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The Structural Drivers of Homelessness

Exploring the relationships between housing market, labour market,
demographics, service availability and homelessness in Victoria.

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Abstract

The specialist homelessness sector and state and federal governments have argued that tight housing markets are one of the key structural factors driving homelessness. Specifically it is argued that limited availability of low cost rental stock both causes homelessness and prevents its resolution. However, neither homelessness nor housing market research has provided population level evidence to directly support this claim. To address this gap this study explored the relationship between tight housing markets and rates of homelessness, using data from administrative sources, the Counting the Homeless Collection and the 2006 Census across Statistical Subdivisions in Victoria. The relationships between rates of homelessness and weak labour markets, demographic factors, and the location of homelessness services were also investigated. A key finding was that areas with relatively higher proportions of private rental stock and lower median rents had higher rates of homelessness. Median household income had a strong moderating effect on the relationship between rates of homelessness and median rents in an area, suggesting a critical relationship between private rental stock and household income. These findings are explained as the combined effect of sorting and an effective shortage of low-cost rental housing. Regression modelling showed that three key variables – the cost and amount of private rental housing and household income – could explain 45% of the variation in rates of homelessness across Victoria. This paper will contextualize these and other findings within the literature, and discuss policy implications and future research concerns.

Key words: homelessness, housing markets, magnet theory, labour markets, structural drivers, Victoria

Introduction

The homelessness service sector and governments alike (Department of Human Services, 2010; Commonwealth of Australia, 2008) often cite a direct link between homelessness and housing market conditions¹. They assert that a shortage of low-cost private rental means that those on low-incomes are squeezed out of the housing market, becoming homeless. Once homeless, these households experience significant difficulty re-entering the market. While this argument makes intuitive sense, there is a dearth of population level evidence to support this claim.

This paper examines the relationship between homelessness and housing market conditions and other factors. It provides timely evidence to enable the homelessness service sector, policy makers and government to make evidence-informed decisions about policy interventions to address homelessness. This evidence may also enhance the capacity for early intervention at a community level.

Literature Review

Research in the homelessness field acknowledges the need for an increased supply of affordable housing to address homelessness. However, the relationship between housing markets and homelessness has rarely been the specific subject of investigation. Rather, it is presented as important context for understanding homelessness or it is drawn out through examples and case studies (see for example Westmore & Mallett, 2011; Baker et al 2011; Judd, Kavanagh, Morris & Naidoo, 2004).

The housing economic research literature is often cited by homeless researchers, agencies and peak bodies arguing for a link between housing markets, low-income households and homelessness. This research shows an increase in affordability problems particularly for younger households and low-income renters and purchasers (Yates, 2008; Yates et al, 2007). It also shows that middle-income and younger households are tending to delay entry into home ownership because of affordability problems, creating a squeeze in the private rental market (National Housing Supply Council, 2008, 2010). This squeeze in the rental market is most acute for low-income households because of a shortage of low-cost stock compounded further by

¹ A number of federal policies assume that increased provision of affordable housing is needed to address the failure of the market to provide a sufficient quantity of low-cost rental housing and alleviate homelessness. For more info see: http://www.fahcsia.gov.au/sa/housing/progserv/homelessness/national_partnership_agreement/Pages/NPAHomelessness.aspx

competition from higher income households (Wulff et al, 2011). The options available for low-income households unable to purchase has been further limited by a decline in the amount of public housing per head of population (The National Housing Supply Council, 2008; Hall & Berry, 2004).

While this research informs the work of homelessness advocates and government, it does not directly examine homelessness. Aside from a handful of studies on the cost-effectiveness of homelessness interventions (for example: Flatau, Zaretsky, Brady, Haigh, & Martin 2008), the housing market drivers of homelessness have been largely ignored by housing researchers in Australia.

Research from the U.S. and Scotland

A number of researchers in the U.S. and one research team in Scotland have directly examined the relationship between housing markets and rates of homelessness. Using cross sectional studies a number of U.S. based studies found that tighter housing markets (housing markets with low vacancy rates and high median rents) are associated with higher rates of homelessness. Some of these studies also suggested a role for labour markets and demographic factors.

For example, Quigley and Raphael (2001) found that median rents, vacancy rates, and rent-to-income ratios were significant predictors of rates of homelessness across the U.S. and explained a large portion of the variance. While Lee, Price-Spratlen and Kanan (2003) found that higher median rents and higher proportions of single person households were significantly predictive of rates of homelessness across 335 metropolitan areas.

Elliot and Krivo (1991) reported that the availability of low-cost housing and expenditure on mental health were both strongly and significantly correlated with rates of homelessness across 60 metropolitan areas. They also found that the number of unskilled jobs and the percentage of female-headed households were significantly related to rates of homelessness. Looking at 23 metropolitan areas, Early (2005) found that people were more likely to sleep rough when the rents for lowest cost housing available are relatively high.

