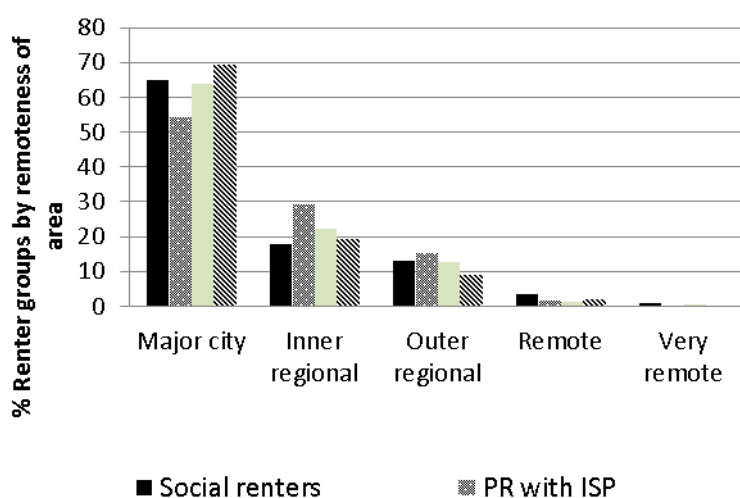
a. Based on person-period observations of pooled HILDA data from 2001 to 2010.

Source: HILDA Release 10

## 5.4 Area characteristics

Although the majority of private and social renters live in metropolitan areas, there is considerable variation among groups, particularly private renters in receipt of income support and moderate to high-income private renters. As shown in Figure 3 below, private renters with income support have a much broader spread across inner regional and outer regional areas of Australia, with just over half (54%) living in a major city and a further 28 per cent living in inner or outer regional areas. Conversely, more than two-thirds of private renters with moderate to high incomes live in a major city. It should be noted that the inner regional areas can include the metropolitan fringes of major cities, so it does suggest that private renters in receipt of income support are more likely to live in the areas that are located some distance from the major centres of employment. An alternative measure of remoteness to explore in future may be the ARIA index, based on road distances from major urban centres and services.

**Figure 3: Remoteness of area of renter groups, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.

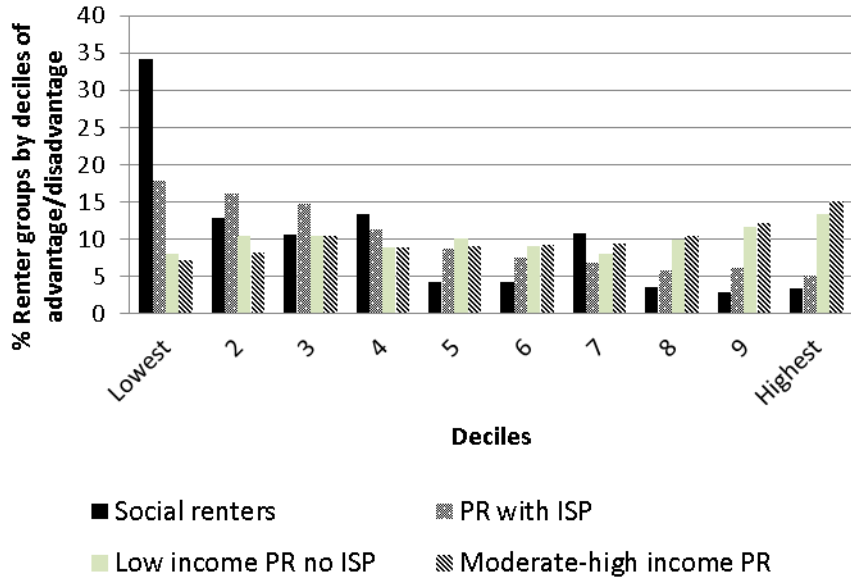
Source: HILDA Release 10

In further exploring the area distribution of our renter groups, we use two measures of SEIFA indexes of advantage and disadvantage and occupation and education. While limited as overall measures of social mix, as outlined earlier, they do indicate area-based demographic variation that can help to identify the extent to which lower-income renter groups live in better off areas compared to 'poorer' and disadvantaged areas. The two SEIFA measures produce broadly similar patterns among renter groups. As shown in Figures 4 and 5 below, social renters are most likely to be concentrated in the lowest deciles, although this is not as pronounced for the SEIFA on occupation and education. The high proportion of social renters within the first decile is to be somewhat expected for the SEIFA of advantage/disadvantage because the proportion of public housing dwellings in a particular area forms part of the composite index measure. Although social renters are most likely to be clustered within the first four deciles for both SEIFA measures, there is a pocket living within the seventh decile of advantage/disadvantage and the eighth decile of occupation and education as well as spread among the highest deciles. This indicates that comparisons can be made on the wellbeing outcomes of those living in better off versus poorer areas.

The pattern for private renters in receipt of income support shows an almost uniform decline from the lowest to the highest with each successive decile increase. This suggests that there will be fewer private renters in receipt of income support as an area becomes more

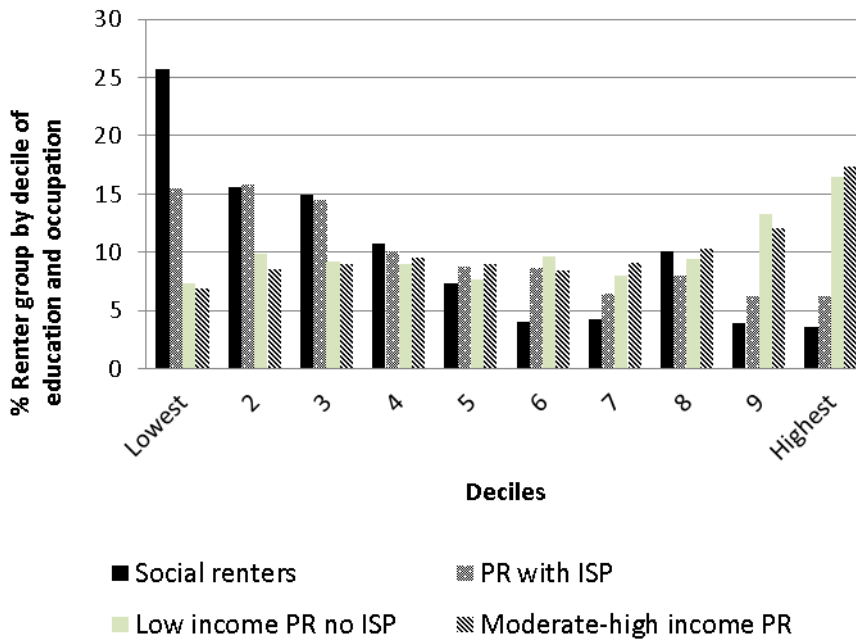
advantaged. This pattern is not as uniform for the SEIFA of occupation and education. While moderate to high-income private renters and low-income renters without income support are most likely to be clustered in the highest decile, there is a spread across all deciles.

**Figure 4: Renter groups by SEIFA deciles of advantage and disadvantage, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

**Figure 5: Renter groups by SEIFA deciles of occupation and education, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

### 5.4.1 2011 Census data—spatial concentration

While the spatial distribution of renters will be further explored through both mapping and statistical analysis with the construction of our own area-based measures, the following presents a preliminary exploration of 2011 Census data regarding the spatial distribution and concentration of types of rental households in Australia. Table 17 below shows the total number of rental households by tenure and by lower-income status based on the criteria outlined in Section 4.2.3. In the 2011 Census, there are 2 349 332 rental households in Australia. Lower-income households account for 39 per cent of total households; and for a higher share (52%) of rental households. Unsurprisingly, lower-income households account for the majority (81%) of households in public and community rental while just under half (46%) of private rental households are lower income. Private renters are the largest group of rental households (1 801 573) and of lower-income rental households. Around a quarter of lower-income households are in private rental (24% or 835 883) compared to 299 329 (8%) in public or community housing. Thus there are over double the number of lower-income households in private rental than in social rental.

Of 97 in-scope SA4 units in Australia, with an average of 57 223 households in each, 27.5 per cent households in public or community housing are situated in the 10 largest by number (concentration measure—shown in Table 18). Regions accounting for the largest shares of public and community renters included Inner Melbourne (13 558), North Adelaide (12 842 households), the Inner South West of Sydney, and Parramatta in Sydney. Aside from Inner Melbourne and the ACT, most SA4 regions with the highest numbers of social rental households were in Sydney and Adelaide.

By SA4 area, lower-income private renters are slightly less spatially concentrated than social renters, with 24.5 per cent located in the 10 largest regions by number (Table 19). The regions in which most lower-income private renters are located tended to be different to the locations for social rental households, with private rental households the most concentrated in the Gold Coast (29 935 households), South East Melbourne (24 413), and Melbourne West. These and Inner Melbourne and Inner South West Sydney each had over 20 000 lower-income private rental households. Comparatively large shares of lower-income private renters are located in South East Queensland (Gold Coast, Sunshine Coast, Wide Bay). (For a more detailed profile of the distribution of lower-income renters for each capital city, see the area-based maps in Appendix 1.)

**Table 17: Rental households by tenure and lower-income status (Census 2011)**

	Equivilised household income <41,599		Total households	
	n	%	n	%
Private rental	835,883	24%	1,801,573	20%
Public rental	299,329	8%	369,708	4%
Other rental	79,068	2%	178,051	2%
Total rental	1,214,280	34%	2,349,332	26%
Total	3,553,588	100%	9,140,231	100%

Source: ABS Census, 2011

**Table 18: Concentration of public and community renters (2011) by top 10 areas (SA4s)**

	<b>Statistical Area 4</b>	<b>Public or community renters</b>	<b>% of Australia</b>	<b>Cumulative</b>
1	Melbourne—Inner	13,558	3.7%	3.7%
2	Adelaide—North	12,842	3.5%	7.1%
3	Sydney—Inner South West	10,736	2.9%	10.0%
4	Sydney—Parramatta	10,109	2.7%	12.8%
5	Australian Capital Territory	10,084	2.7%	15.5%
6	Sydney—City and Inner South	9,782	2.6%	18.2%
7	Adelaide—West	9,010	2.4%	20.6%
8	Sydney—Blacktown	8,728	2.4%	23.0%
9	Sydney—South West	8,552	2.3%	25.3%
10	Adelaide—South	8,354	2.3%	27.5%
	<b>All in top 10</b>	<b>101,755</b>	<b>27.5%</b>	-
	<b>All Australia</b>	<b>369,707</b>	<b>100.0%</b>	-

Source: ABS Census, 2011

**Table 19: Concentration of lower-income private renters (2011) by top 10 areas (SA4s)**

	<b>Statistical Area 4</b>	<b>Lower-income private renters</b>	<b>% of Australia</b>	<b>Cumulative</b>
1	Gold Coast	29,935	3.6%	3.6%
2	Melbourne — South East	24,413	2.9%	6.5%
3	Melbourne — West	23,281	2.8%	9.3%
4	Melbourne — Inner	23,057	2.8%	12.0%
5	Sydney — Inner South West	22,098	2.6%	14.7%
6	Sydney — Parramatta	17,099	2.0%	16.7%
7	Sunshine Coast	17,071	2.0%	18.8%
8	Wide Bay	16,514	2.0%	20.8%
9	Adelaide — North	16,011	1.9%	22.7%
10	Central Coast	15,430	1.8%	24.5%
	<b>All in top 10</b>	<b>204,909</b>	<b>24.5%</b>	-
	<b>All Australia</b>	<b>835,883</b>	<b>100.0%</b>	-

Source: ABS Census, 2011

We also analysed distribution across a small spatial unit, SA2s. In the 2011 Census there are 2205 in-scope SA2s containing on average 2517 households. Across Australia, 25 per cent of SA4s had 5.3 per cent or greater of their population in social rental. In Sydney, for example, locations in this top quartile of concentration for social rental included Bonnyrigg Heights-Bonnyrigg; Mount Druitt-Whalan; and Glebe-Forest Lodge. Social housing is generally concentrated in the outer west south west of Sydney, with some suburbs also in the inner west. By comparison, in large portions of Sydney's north, south, and east less than 5 per cent of households were in lower-income social rental.