This is consistent with Honig and Filer's (1993) finding across a number of US cities that when the lowest 10% of rents were relatively high there was likely to be increased rates of homelessness in that city. They also found that growth in local labour markets

(i.e. a recent growth in the number of jobs in the private sector) was negatively related to homelessness.

Mansur, Quigley, Raphael and Smolensky (2002) found that increased income inequality was associated with increased rates of homelessness in California. A year earlier, using both national and Californian data, Quigley, Raphael and Smolensky (2001) found that higher rates of poverty were associated with increased rates of homelessness. Despite these findings, a number of studies did not find the unemployment rate of an area predictive of rates of homelessness (for example: Quigley, Raphael & Smolensky, 2001; Early & Olsen, 2002; Quigley & Raphael, 2001; Honig & Filer, 1993).

In Scotland, Kemp, Lynch and Mackay (2001) examined whether structural factors could explain variations in rates of homelessness. The second phase of their analysis took a time series cross-sectional approach and looked at variations in rates of homelessness over local areas at a number of different points in time. They found that unemployment and housing market variables impacted strongly on homelessness as measured by the number of applications to and acceptances by Scottish local authorities for accommodation under the homeless category.

In the earlier years of the cross sectional analysis (1981) vacancy rates were negatively related to homelessness rates. That is, homelessness was lower in areas with more available rental housing. However, in more recent years (1996) this trend reversed and areas with higher vacancy rates and lower rents had higher levels of homelessness.

Findings from U.S. and Scottish research suggest a role for housing market conditions in explaining variations in rates of homelessness and suggest that weak labour markets and some demographic factors may also be involved.

The spatial and social polarisation of housing and labour markets

The literature on spatial and social polarisation demonstrates that housing and labour markets in Australia interact in ways that clearly disadvantage low-income households and lead to income segregation. Two studies are of particular interest.

Wulff and Reynolds (2010) examined spatial polarisation as a more dynamic process by examining the effect of household mobility over time in Melbourne. These authors

found that household mobility contributes strongly to spatial polarisation. Over time households with lower incomes tended to move to areas with lower house sale prices and lower rents (areas where they could afford housing given their incomes) and that higher income households tended to move to higher cost housing areas. Over time, with the increasing polarisation of household incomes, this has meant increasing spatial polarisation of household income and housing costs. This has restricted low-income households' options for where they can live.

Yates and Wood (2005) found in Sydney that areas with higher proportions of low-rent stock were more likely to keep or increase low-rent stock over time – whereas areas with less low-rent stock were likely to have rents increase and so lose any existing low-rent stock over time. The authors argued that this occurs because the rising land values that occur with gentrification encourage landlords to increase the quality of a dwelling (through improvement and renovation) and thus increase its costs to rent. This results in dwellings “filtering up” and out of the low-cost stock pool. Conversely, neighbourhood decline has the opposite effect and may lead to existing properties filtering down to low-rent stock as maintenance and renovations are not undertaken as market rents decline. It seems likely that these findings are the product of the same processes uncovered by Wulff and Reynolds (2010).

Demographic and service availability as drivers of homelessness

The literature from the U.S. on housing markets and homelessness suggested a role for demographic factors in predicting rates of homelessness. There is also evidence from homelessness services and the homeless census that demographic and other factors influence homelessness.

Data from Australian homeless service providers and the Homelessness Census suggest four key demographic groups who are over represented in homelessness services or the homeless population and may be related to rates of homelessness²: indigenous people, single-person households, single-parent households and people under 25 (AIHW, 2011a; AIHW, 2011b; Chamberlain and McKenzie, 2008).

² While data from the most recent financial year reports from services is cited, the particular client demographics in question have remained relatively stable over at least the last 5-6 years.

In addition to demographic factors, it may be that the location of homelessness services affects the spatial distribution of people experiencing homelessness. Chamberlain and McKenzie (2008) comment that people experiencing homelessness tend to be highly transient and may move or gravitate towards areas where there are more services to assist them. This is a commonly held assumption - sometimes referred to as 'magnet theory' – where homelessness services are seen to act as a magnet attracting those experiencing homelessness to the area. This common assumption is also investigated in the present study.

Central Research question

This exploratory study aims to address these issues by investigating whether there is a relationship between rates of homelessness, housing market conditions, labour market conditions, the location of homelessness services and four key demographic factors in Victoria.

Method

Hypotheses

To address this research question, the following hypotheses were tested using a cross-sectional research design across Victoria only.

1. Are there higher concentrations of people experiencing homelessness in locations where housing markets are tight?
2. Are there higher concentrations of people experiencing homelessness in locations where labour markets are weak?
3. Is there is a relationship between homelessness rates and demographic and household factors?
4. Are people who are experiencing homelessness clustering in locations where homelessness services are more abundant?
5. Which variable or combination of variables best explains variations in rates of homelessness across Victoria?

Data sets

This project analysed Australian secondary datasets from a range of existing sources.

Datasets included:

- Census data (Australian Bureau of Statistics – ABS)
- Supported Accommodation Assistance Program (SAAP) data (Australian Institute of Health and Welfare – AIHW)
- Counting the Homeless collection (Chamberlain & McKenzie, 2008)³
- Rental report data (The Victorian Department of Human Services)

All data were requested or sourced for the 45 Statistical Subdivisions (SSDs) for Victoria in the 2006 census year. SSD was selected as the unit of analysis as this is the smallest unit of measurement at which the main data source on homelessness (the Counting the Homeless data) is available.

³ This data is taken from the most recent Counting the Homeless figures (Chamberlain & McKenzie, 2008). This count is currently undergoing a methodological review by the ABS. At the time of writing, however, this review has not been completed. It is planned that once the review is complete that previous releases will be recalculated and released in line with an updated methodology. But again, no data has been re-released at this stage and as such this data source is the best available count of the homeless population at this point-in-time.

Definition of homelessness in this study

The most widely used definition of Homelessness in Australia is the cultural definition developed by Chamberlain and McKenzie (1992). This definition is used in the Counting the Homeless data collection and is the definition of homelessness applied in this study.

Data items

The data items used are summarised below in Table 1.

Table 1: Data items by data source and unit of measurement

Data item	Data source	Unit of measurement
Homelessness indicators		
Homelessness rates	Chamberlain and McKenzie (2009)	Rate per 10,000 persons
Availability of assistance for homeless persons		
Number of active SAAP agencies	AIHW	Number of agencies
Housing market indicators		
Median weekly rent of new lettings in the private rental market	DHS – Rental Report data	Dollars per week
Newly privately rented dwellings affordable to those on Centrelink payments across all dwelling types	DHS – Rental Report data	Percent
Public housing	ABS 2006 Census	Percent of all dwellings
Dwellings being rented by real estate agents	ABS 2006 Census	Percent of all dwellings
Labour market indicators		
Unemployment rate	ABS 2006 Census	Percent
The number of persons over 15 not in the labour force	ABS 2006 Census	Percent of the total labour force
Income indicator		
Median household income	ABS 2006 Census	Dollars per week
Demographic indicators		
Persons aged under 25	ABS 2006 Census	Percent
Single-parent families	ABS 2006 Census	Percent of all households
Indigenous people	ABS 2006 Census	Percent
Lone-person households	ABS 2006 Census	Percent of all households

** Please note all data was sourced for each SSD for Victoria.*

Results

Results were conducted in two phases. First correlational analyses were undertaken. Second, regression analysis and partial correlations were undertaken. Some variables were not normally distributed and so non-parametric correlations were undertaken in the first phase of analysis. In the second phase natural log transformations were undertaken on all data to ensure parametric assumptions were met.

Phase 1: correlational analysis

A correlation matrix using Spearman's rho was generated (see Table 2). It highlights the relationships between housing market, labour market, demographic and service availability indicators. Statistically significant correlations are bolded.

Table 2. The correlations between variables

	Rate of homelessness per 10,000 persons	% of new lettings affordable to those on a Centrelink income	Median rent of new lettings	% of all dwellings being rented through real estate agents	% of public housing stock of all housing	Unemployment rate	Median household income (\$ weekly)	% of people not in the labour force of total labour force	Number of active SAAP agencies (n = 37)	% of indigenous persons	% of persons under 25	% of lone-person households	% of single-parent households
Rate of homelessness per 10,000 persons	1.000	.249	-.312*	.451**	.556**	.167	-.393**	.108	.057	.412**	-.211	.314*	-.126
% of new lettings affordable to those on a Centrelink income		1.000	-.900**	-.335*	.063	.060	-.795**	.467**	-.596**	.610**	-.179	.370*	-.206
Median rent of new lettings			1.000	.292	-.134	-.069	.880**	-.562**	.480**	-.631**	.285	-.518**	.285
% of all dwellings being rented through real estate agents				1.000	-.767**	.360*	.128	-.151	.727**	.178	.162	.162	.278
% of public housing stock of all housing					1.000	.554**	-.209	.046	.512**	.573**	.178	.307*	.350*
Unemployment rate						1.000	-.189	.366*	.501**	.209	.134	.143	.621**
Median household income (\$ weekly)							1.000	-.754**	.365**	-.596**	.448**	-.649**	.289
% of people not in the labour force of total labour force								1.000	-.132	.223	-.564**	.513**	-.175
Number of active SAAP agencies (n = 37)									1.000	-.240	.052	.114	.353**
% of indigenous persons										1.000	.151	.338*	.060
% of persons under 25											1.000	-.666**	.731**
% of lone-person households												1.000	-.510*
% of single-parent households													1.000

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed), N = 45 for all cells unless otherwise stated.