In Melbourne, fewer areas than in Sydney have large proportions of lower-income social rental households. The areas where over 5.3 per cent of the population are public or community renters are mainly around the inner city—Richmond, South Melbourne, Carlton and Fitzroy. There are also some concentrated areas of social housing in Braybrook, Heidelberg West, and Broadmeadows.

As noted, greater numbers of lower-income households are in private rental than in social rental. Lower-income private renters also have somewhat different spatial patterns at the SA2 level. Mapping of SA2s showed that there are large contiguous areas or ‘corridors’ of cities (with Sydney and Melbourne as examples) where higher proportions of private renters are concentrated. The bulk of lower-income private renters in Australia in 2011 are located in south east Queensland; the south west and west of Sydney; and the outer south east and west of Melbourne.

Across Australia, 25 per cent of SA2s had 10.7 per cent or greater of their population in lower-income private rental. In Sydney, most suburbs (SA2s) in the west and south west have high proportions of their populations in lower-income private rental. These included Auburn, Parramatta, Cabramatta and Fairfield. In Melbourne, there are significant concentrations of lower-income renters in the outer south east including Dandenong and Noble Park; and in the west including Braybrook, St Albans, and Werribee.

Mapping highlights that there are spatial concentrations of lower-income rental households in Australia, and that there are somewhat different patterns for social and private rental tenures. Large shares of lower-income rental households live in a comparatively limited number of regions. In some suburbs, lower-income rental households are the majority of households. In contrast, other parts of Australia and Australian cities have essentially no lower-income rental households.

#### *5.4.2 2011 Census data—local rent and income levels*

Figure 6 below shows the shares of renters by the median weekly rent of their small area (statistical local area 2) of residence. SA2s have been used as these equate roughly to suburbs, which are a generally recognisable spatial unit. SA2s are also part of the updated ASGS hierarchy, aggregating to the SA4 regions discussed above. They provide a reasonably descriptive level of disaggregation.

Median rents of areas are presented in five equal groups from low (\$175 per week or less) to high (\$350 per week or more). The spatial units have been divided into groups based on the median weekly rent of the area. Thus, each group contains close to 20 per cent of spatial units. Rounding results in some unevenness of groups. The ranges are 0–\$175 per week (445 SA2s); \$178–\$250 per week (504 SA2s); \$251–\$300 per week (438 SA2s); \$301–\$350 per week (377 SA2s) and \$351–\$975 (\$351+, 441 SA2s).

The quintiles represent the number of SA2s in Australia within these rent ranges. The largest shares of both social renter households and lower-income private renter households are in the low-middle rent range areas (\$175–\$250 per week), with 34 per cent of social rental households and 29 per cent of lower-income private rental households living in these areas. Partly because median rents include the generally much lower social rents, and because public housing is spatially concentrated, more social renters (14%) live in low rent (\$175 per week or less) areas than do private renters (8%). Conversely, greater shares of lower-income private renters (17%) live in high rent (\$350 per week or more) areas than do social renters (13%).

**Figure 6: Location of renter households by median rent of area (SA2), by renter type**



Source: ABS Census, 2011

Figure 7 shows renter households as a percentage of total households in their SA2 area. Renter households as a whole are fairly evenly distributed, accounting for 27 per cent of households in high rent areas and 23 per cent of low rent areas. Social renters decline consistently from 6 per cent of households in low rent areas, to 2 per cent of households in high rent areas. Lower-income private renters comprise 11 per cent of households in areas with low-middle median rent (\$175–\$250), declining to 7 per cent of households in areas of high median rent.

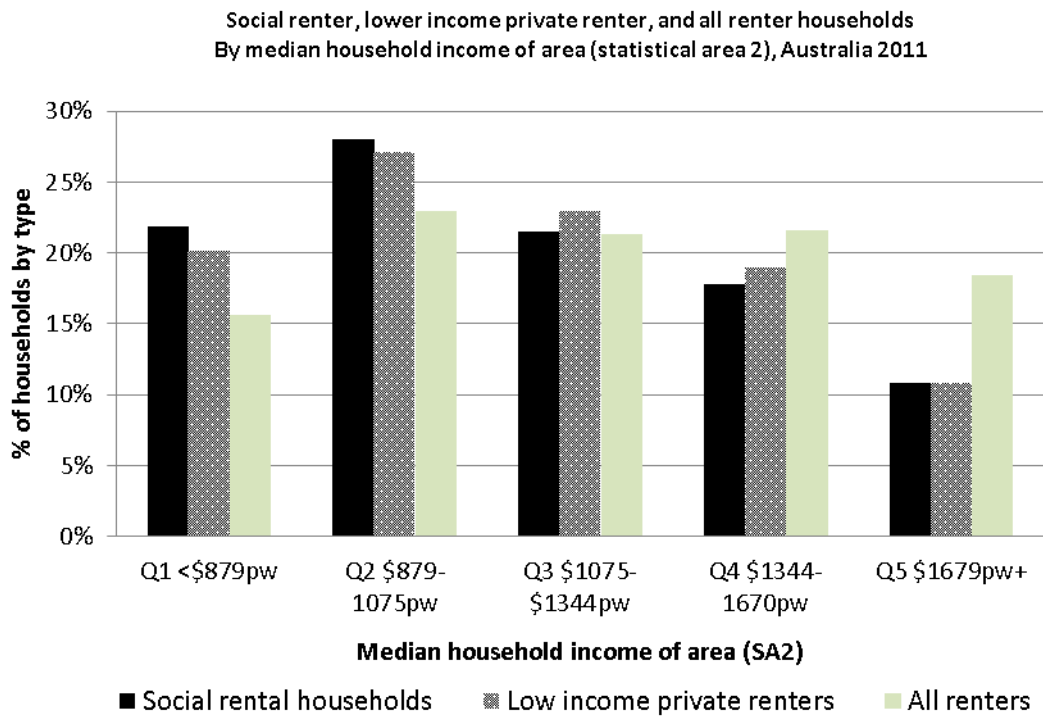
**Figure 7: Renter households as % of area (SA2) households, by median rent of SA2**



Source: ABS Census, 2011

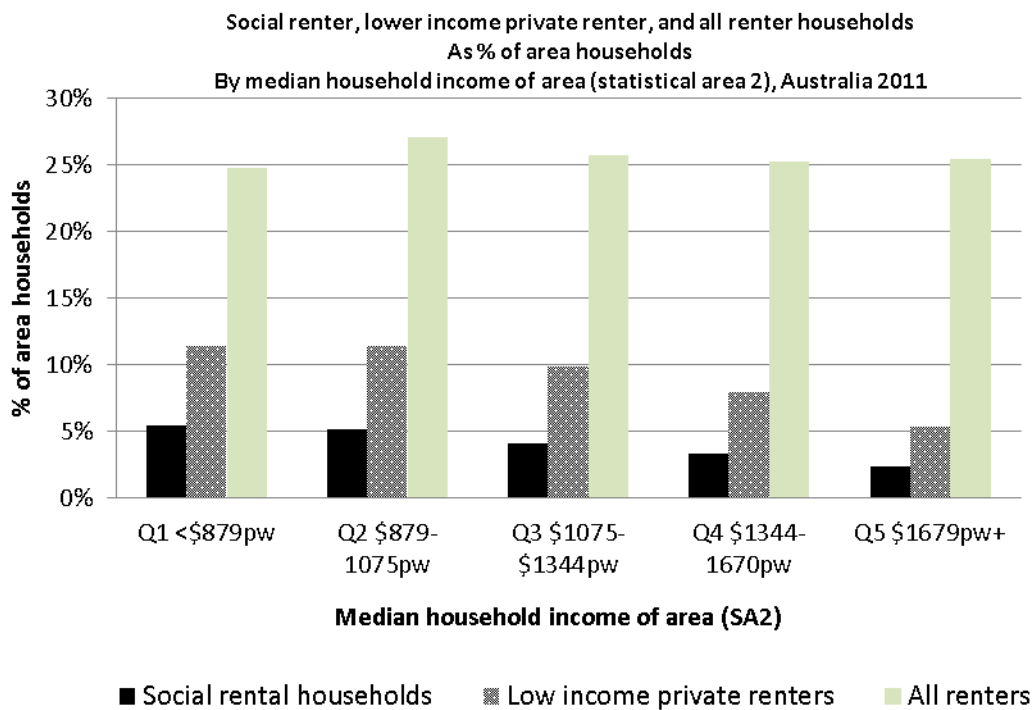
In examining trends in median incomes Figures 8 and Figures 9 show comparatively few social or lower-income private renters live in areas with high median incomes, with 11 per cent of each living in areas with median incomes of \$1679 per week or more. Lower-income private renters make up 11 per cent of households in low-income areas (\$879 per week or less) and 5 per cent of households in high-income areas (\$1679 or more). Renter households as a whole are more evenly distributed. The relationships between area rents and incomes, and the locations of lower-income renters, are expected and in part are endogenous. The patterns highlight the proportions of social or lower income rental households that live in ‘mixed’ or ‘advantaged’ communities by these measures.

**Figure 8: Location of renter households by median household income of area (SA2), by renter type**



Source: ABS Census, 2011

**Figure 9: Lower-income renters as % of area (SA2) population, by median rent of SA2**



Source: ABS Census, 2011

The key findings from the Census analysis by spatial area are as follows:

- Census data unsurprisingly indicate that the majority (81%) of households in social rental are on lower incomes. Lower-income households also account for a disproportionate part of private rental households (46%). Greater numbers of lower-income households are in private rental (835 883 or 24%), than in social rental (299 329 or 8%).
- Social housing households were found to be more concentrated into small spatial areas than lower-income private renters. Of 97 Statistical Area 4 (SA4) units, the 10 largest by rank contained 27.5 per cent of social rental households. Of lower-income renter households, 24.5 per cent were located in the 10 highest ranked SA4 areas.
- SA4 areas accounting for the largest shares of social housing households included Inner Melbourne, North Adelaide, and Sydney's Inner South West. The largest numbers of lower-income private rental households were found in the Gold Coast, South East Melbourne, and Melbourne's West. Areas with the largest numbers of social rental households tended to differ from areas with high numbers of lower-income private rental households.
- The Census analysis compared the median rents and median household incomes of areas (2205 Statistical Areas level 2 or SA2s) with the numbers of social and lower income rental households. The largest shares of both social renter households (34%) and lower-income private renters (29%) live in suburbs with low-middle median rents (\$175–\$250 per week). Comparatively few social renter households (13%) or lower-income private renters (17%) live in areas of higher median rent (\$350 per week or more). Only 2 per cent of social renters and 5 per cent of lower-income private renters live in suburbs with high median incomes. Rental households overall are however very evenly distributed across areas of differing rent and housing levels.
- Very few households in social rental, or lower-income private rental, lived in spatial areas of high housing costs or high overall incomes. Areas with high housing costs have progressively fewer social or lower-income renter households. This is highlighted when considering the maps of median rents compared to maps (Appendix 1) of social and lower-income renter groups. The comparatively low proportions of social or lower-income rental households appear to live in 'advantaged' communities. The majority of social and lower-income private renters live in a limited number of areas that have lower overall levels of housing costs and incomes.
- The spatial distribution of renter groups at the SA2 level, as shown in the maps in Appendix 1, presents a more disaggregated unit. The maps show where social renters or lower-income private renters accounted for the larger shares of local area populations.
- As an example, in Sydney key locations for social housing were in the outer south west, with some pockets in the inner west. By comparison, in large parts of Sydney's north, south and east, few or no households were in social rental. Lower-income private rental households in Sydney were also largely concentrated into a corridor of suburbs in the west.
- In Melbourne, fewer areas of concentrated social housing are indicated than in Sydney. Melbourne suburbs with high proportions of social housing were largely in the inner city, with some estates further from the city. Lower-income private renters tended to be concentrated in large contiguous areas, in the south east around Dandenong and in the west of the city.
- Advantaged and disadvantaged areas tend to be contiguous, meaning that there are larger scale spatial divisions between the locations where many lower-income renters live, and the locations of apparent 'advantaged' areas. Large shares of lower-income

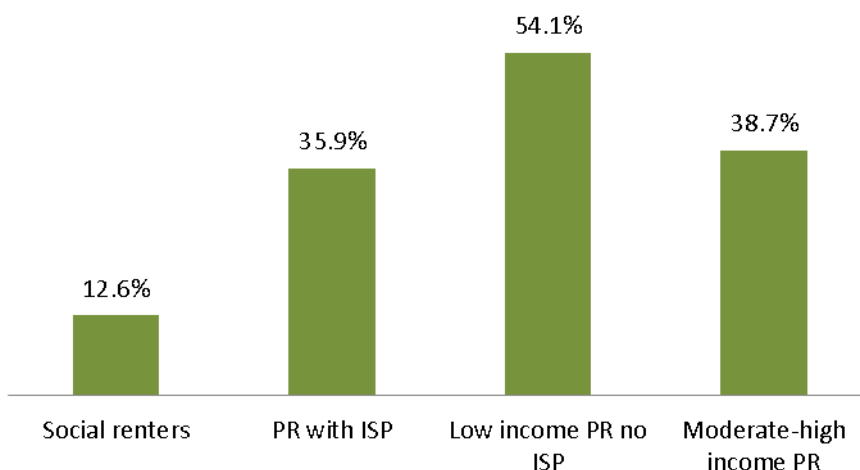
rental households live in a comparatively limited number of regions. In some suburbs lower-income rental households are the majority of households. In contrast, other parts of Australia and Australian cities have essentially no lower-income rental households.

## 5.5 Mobility and area changes among renters

As discussed earlier, identifying the indicators and controls for exposure to a particular area or neighbourhood is critical in being able to establish area effects. A critical mediating factor among renters is likely to be how long they reside in a particular area, although mobility versus stability is likely to have a different impact on wellbeing depending on the types of outcomes that are of interest. High instability, for instance, could result in lower area-based connection but increased chances of obtaining employment. A key strength of longitudinal data are that patterns of mobility into and out of particular areas, as crude proxies for exposure, can be assessed over time. At this stage of the research, we merely present an overview of mobility patterns, with a particular focus on which renter groups are most likely to move to areas of greater opportunity based on changes in SEIFA deciles, area unemployment rates, and whether those who move end up paying more, less rent or the same rent. It should be noted that for the purposes of this Positioning Paper we concentrate on rent to rent or ‘within tenure’ moves. In subsequent analysis we will extend our analysis to renters moving across tenures, such as renting to owning.

Figure 10 below shows which renters are most likely to move between consecutive years of observation from a total sample of renters across the ten years of HILDA data. As shown, the most mobile are low-income renters with no income support (54.1%). Their high mobility is likely to be strongly correlated with their younger age and childless profile. The least likely to move, and consistent with the mobility literature, are social renters. The low mobility among social renters suggests that they will be more likely to be exposed to both the negative consequences of prolonged ‘exposure’ to disadvantage as well as to the positive factors that may accompany greater stability. On average, social renters had spent 8.7 years at their current address, followed by private renters with income support who spent 3.4 years. Other renters have been typically living in the same address for two years.

**Figure 10: Percentage of renters moving between consecutive years, HILDA 2001–10<sup>a</sup>**

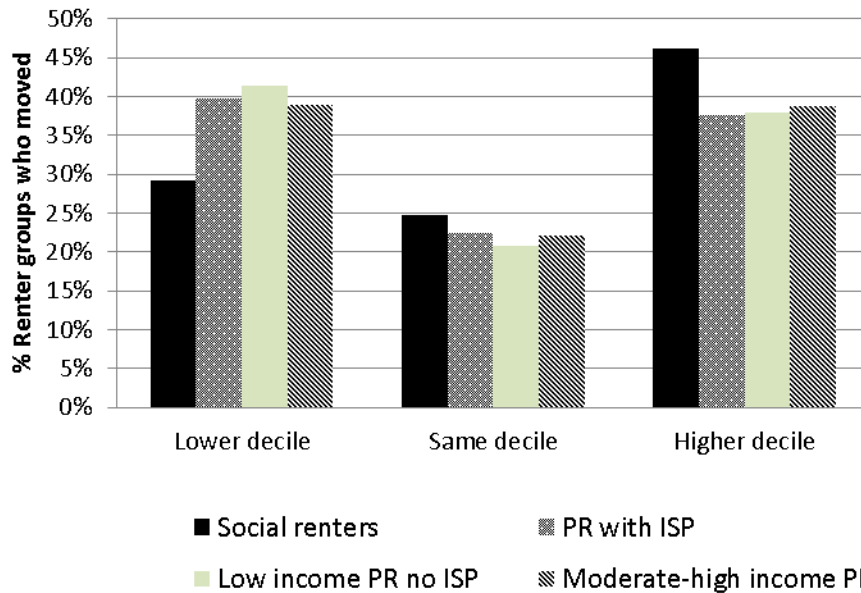


a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

While social renters are less likely to move, Figures 11 and 12 below show that when they do, it is generally to a more advantaged area or an area of higher education and occupation. This seems logical given that many are living in the lowest decile, so there is very little option. However, around a quarter move within the same decile, suggesting that there is

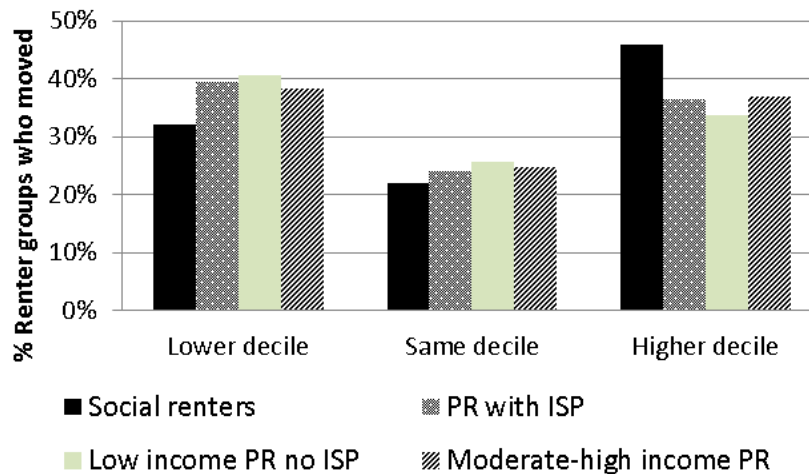
likely to be ongoing exposure to concentrations of disadvantage despite mobility. There is generally less variation among all private renter groups with roughly 40 per cent moving down the advantage scale while a further 40 per cent moved to a 'better off' area.

**Figure 11: Change in SEIFA decile of index of relative socio-economic advantage and disadvantage among renters who move between consecutive years, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

**Figure 12: Change in SEIFA decile index of education and occupation among renters who move between consecutive years, HILDA 2001–10<sup>a</sup>**

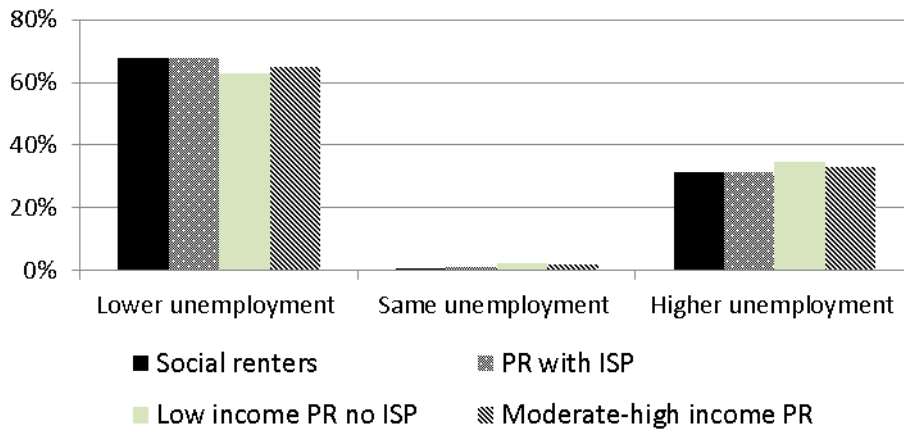


a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

Generally, as illustrated in Figure 13 below, renters who move residence between consecutive years relocate to an area that has a lower unemployment rate. This could indicate many things. It could suggest that those who move do so for work related reasons and thus will choose an area that increases their chances of finding employment. It could also reflect the higher desirability of these areas as a place to live in. However, there are still

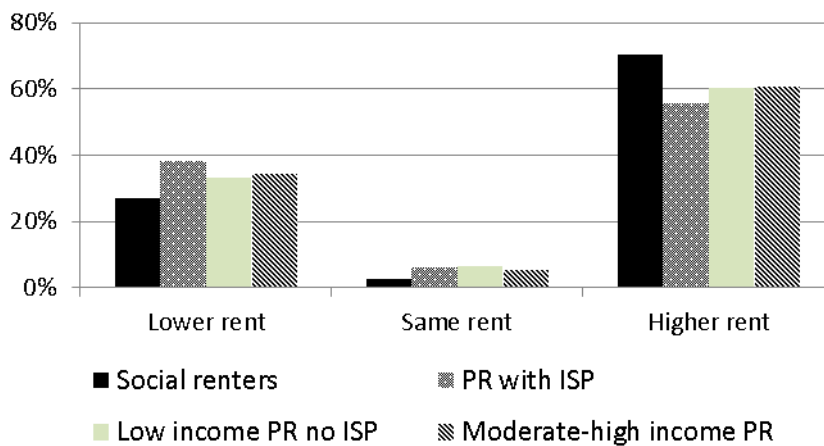
around a third of renters across all groups who move to an area with higher unemployment. It is likely, as argued by many housing researchers, that rental costs play a significant part in this dynamic. Figure 14 below shows whether renters who move pay higher, lower or the same amount of rent in the subsequent years. While social renters were shown to be less likely to move, the majority of those who do (70%) pay higher rents and this is likely to partially explain low mobility rates among this group. Among renter groups, private renters with income support were the most likely to pay lower rent, potentially indicating financial stress associated with their existing rents.