Hypothesis 1: *There are higher concentrations of people experiencing homelessness in locations where housing markets are tight.*

While the cost and supply of rental housing is important in predicting rates of homelessness, the relationship operates in the opposite way to what was expected. Higher rates of homelessness were associated with higher amounts of private rental stock ($\rho = .451$, $p = .002$, $n = 45$) and lower median rents ($\rho = -0.312$, $p = .037$, $n = 45$).

The rate of homelessness was also positively associated with the percentage of public housing in an area ($\rho = .556$, $p = .000$, $n = 45$). This suggests that there are higher rates of homelessness in relatively poorer areas.

Wulff and Reynolds (2010) found that household mobility plays an important role in understanding the spatial polarisation of households with low-income households increasingly moving to lower income areas to seek out low-cost housing. This self-selection and sorting (hereon referred to as the sorting hypothesis), may be the effect that is observed here. Households experiencing homelessness may be moving to areas where they have the best chance of purchasing housing within their means.

Hypothesis 2: *That there are high concentrations of people experiencing homelessness in locations where labour markets are weak.*

The findings presented did not support the hypothesis that rates of homelessness were related to labour market participation. Neither the unemployment rate or the percentage of those outside the labour force were related to rates of homelessness. However, there was a substantial effect for household income. Areas with lower median household incomes tended to have higher rates of homelessness ($\rho = -0.393$, $p = .008$, $n = 45$). This is consistent with the sorting hypothesis outlined above.

Hypothesis 3: *That there is a relationship between homelessness rates and demographic factors.*

The percentage of indigenous persons ($\rho = .412$, $p = .005$, $n = 45$) and the percentage of lone-person households ($\rho = .314$, $p = .036$, $n = 45$), in an area were related to rates of homelessness. Both of these demographic factors were also associated with lower household income. No relationship between the percentage of single-parent households and the percentage of persons under 25 and rates of homelessness was detected.

Hypothesis 4: *That people experiencing homelessness are staying in locations where homelessness services are more abundant*

There was no apparent relationship between the number of active homelessness agencies and rates of homelessness. The correlation matrix in Table 2 shows that homelessness agencies tended to be located in areas with higher amounts of rental stock but also higher median rents, higher median household incomes and lower affordability for those on Centrelink incomes. This in itself could affect the ability of services to resolve a person's homelessness.

The homelessness indicator for this research looks at the rate of homelessness relative to population. It controls for the effect of higher numbers of homeless persons in city areas by controlling for population density. However, services are well located if they are placed in areas where there are more people experiencing homelessness, regardless of population density. A significant strong correlation was found between the raw number of people experiencing homelessness and the number of homelessness agencies in an area ($\rho = .691$, $p = .000$, $n = 37$).

There was mixed support for the hypothesis that people experiencing homelessness stay in locations where there are more services. More data is needed to ascertain whether this effect exists.

Phase 2: Regression analysis and partial correlations

Regression modelling and partial correlations were undertaken to assess the fifth hypothesis: Which variable or combination of variables best explains variation in rates of homelessness in Victoria?

Results from the first phase of analysis⁴ suggest that people in communities with low-incomes may be more vulnerable to homelessness. The sorting hypothesis suggests that those on low-incomes gravitate to lower income areas with more abundant low-cost housing. To explore this relationship further, a hierarchical regression was

⁴ Having only 45 cases for between four and seven predictor variables created a problem during regression modelling with degrees of freedom. A test model was run anyway using the simple Enter method and at least one if not two variables from each of the four groups of variables – housing market, labour market, demographics and homelessness services. However, problems with multicollinearity were detected – specifically between household income and housing market indicators, and possibly also between household income and demographic indicators. This is consistent with the strong relationships between these variables reported in the correlation matrix. This meant that full modelling could not be undertaken reliably.

undertaken looking at the relationship between housing market indicators (supply and cost of private rental housing) and rates of homelessness, and the effect of household income on these relationships⁵.

To explore the relationship between demographic factors, household income and the rate of homelessness partial correlations were undertaken.

Selection of variables for the model

Given the very high correlation between median rents and the percentage of dwellings affordable to people on Centrelink incomes, they are good proxies for each other and only one of these variables needs to be included in the model. Given the ease and availability of median rent data for policy makers and service providers alike, median rents were used. While the percentage of public housing stock is correlated with rates of homelessness, the main argument from service providers and governments concerns private rental housing and so it was excluded from the model. Housing market variables were entered based on the order of the strength of their relationship to rates of homelessness as indicated by the correlations reported earlier. Household income was entered last to observe the effects on the housing market variables.