**Figure 13: Change in area unemployment rate among renters who move between consecutive years, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

**Figure 14: Change in amount of monthly rent paid among renters who move between consecutive years, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

The way in which mobility influences both socio-economic security and capacity for social inclusion, and in turn improvements in overall wellbeing will be explored further in the next stage of the research. In particular, we will examine whether there are both improvements and declines in subjective and objective wellbeing of renters who move to better off areas compared with those remaining in or moving to an area that is worse off.



## 5.6 Preliminary findings on place-based subjective wellbeing

Next we present initial findings on place-based wellbeing outcomes drawing on the standard subjective measures of life satisfaction as well as satisfaction in key life domains that may be linked to area effects. These include satisfaction with financial situation, employment opportunities, the home you live in, the neighbourhood in which you live, how safe you feel, and feeling part of the local community. As the project progresses, we will supplement this preliminary analysis with new measures of social mix as well as compare subjective and objective wellbeing outcomes within a broader social quality of life framework. However, the results presented here do suggest that there are likely to be important area-based variations among renter groups warranting a more thorough investigation through multi-level modeling techniques.

In this section, we examine median scores of wellbeing as an initial way of identifying variance across groups and within areas of higher advantage and disadvantage. Consistent with the existing Australian research, the overall findings suggest that subjective wellbeing does vary among renter groups and according to area, for specific domains of wellbeing.

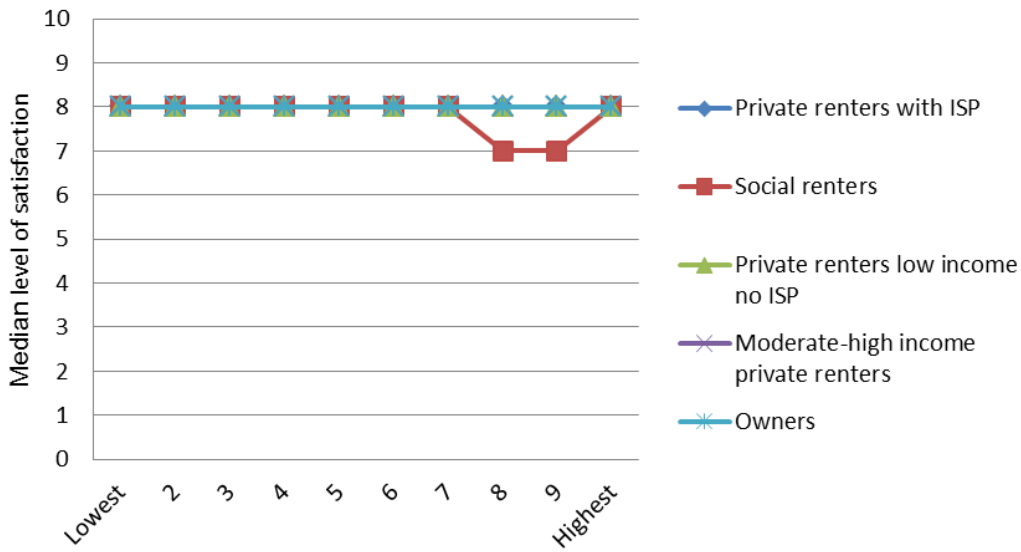
All indicators of life satisfaction shown are measured on a likert scale from 0 to 10 where 0 indicates very low satisfaction and 10 indicates very high satisfaction. In Figures 15 to 21 below we compare the median level of subjective wellbeing of renter groups across different life domains according to the type of area they live in as measured by the SEIFA decile of Relative Socio-Economic Advantage and Disadvantage. The SEIFA deciles range from 1 as the lowest to 10 as the highest, where the lowest represents the most disadvantaged and the highest the most advantaged area. Median scores of subjective wellbeing are shown on the vertical axis while SEIFA scores are shown on the horizontal axis. All data shown in the figures are based on person-period observations of pooled HILDA data from 2001 to 2010.

First, we examine overall life satisfaction among our renter groups using the Index of Relative Socio-Economic Advantage and Disadvantage SEIFA deciles<sup>2</sup> they live in as shown in Figure 15. Subjective wellbeing across sample populations typically ranges between 7 and 8 on a likert scale. We include wellbeing scores for home owners as a basis of comparison among renter groups. While we see little variation in overall life satisfaction according to decile areas among private renters and owners, the subjective wellbeing of social renters presents a different story. Life satisfaction for social renters is typically highest in the lower to moderate areas and then falls quite noticeably in deciles 8 and 9. This decline in wellbeing for social renters as the advantage of the area increases presents an interesting empirical 'paradox'. The higher density housing in the more affluent inner areas corresponding with the upper deciles could be influencing these outcomes or they may be related to other factors specific to these areas. In any case, this relationship will be explored further in the next stage of the research.

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<sup>2</sup> We also repeated the analysis using the Index of Education and Occupation and observed similar trends in overall life satisfaction across the four renter groups. Results are available from the authors upon request.

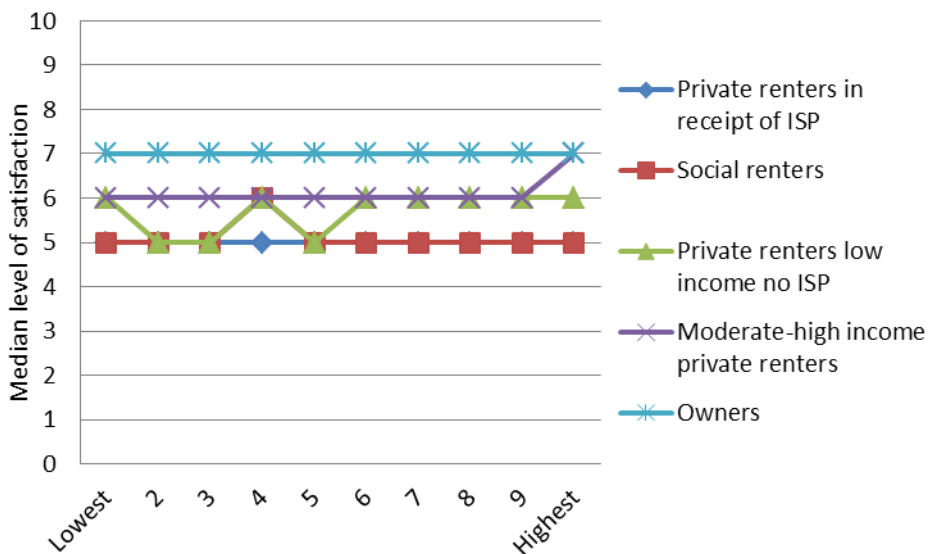
**Figure 15: Median life satisfaction by SEIFA deciles of advantage and disadvantage, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

Next, in Figure 16, we examine the average satisfaction of renters’ financial situation according to the SEIFA decile they live in. The variation in median scores is more apparent among renter groups, although interestingly all renters’ satisfaction falls below a median of 7, suggesting that as group they generally have low satisfaction with their financial situation. Moderate to high-income renters are the most satisfied among renter’s groups and this generally increases as the advantage of the area increases. Other private renters show a similar increase by area. Private renters with income support have the lowest satisfaction with their financial situation in the lowest to moderate areas of disadvantage, which generally increases in the highest deciles. In contrast, satisfaction with finances among social renters is typically lowest of all groups and shows little variation across decile areas.

**Figure 16: Median satisfaction with financial situation by SEIFA deciles of advantage and disadvantage, HILDA 2001–10<sup>a</sup>**

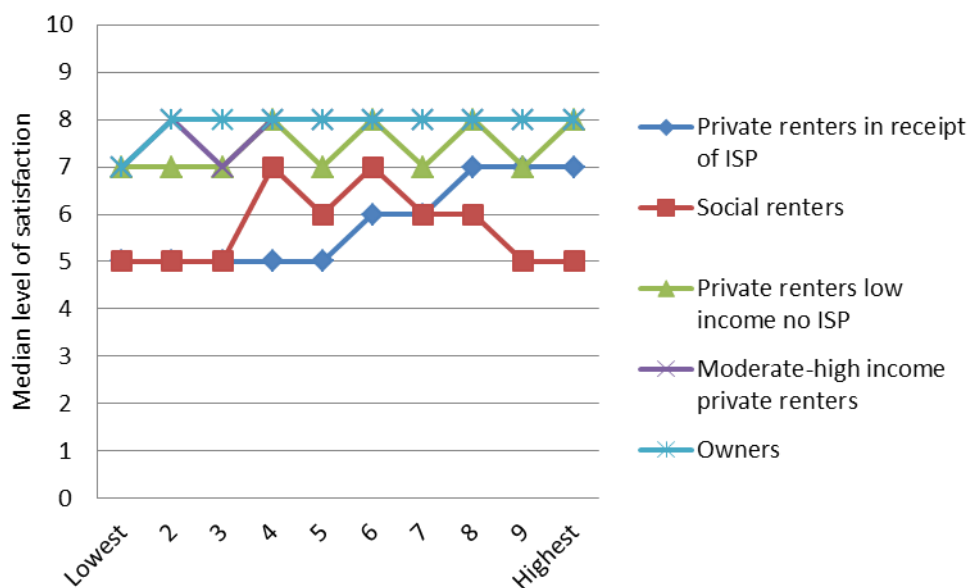


a. Based on person-period observations of pooled HILDA data from 2001 to 2010.

Source: HILDA Release 10

Satisfaction with employment opportunities, as shown in Figure 17 below, varies considerably among renter groups. As to be expected, satisfaction with employment opportunities among owners and moderate to high-income private renters is highest of all groups and generally inclines as the affluence and status of the area increases. Private renters in receipt of income support generally have the lowest satisfaction with employment opportunities in the most disadvantaged areas and their satisfaction typically improves as the area becomes 'better off'. Interestingly, satisfaction with employment opportunities peaks for social renters living in the more moderately (deciles 4 to 6) advantaged areas and then falls again in the two highest deciles. These findings point to a stronger motivation among private renters to move to a better off area in search of employment compared with social renters. However, at this stage such a conclusion is only speculative.

**Figure 17: Median satisfaction with employment opportunities by SEIFA deciles of advantage and disadvantage, HILDA 2001–10<sup>a</sup>**

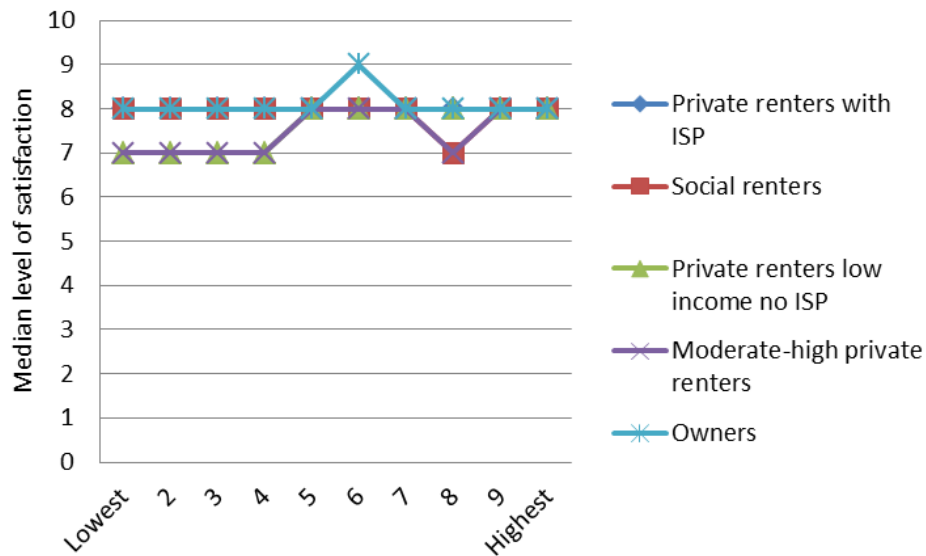


a. Based on person-period observations of pooled HILDA data from 2001 to 2010.

Source: HILDA Release 10

In examining satisfaction with 'the home in which you live', shown in Figure 18 below, there also appears to be a stronger imperative to move among moderate to higher-income private renters who are typically the least satisfied among all groups with their home when living in the lowest advantaged areas. Social renters are most satisfied with their home in the lower to moderate deciles with a fall in satisfaction in decile 8, which suggests, as with general life satisfaction, that the quality of the housing and surrounds in these areas is having a negative effect on wellbeing. Private renters' median satisfaction with their home remains at 8 in the higher decile areas.

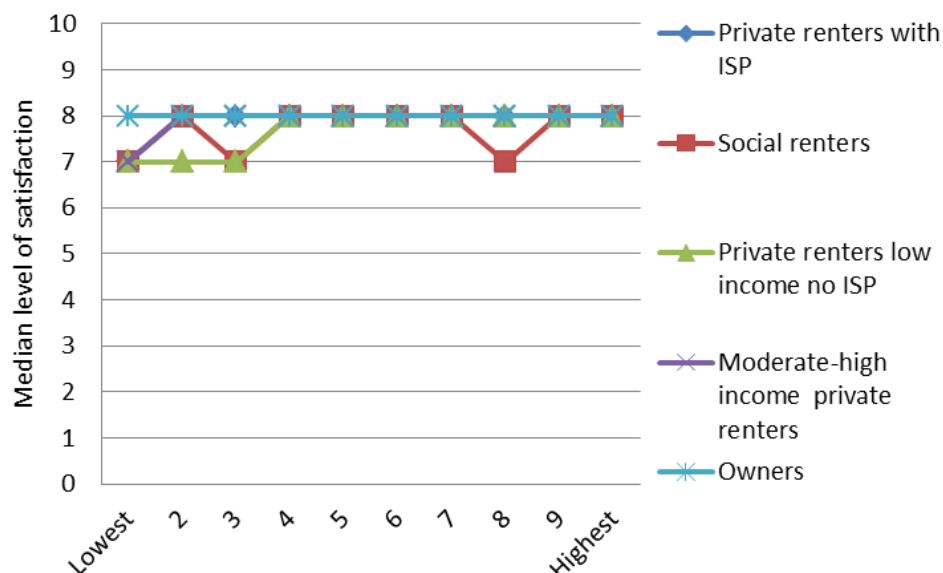
**Figure 18: Median satisfaction with home in which you live by SEIFA deciles of advantage and disadvantage, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

Satisfaction with ‘the neighbourhood in which you live in’, as shown in Figure 19, is typically lowest for all renter groups in the lowest decile. While the wellbeing of other renter groups steadily improves as the advantage of the area increases, wellbeing for social renters falls in the 8th decile, a pattern that is evident for other measures of wellbeing. There is no variation in the satisfaction with the neighbourhood among home owners.

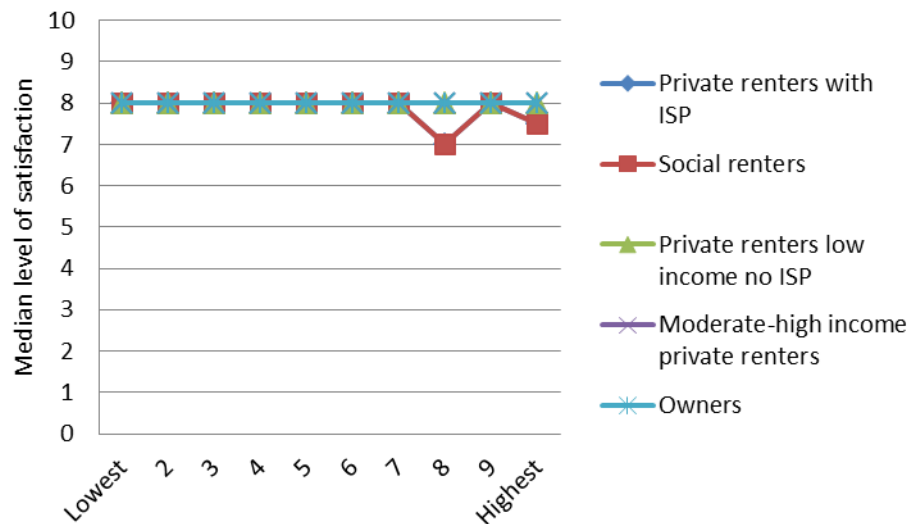
**Figure 19: Median satisfaction with neighbourhood in which you live by SEIFA deciles of advantage and disadvantage, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

Renters generally have a high sense of safety across all areas as indicated by high medians of 8. Again, as shown in Figure 20 in contrast to private renters, social renters living in the more affluent and higher status area feel less safe in deciles 8 and 10. This could point to the important micro-neighbourhood influence associated with higher density living versus the larger neighbourhood boundaries. Examining the impact of types of dwellings by areas will be critical in the next stage of multi-level modeling.

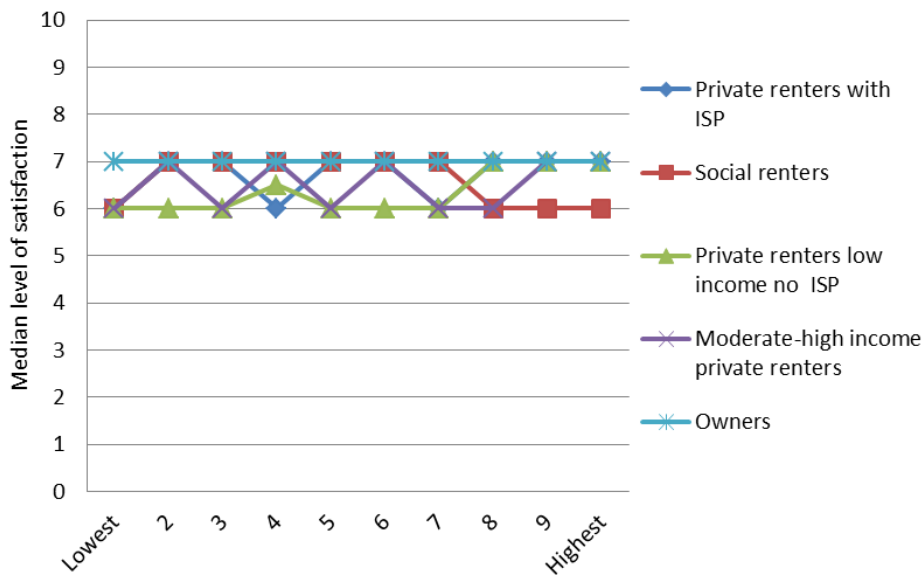
**Figure 20: Median satisfaction with how safe you feel by SEIFA deciles of advantage and disadvantage, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.  
Source: HILDA Release 10

Renters as group, as shown in Figure 21 below, do not generally have high satisfaction with feeling a part of their local community in the most disadvantaged areas. However, social renters are most likely to ‘feel a part of their community’ compared with other renters, peaking in areas with moderate advantage. While feeling part of the local community increases for private renters as the advantage of the area increases, wellbeing for social renters in the three highest deciles of 8, 9 and 10 falls to the lowest of all groups. An increased sense of community connection among social renters in the more moderately advantaged areas could reflect their lower overall rates of mobility and greater ‘attachment to place’ in these areas as highlighted by Burke and Hulse (2002) and Stone and Hulse (2007). Low levels of wellbeing among social renters in the better off areas could point to issues of social isolation via ‘mechanisms of relative disadvantage’.

**Figure 21: Median satisfaction with feeling part of local community by SEIFA deciles of advantage and disadvantage, HILDA 2001–10<sup>a</sup>**



a. Based on person-period observations of pooled HILDA data from 2001 to 2010.

Source: HILDA Release 10

In sum, the key descriptive findings are as follows:

- With the exception for the amounts paid on rent, social renters and private renters with income support share a similar age, marital status, gender and average income compared with the other two renter groups. While low-income private renters without income support and moderate to higher-income private renters are quite distinct groups, low-income private renters without income support are much younger and are predominately single. Moderate to high-income private renters are typically younger couples and/or families with young children.
- Individuals living in social rental are concentrated in the most disadvantaged and lowest status areas in terms of occupation and education, but are also found in mixed areas. Private renters with income support are mostly concentrated in the less advantaged areas and their numbers reduce as the advantage of the area they live in increases.
- Individuals in social rental are less likely to move, but when they do it is generally to a more advantaged area with a lower unemployment rate but also which has higher rents. Private renters are most likely to move, while renters who receive income support are most likely to move to an area of lower rent. Despite high mobility many renters remain in similarly disadvantaged areas suggesting ongoing exposure to particular types of areas.
- While the wellbeing of moderate to higher-income renters steadily improves as the advantage and occupational/educational status of the area improves, this is not always the case for lower-income renters, particularly social renters. Subjective wellbeing, particularly in relation to financial situation, community connection, employment opportunities, satisfaction with home and feelings of safety for social renters is typically better in the lower to moderately advantaged areas compared with more affluent and higher status areas. The highest degree of area-based variation in subjective wellbeing across renter groups is for satisfaction with employment opportunities. Generally, private renters with income support are more satisfied with their employment opportunities as the advantage of the area increases while social renters are most satisfied in moderately advantaged areas.

## **6 PRELIMINARY CONCLUSIONS AND THE NEXT STAGE OF THE RESEARCH**

The wellbeing of individuals is shaped by their social relations embedded in place. This Positioning Paper has presented the theoretical and empirical framework for a multi-level analysis of the wellbeing outcomes of lower-income renters that can simultaneously examine the influence of both individual and area-level factors. There is strong support and many examples of the use of multi-level models in isolating area from individual effects in the existing literature, including those that examine place-based wellbeing. While multi-level models have been applied in many Australian studies, there has been little research to date implementing this approach to examine longitudinal wellbeing outcomes among lower-income social and private renters in the one study.