⁵ Hierarchical regression involves entering variables or sets of variables into a regression model sequentially and allows the researcher to see the change in the existing model that results from the inclusion of additional predictors. Reducing the number of predictors in the model and adopting this hierarchical approach deals with the problem of degrees of freedom given there are 45 cases and many variables and allows closer examination of multicollinearity issues.

Table 7. Regression model: The relationship between housing market factors and rates of homelessness once household income is accounted for

Step	Unstandardised Coefficients		Standardized Coefficients	Sig.	Correlations			Collinearity Statistics	R ²	Adjusted R ²	
	B	Std. Error	Beta		Zero-order	Partial	Part	VIF			
1	(Constant)	1.556	.554						.261	.243	
	Percentage of all dwellings rented through real estate agents	.735	.189	.511	.000	.511	.511	.511			1.000
2	(Constant)	4.955	1.420						.361	.331	
	Percentage of all dwellings rented through real estate agents	.917	.191	.637	.000	.511	.595	.592			1.158
	Median rent of new lettings	-.747	.290	-.341	.014	-.106	-.369	-.317			1.158
3	(Constant)	7.743	1.709						.452	.412	
	Percentage of all dwellings rented through real estate agents	.804	.184	.559	.000	.511	.563	.505			1.225
	Median rent of new lettings	.464	.539	.212	.394	-.106	.133	.100			4.542
	Median household income	-1.302	.500	-.609	.013	-.310	-.377	-.301			4.099

The regression modelling showed that:

- The percentage of rental dwellings rented through real estate agents was a significant predictor of rates of homelessness.
- Median rents were positively related to rates of homelessness but only when the amount of rental stock was included in the model (as shown by the change from zero-order to part and partial correlations).
- Household income was a significant negative predictor of rates of homelessness once the amount and cost of private rental stock was accounted for. That is, areas with lower household incomes have higher rates of homelessness.
- When median household income was included, this diminished the effect of median rents as a predictor and changed the sign of the coefficient. That is, once household income was accounted for, median rents exerted a positive effect on the rate of homelessness (the higher the average rent, the higher the rate of homelessness). This suggests that household income was moderating the effect of the cost of rentals on the rate of homelessness. Indeed, the strength of the zero-order correlations suggests that household income was more important than median rents as a predictor. Again, this is consistent with the sorting hypothesis.
- Together these three variables explained 45% of the variation in rates of homelessness across the state.

These findings suggest that the cost and amount of rental stock, and household incomes are important in explaining variations in rates of homelessness in Victoria.

To examine whether the relationship between demographic factors – percentage of indigenous persons and the percentage of lone-person households - and rates of homelessness is due to income, partial correlations were undertaken. Partial correlation shows the relationship between variables that exist once the variance from a specified other variable is removed or partialled out – in this case household income. The zero-order correlations are shown in Figure 1 and the partial correlations (when household income is removed) are shown in Figure 2.

Figure 1: Relationships between demographic factors, rate of homelessness and household income

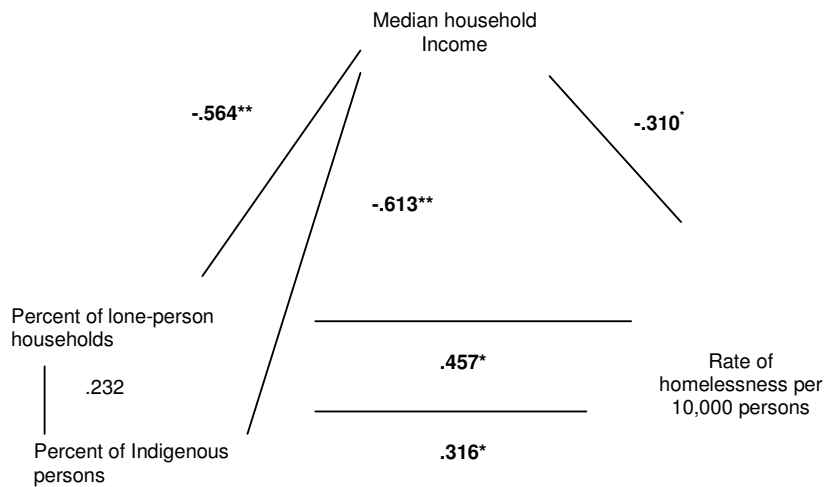


Figure 2: The relationship between demographic factors and rate of homelessness once the effect of household income is partialled out



Figure 1 shows that both demographic variables have a significant positive relationship to rates of homelessness.

However, once the effect of household income is partialled out from both the demographic factors and the rates of homelessness (Figure 2), the percentage of indigenous persons is no longer predictive of rates of homelessness. That is, the effect of the percentage of indigenous persons on rates of homelessness seems to be due to household income.

Partialling out the effect of household income on the percentage of lone-person households decreases the strength of the relationship to rates of homelessness, but it remains a significant predictor.

Discussion

Tight housing markets vs. sorting and effective shortages

Kemp, Lynch and Mackay (2001) found that tighter housing markets (higher rents and low supply) were related to higher rates of homelessness in the early years of their cross-sectional analysis (1981). However, in their 1996 cross-section they found that higher rental vacancy rates and lower rents were associated with higher rates of homelessness. Results from their later cross section are consistent with the findings from this study. The combined effect of sorting and an effective shortage of low-cost rental housing could explain these findings.

Wulff and Reynolds (2010) found that household mobility was important in explaining the spatial and economic polarisation of households. Low-income households tended to move to existing low-income areas where housing costs were lower (sorting). Over time this process leads to an increasing concentration of low-income households, and through neighbourhood effects (Yates & Wood, 2005), an increasing concentration of low-cost rental stock. This in part explains the findings in this study – people experiencing homelessness move to lower income areas where they have a better chance of accessing affordable housing, and communities with low-incomes therefore become associated with concentrations of homelessness.

But moving to areas with a more abundant supply of lower cost housing does not guarantee access to that housing. Using 2001 and 2006 Census data, Wulff et al (2011) found that there was an absolute shortfall – by some 138,000 dwellings – in the number of low-cost properties available for the number of low-income households. However, this shortfall worsened because a number of the properties (over 70,000) that were affordable to the lowest income quintile were actually occupied by higher income households. This true shortfall had worsened from 2001 to 2006.

These findings suggest that simply accounting for supply in the private rental market may not be sufficient. Having a higher proportion of rental properties with lower median rents does not mean that lower income households will be able to access them. Demand may still outstrip supply and there may be fierce competition for limited stock. There may also be low turnover in this stock (a factor not measured in this study). Panel data (or cross-sectional time series datasets) are needed to thoroughly explore these dynamics.

If this hypothesis could be substantiated empirically, it would support claims by service providers and governments that a shortage of low-cost private rental housing *available for low income households* both causes homelessness and prevents its resolution. It could also be key in informing policy and interventions in the private rental market and the advocacy work of service providers.

Household income

The relationship between median rents and rates of homelessness was moderated by median household income, suggesting that income may be more important than the cost of housing per se.

This finding is consistent with the view that it is those with low-incomes who are most vulnerable to homelessness. The strong relationships between income and housing market variables is consistent with the sorting hypothesis and underscores the importance of household income in both spatial polarisation and rates of homelessness.

These findings also suggest that relatively poorer communities are bearing the cost of homelessness.

Some U.S. based studies found that income was important in explaining rates of homelessness. Consistent with the findings presented here, Early (2005) found that there were higher rates of homelessness in areas with lower incomes. Further, Quigley, Raphael and Smolensky (2001) found that poverty (operationalised as very low-income) was positively correlated with rates of homelessness.

Mansur, Quigley, Raphael and Smolensky (2002) found that increased income inequality was associated with increased rates of homelessness. This may be because, as Matlack and Vigdor (2008) have argued, income inequality has the effect of increasing house prices even for the lowest cost housing when there is a low vacancy rate. Future research could examine whether income inequality in an area is related to rates of homelessness and the relationship between these factors and household income.

Areas with higher rates of homelessness also had higher percentages of public housing stock. Given the lower incomes of public housing tenants, this may well be related to income effect observed. Additionally, the location of public housing could also be related to spatial polarisation through “neighbourhood effects” (Yates and Wood, 2005) with higher amounts of public housing seen as undesirable and so reducing house prices and, incidentally, increasing the supply of lower cost private rental housing nearby.

Weak labour markets and rates of homelessness

While the unemployment rate and the percentage of persons outside the labour market were not related to rates of homelessness, the importance of household income in explaining rates of homelessness suggests that labour market factors may well be at work. It may be that the measures used in the present study were not appropriate indicators of the effect.

Some U.S. based studies did not find a relationship with rates of unemployment and rates of homelessness (Quigley, Raphael and Smolensky, 2001; Early and Olsen, 2002). However, other studies suggested a more nuanced analysis of this potential relationship.

For example, Elliot and Krivo (1991) found that the number of unskilled jobs was significantly positively related to rates of homelessness. While in Australia, Yates, Randolph and Holloway (2006) found that spatial polarisation of housing and labour markets affected workers in lower paid service industry roles (such as sales, hospitality and cleaning) more acutely. These findings suggest that homelessness and labour markets might be related in more complex ways than is reflected by the simple unemployment rate.