The preliminary findings on wellbeing reveal little area-level variation in overall life satisfaction, with the exception of social renters living in the two highest advantaged areas. This suggests that focusing purely on subjective life satisfaction is likely to conceal important disparities across domains of wellbeing and the objective living circumstances of rental groups. The findings in this Positioning Paper reinforce the overall conceptual argument for the need to examine both subjective and objective dimensions of wellbeing.

Examination of the descriptive profile of rental groups and their reported subjective wellbeing indicates important avenues to be pursued in the next stage of the research. In particular, social renters residing in the highest SEIFA deciles of advantage and disadvantage report lower levels of wellbeing in terms of satisfaction with their homes, safety, community participation, financial situation, and employment opportunities. Lower wellbeing for social renters living in the most advantaged areas lends initial support for the relative deprivation argument associated with social-interactive mechanisms whereby social renters may experience lower wellbeing when contrasting their own circumstances with their better off neighbours. Alternatively, the impact on wellbeing may be attributable to the lower quality of housing for social renters in these better off areas. The relationship between relative deprivation and housing quality will be pursued further in the multi-level analysis in the next stage of the research.

The greatest degree of area-based variation among renters is evident for wellbeing associated with employment opportunities, showing quite distinct patterns among private and social renters. This suggests the importance of geographic mechanisms at play with the more mobile renter groups experiencing increasing satisfaction with employment opportunities as the areas improve while social renters are most satisfied in the moderately advantaged areas. At the same time, while the initial descriptive analysis revealed a similar demographic profile between social renters and private renters in receipt of income support, there is a large disparity between the amounts they pay for rents. The multi-level analysis in the next stage of the research will extend the focus on wellbeing linked to employment and housing security outcomes in more detail, including a more thorough examination of objective measures and patterns of mobility and the impact of persistent exposure to particular areas across time.

Area-based variation in outcomes appears to be most marked for renters compared with owners. This could indicate that ownership provides a buffer to the more adverse effects of areas. However, we cannot make any firm conclusions about the impact of area, and in particular whether the social mix of communities is beneficial or not. This is because first, the existing spatial measures available do not enable the specific housing compositions of areas to be adequately explored at the spatial level. Second, the descriptive analysis cannot determine whether variations observed between and within renter groups may be the result of an area or an individual effect or an interaction of both. In the next stage of the research

we will seek to construct better spatial measures of the 'social mix' of the communities that renters live in and then statistically test the difference that this makes for their wellbeing via a multi-level modeling approach. As the existing SEIFA measures are based on relative measures of advantage and disadvantage, we will also seek to examine the influence of absolute measures across areas, such as rates of unemployment. Moreover, the next stage of the analysis will explore the use of different measures of 'neighbourhood' boundaries.



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# APPENDIX

Figure A1: Adelaide, map of low-income private renters by Statistical Area Level 2, 2011

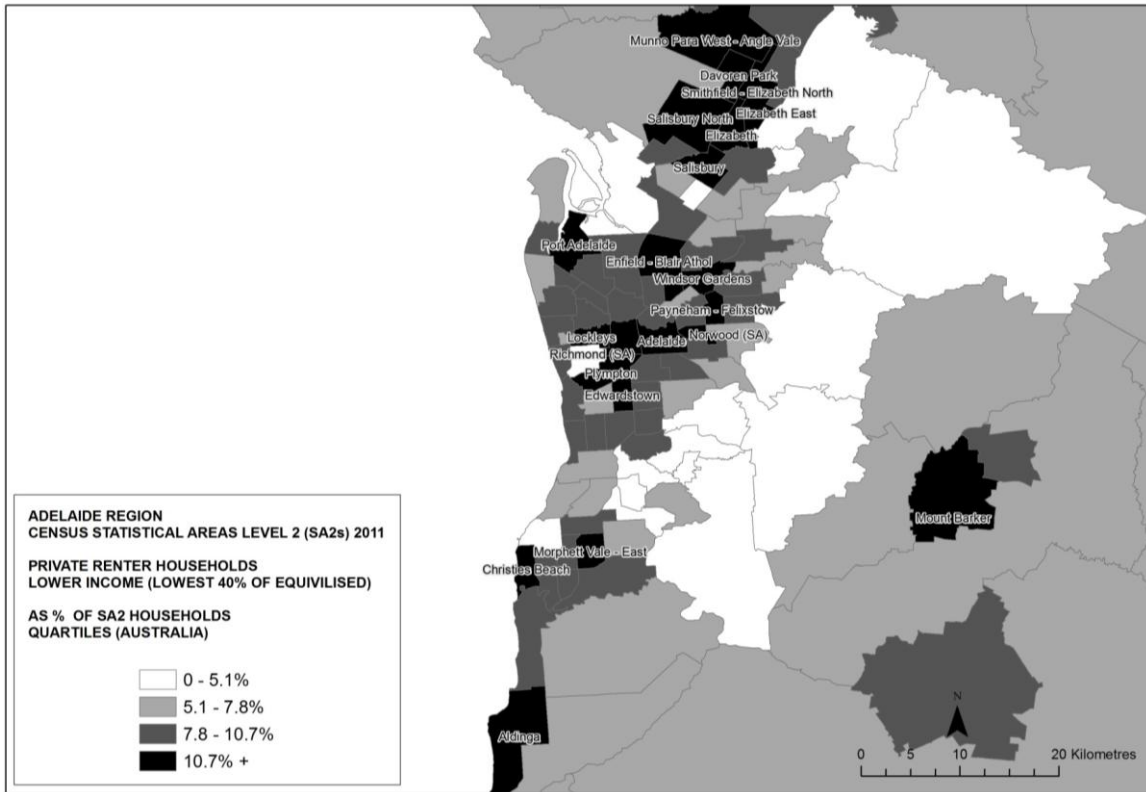


Figure A2: Brisbane map of low-income private renters by Statistical Area Level 2, 2011

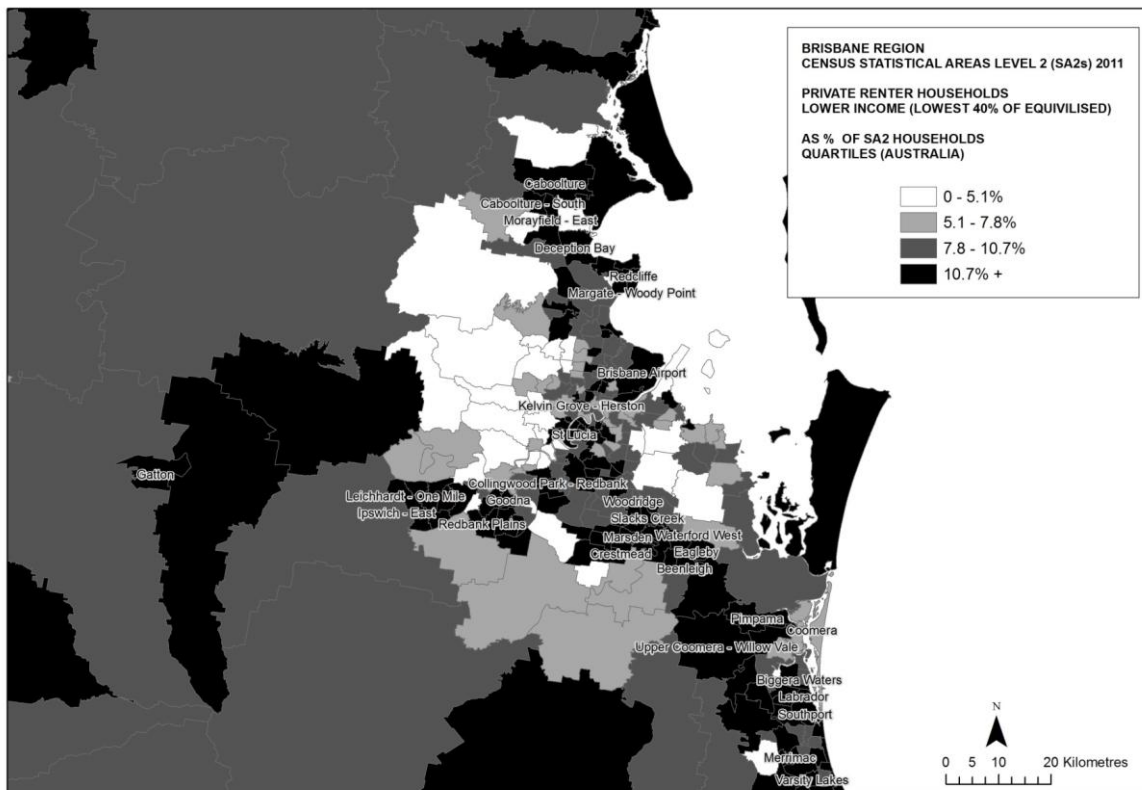




Figure A3: Melbourne, map of low-income private renters by Statistical Area Level 2, 2011

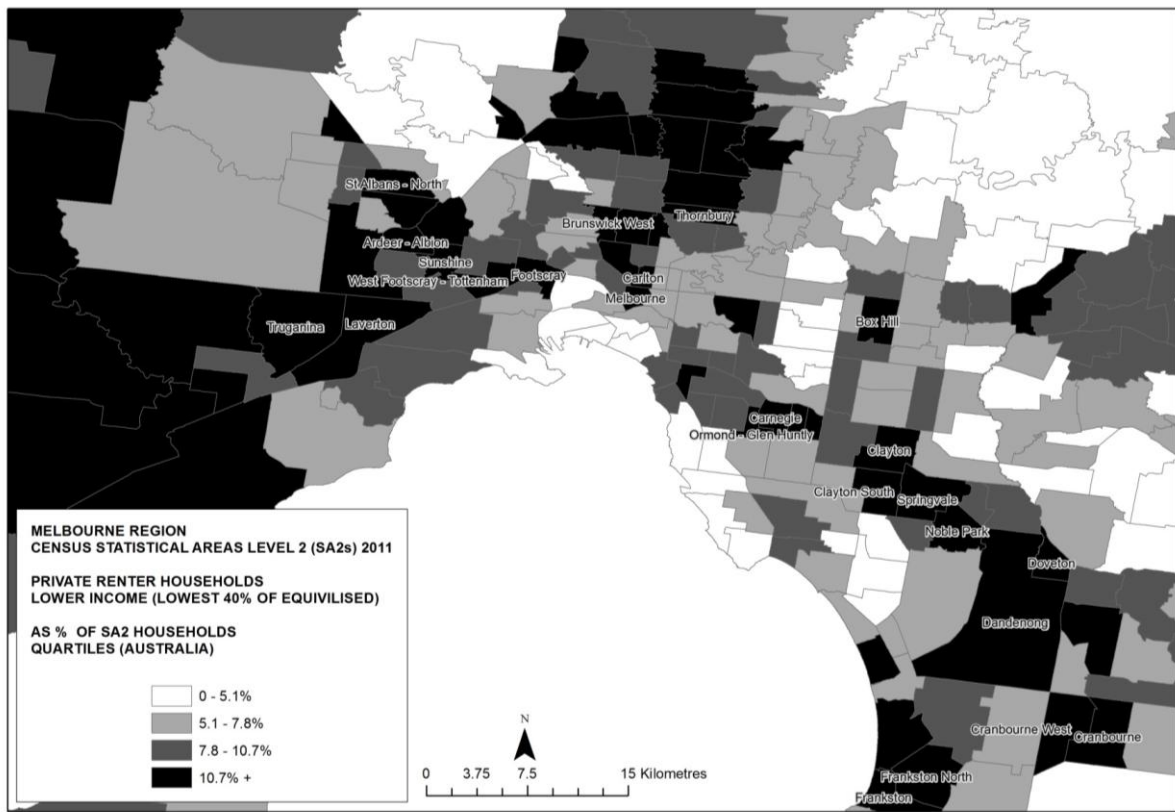


Figure A4: Perth, map of low-income private renters by Statistical Area Level 2, 2011