Demographic factors

Given the documented higher rates of homelessness amongst indigenous persons in both service-provider data (AIHW, 2011a, AIHW, 2011b), and the Counting the Homeless data (Chamberlain and McKenzie, 2008), it is not surprising that higher rates of homelessness were related to higher rates of indigenous persons in an area. However, it was interesting that controlling for household income cancelled out this effect – suggesting that the effect is primarily about household income. This is consistent with data from the Australian Institute of Health and Welfare (AIHW, 2011c) showing that indigenous Australians have lower incomes than the general population. To explore this relationship further, future research could explore whether increases in household income may significantly decrease the rate of indigenous homelessness.

Service provider data (AIHW, 2011a, AIHW, 2011b) and the findings from Lee, Price-Spratlen and Kanan (2003) suggested that the percentage of lone-person households might be related to homelessness. The findings of this study also supported this relationship. However, while the percentage of lone-person households was significantly related to household income, a significant effect remained once income was controlled for, suggesting that it is not simply income that is responsible for the relationship. Further research should investigate why the percentage of lone-person households is related to rates of homelessness independent of household income. It may be about access to private rental stock or inadequate supply of appropriate stock for this household type. There may also be particular affordability problems for one bedroom dwellings.

Despite high rates of homelessness among under 25s, youth was not related to variations in rates of homelessness. Service provider data suggests that many of the accompanying children in homelessness services (66%) are accompanying their

mothers to services when escaping domestic violence (AIHW, 2005). Family violence could be a major cause of youth homelessness and may explain the high representation of younger persons in the population. If family violence is a significant factor here, it seems plausible that housing market processes may impact differently on rates of homelessness for this group.

U.S. based research found a relationship between domestic violence and rates of homelessness but it was not investigated in this study as data was not available in a geographical unit consistent with the other datasets used. This is a priority for future research.

Does the location of homelessness services influence rates of homelessness?

No relationship was detected between rates of homelessness and the number of homelessness agencies in an area. The number of homelessness agencies in an area was correlated with the raw number of people experiencing homelessness. Future research should consider examining both the rate of homelessness and the raw number of people experiencing homelessness.

Conclusion : recommendations for policy and future research

The findings from this study suggest three key policy issues: access to housing, supply of housing and neighbourhood effects/income.

To the extent that the sorting hypothesis is correct and has an impact on homelessness, policy responses should be aimed at reversing the increasing economic and social polarisation. This could be done by increasing the supply of low-cost housing in higher income areas while at the same time guaranteeing access to this stock by low-income households. Such an intervention would address access issues and some neighbourhood effects but would need to be large scale to address supply issues. The Commonwealth's National Rental Affordability Scheme (NRAS) could be modified and expanded to achieve this aim.

Improving the services and amenity in areas with low-cost housing as well as targeting homelessness interventions in these areas may decrease the burden of dealing with homelessness for these communities.

Findings from this study could be built upon and strengthened in a number of important ways. These findings need to be re-tested with the re-release of the Counting the Homeless data after the methodological review. With the re-release of this data and the availability of the 2011 collection, a panel dataset could be constructed to examine changes over 2001, 2006 and 2011.

This research could also be expanded to examine these relationships nationally. This would give a larger sample size, allow a better test of the hypotheses and enable examination of regional and interstate differences.

Importantly, this is the first Australian study to empirically explore the relationships between the potential structural drivers and aggregate rates of homelessness. The findings presented suggest a whole program of research that, if undertaken, could usefully inform policy and service delivery responses to homelessness.

References

AIHW 2011a, *Government-funded specialist homelessness services SAAP National Data Collection, Annual report 2009–10, Australia, Canberra.*

AIHW 2011b, *Government-funded specialist homelessness services: SAAP National Data Collection annual report 2009-10: Australia appendix, SAAP National Data Collection Agency, Canberra.*

AIHW 2011c, *The health and welfare of Australia's Aboriginal and Torres Strait Islander people: an overview 2011.* Cat. no. AIHW 42. Canberra: AIHW. Viewed 28 October 2011 <<http://www.aihw.gov.au/publication-detail/?id=10737418989>>.

AIHW 2005, 'Female SAAP clients and children escaping domestic and family violence 2003-04'. *AIHW bulletin no. 30.* Cat. no. AUS 64. Canberra: AIHW.

Baker, E, Mallett, S, Beer, A, Batterham, D, Pate, A, Lester, L 2011, *Addressing homelessness amongst persons with a disability: Identifying and enacting best practice*, A FaHCSIA National Homelessness Research Project, The University of Adelaide, Adelaide.

Chamberlain C, & MacKenzie D 2008, *Counting the Homeless 2006*, ABS Cat. No. HOU 2050.0, Australian Census Analytic Program, Commonwealth of Australia, Canberra.