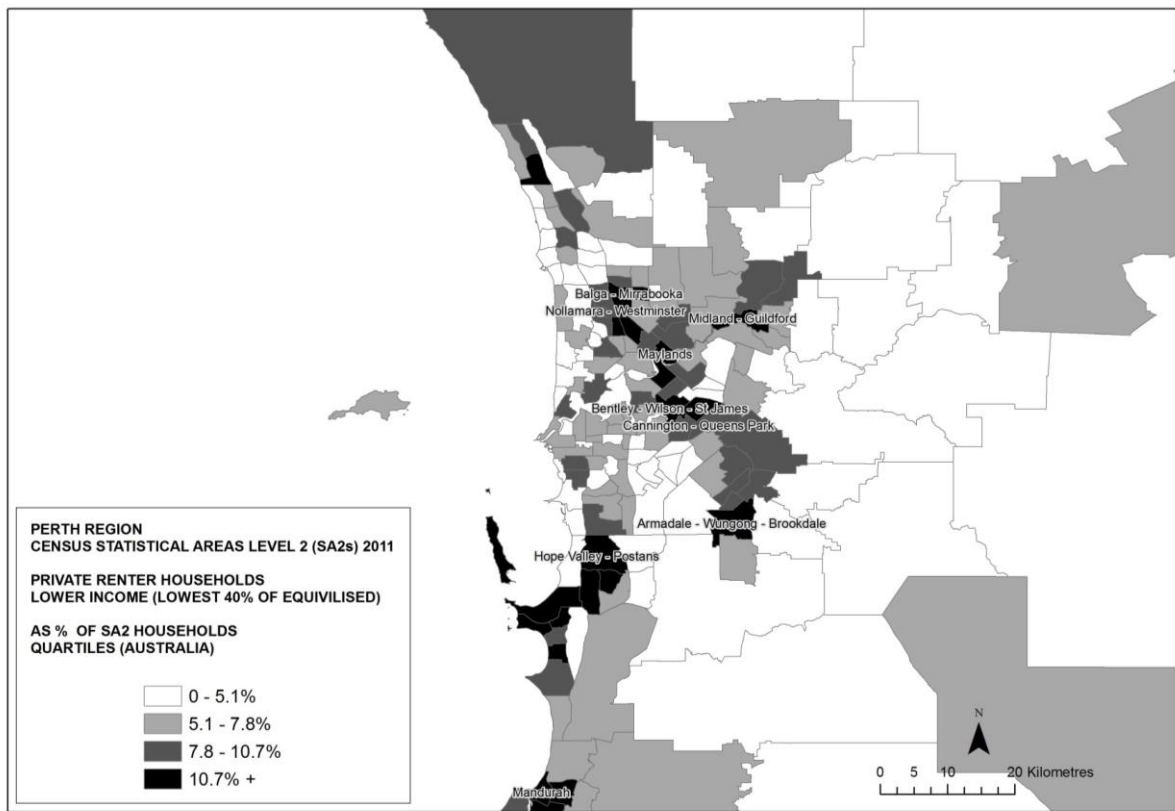


Figure A5: Sydney, map of low-income private renters by Statistical Area Level 2, 2011

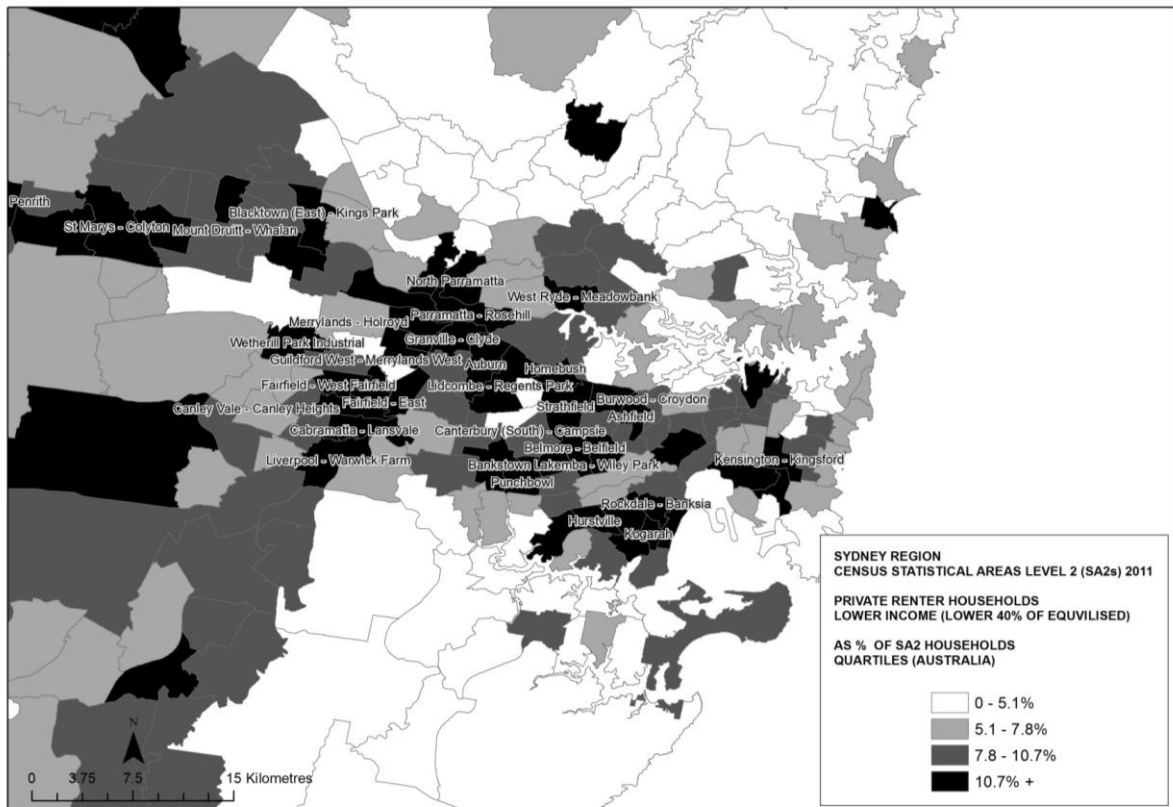
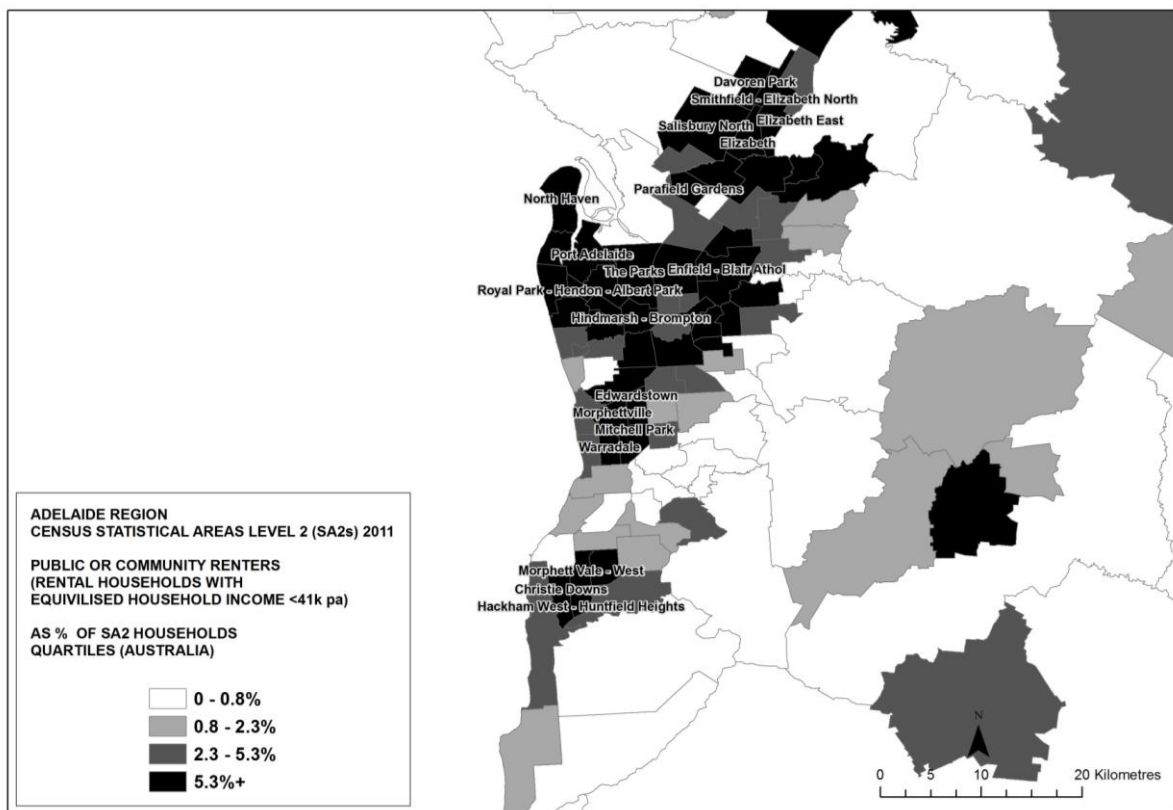
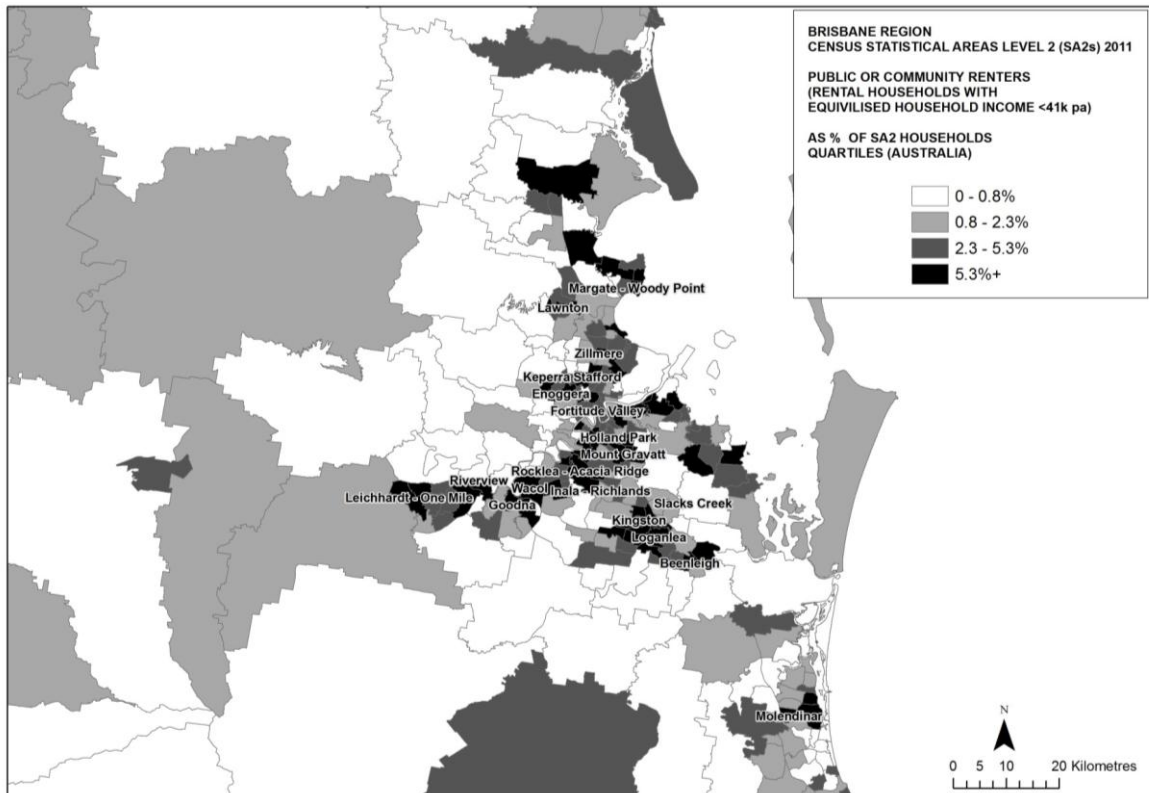


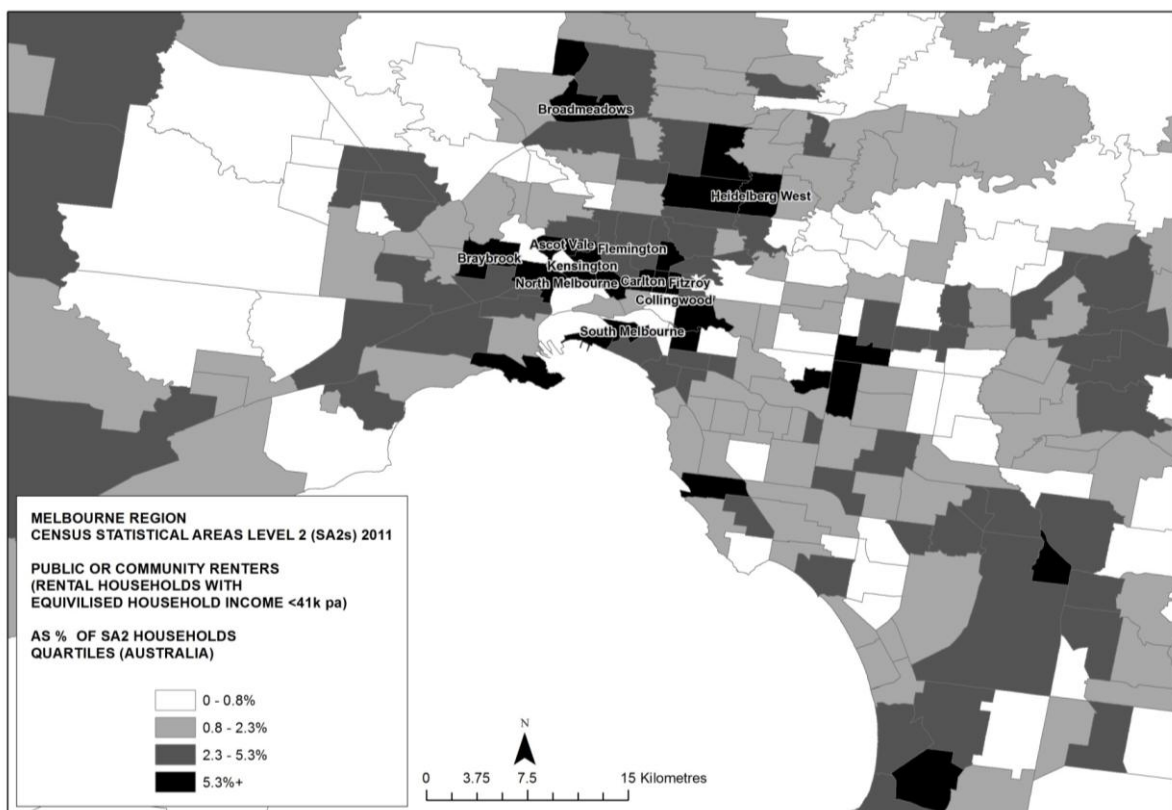
Figure A6: Adelaide, map of low-income public and community renters by Statistical Area Level 2, 2011



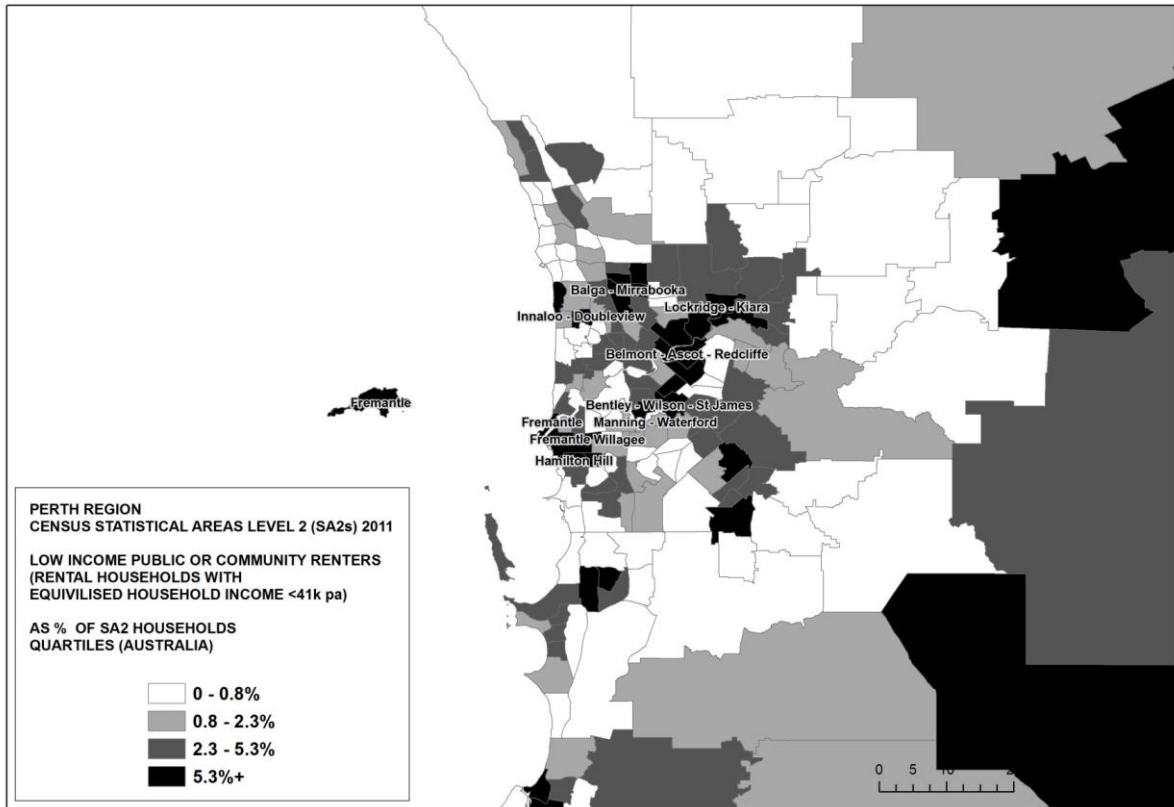
**Figure A7: Brisbane, map of low-income public and community renters by Statistical Area Level 2, 2011**



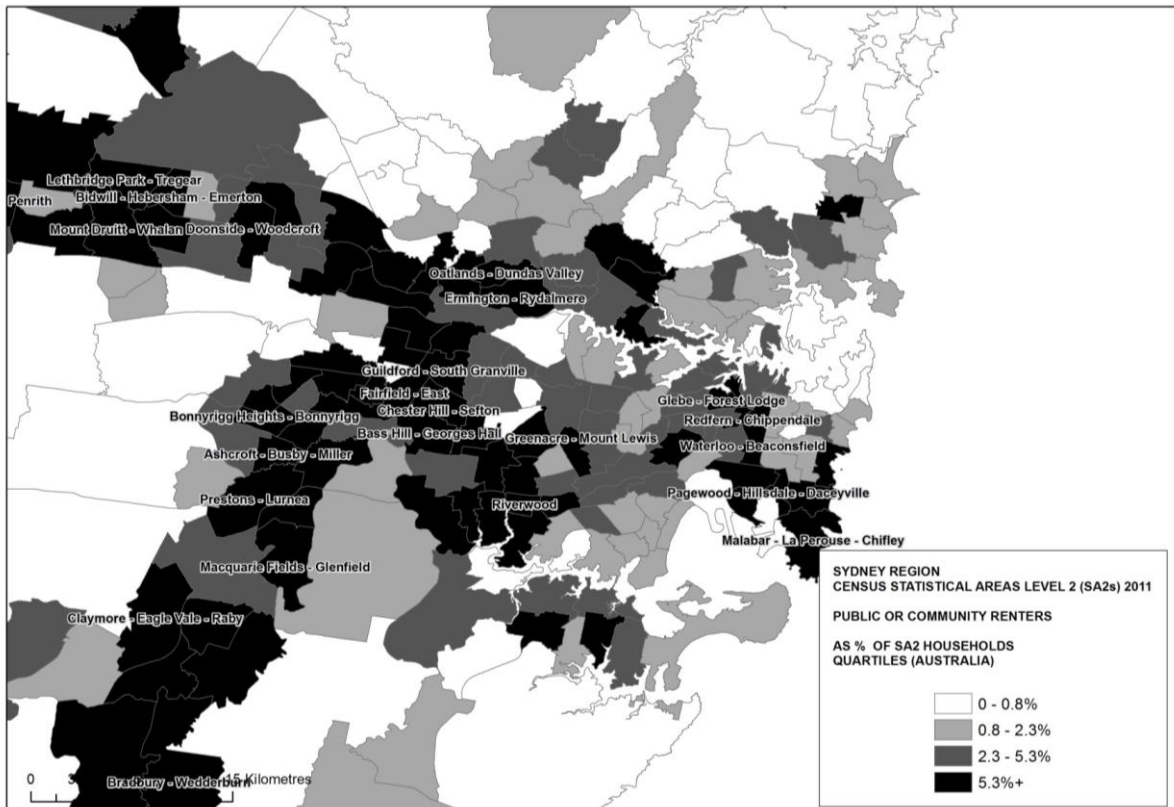
**Figure A8: Melbourne, map of low-income public and community renters by Statistical Area Level 2, 2011**



**Figure A9: Perth, map of low-income public and community renters by Statistical Area Level 2, 2011**



**Figure A10: Sydney, map of low-income public and community renters by Statistical Area Level 2, 2011**



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