Chamberlain, C & MacKenzie, D 1992, 'Understanding Contemporary Homelessness: Issues of Definition and Meaning', *Australian Journal of Social Issues*, Vol 27(4), pp. 274–297.

Commonwealth of Australia 2008, *The Road Home: A National Approach to Reducing Homelessness (The White Paper)*, Commonwealth of Australia, Canberra.

Department of Human Services 2010, *A Better Place: Victorian Homelessness 2020 Strategy - new directions to reduce homelessness in Victoria.* Melbourne.

Early, D 2005, 'An empirical investigation of the determinants of street homelessness', *Journal of Housing Economics*, Vol 14, pp. 27-47.

Early, D & Olsen, E O, 2002, 'Subsidized housing, emergency shelters, and homelessness: an empirical investigation using data from the 1990 census', *Advances in Economic Analysis and Policy*, Vol 2 (1), article 2. pp. 1 – 34.

Elliott, M & Krivo, L J, 1991, 'Structural Determinants of Homelessness in the United States', *Social Problems*, Vol 38(1), pp. 113-131.

Flatau, P, Zaretsky, K, Brady, M, Haigh, Y & Martin, R, 2008, *The cost-effectiveness of homelessness programs: a first assessment, Volume 1 – main report*, for the Australian Housing and Urban Research Institute, Western Australia Research Centre, AHURI Final Report No.119, Western Australia.

Hall, J & Berry, M 2004, *Sustainable financing for public housing authorities*, AHURI research and policy bulletin, Issue 41.

Honig, M & Filer, R K 1993, 'Causes of Intercity Variation in Homelessness', *The American Economic Review*, Vol 83, no 1, pp 248 – 255.

Judd, B, Kavanagh, K, Morris, A & Naidoo, Y 2004, *Housing options and independent living: sustainable outcomes for older people who are homeless*, AHURI Final Report No. 62, Australian Housing and Urban Research Institute, UNSW-UWS Research Centre, Sydney.

Kemp, P A, Lynch, E & Mackay, D 2001, *Structural Trends and Homelessness: A quantitative analysis*, Homelessness Task Force Research Series, Scottish Executive Central Research Unit, Scotland.

Lee, B A, Price-Spratlen, T & Kanan, J W 2003, 'Determinants of homelessness in metropolitan areas', *Journal of Urban Affairs*, Vol 25(3), pp. 335–355.

Mansur, E T, Quigley, J M, Raphael, S & Smolensky, E 2002, 'Examining policies to reduce homelessness using a general equilibrium model of the housing market', *Journal of Urban Economics*, Vol 52, pp. 312-340.

Matlock, J L & Vigdor, J L 2008, 'Do rising tides lift all prices? Income inequality and housing affordability', *Journal of Housing Economics*, Vol 17, pp 212 – 224.

National Housing Supply Council 2008, *State of Supply Report*, Commonwealth of Australia, Canberra.

Quigley, J M & Raphael, S 2001, 'The economics of homelessness: the evidence from North America', *European Journal of Housing Policy*, Vol 1(3),pp. 323–336.

Quigley, J M, Raphael, S & Smolensky, E 2001, 'Homeless in America, Homeless in California', *The Review of Economics and Statistics*, Vol 83(1), pp. 37 – 51.

Westmore, T & Mallett, S 2011, *Ageing in what place? The experience of housing crisis and homelessness for older Victorians, Final Report*, Hanover Welfare Services, Melbourne.

Wulff, M & Reynolds, M 2010, *Housing, inequality and the role of population mobility*, AHURI Final Report No.158, Australian Housing and Urban Research Institute, Melbourne.

Wulff M, Reynolds M, Arunachalam D, Hulse, K & Yates J 2011, *Australia's private rental market: the supply of, and demand for, affordable dwellings*, AHURI Final Report No. 168, for the Australian Housing and Urban Research Institute - Swinburne-Monash Research Centre, Melbourne

Yates, J 2008, 'Australia's housing affordability crisis', *Australian Economics Review*, Vol 41 (2), pp. 200-214.

Yates, J, Milligan, V, Berry, M, Burke, T, Gabriel, M, Phibbs, P, Pinnegar, S, & Ran, B, 2007, *Housing affordability: a 21st century problem, National Research Venture 3: Housing affordability for lower income Australians*, for the Australian Housing and Urban Research Institute, AHURI Final Report No. 105, Sydney.

Yates, J, Randolph, B, Holloway, D & Murray, D 2006, *Housing Affordability, Occupation and Location in Australian Cities and Regions*, Final Report, Australian Housing and Urban Research Institute, Melbourne.

Yates, J & Wood, G 2005, 'Affordable Rental Housing: Lost, Stolen and Strayed', *Economic Record*, Vol 81(Special Issue), pp S82-S95.

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