Final Report

Examining the links between housing and nine key socio cultural factors

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

1. This paper reports findings from an empirical analysis on the relationships between housing and nine 'non housing outcomes': community; crime; poverty; social exclusion; perceived well-being (subjective quality of life); anomie; health; education; and labour force participation.

2. The analysis is predicated upon a belief voiced by housing policy makers that improvement in people's housing circumstances may, for example, increase perceived well-being, decrease experiences and fears of crime, and improve health. While this is a plausible supposition, there is little direct empirical evidence to demonstrate these outcomes.

3. The relationships between housing and non housing outcomes are examined using survey data drawn from a sample (N=1347) of South East Queensland households. Since these data relate to one point in time, it is not possible to examine changed outcomes for those who have received housing improvements. Instead, we undertake a cross-sectional analysis and focus on differences in these outcomes between tenure groups. Of interest is whether those who receive housing assistance have non housing outcomes that are similar to, or different from, other tenure groups, and, in particular, whether those living in public housing and those low income private tenants in receipt of government benefits have better non housing outcomes (e.g. a higher perceived quality of life) than low income private tenants who are not in receipt of government benefits.

4. If housing assistance has a significant impact upon recipients' lives, we could assume that there would, in some instances, be no statistically significant differences in outcomes between those in receipt of government assistance and other tenure groups, but especially when compared with low income private tenants who receive no government assistance.

5. We found that public housing tenants and low income private housing tenants in receipt of government assistance had the poorest non housing outcomes, with the exception of community. Public housing tenants were found to reside in the strongest communities, with 'community' being defined here according to the number of key ties concentrated within the local area. However, this presence of a strong community may be the product of disadvantage since this has the effect of concentrating life within the local area.

6. When we compare public housing tenants and low income private tenants in receipt of government assistance with low income private tenants not in receipt of this assistance, the former two were found to have poorer non housing outcomes. This constant is a product of differences between the tenure groups. Low income households receiving no government assistance lacked the level of disadvantage that was present among those who received assistance; a disadvantage that clearly determined the assistance received.

7. In this way, then, when we identify different tenure groups we are pinpointing individuals and households with different characteristics. Thus, differences are a product of the characteristics of the people residing in these various forms of tenure, not the buildings themselves.

1. INTRODUCTION

1.1 This paper reports findings from an empirical analysis of the relationships between housing and nine 'non housing outcomes'. These nine socio economic and socio cultural factors are community, crime, poverty, social exclusion, perceived well-being (subjective quality of life), anomie, health, education, and labour force participation.

1.2 The analysis is predicated upon a belief voiced by housing policy makers – and reported in the March 2000 AHURI Research Agenda - that good housing, including that acquired through government assistance, has positive social, psychological, cultural, and economic outcomes for individuals and households. There is the supposition that an improvement in people's housing circumstances will, for example, increase perceived well-being, decrease experiences and fears of crime, and improve health. While this seems plausible, there is little direct empirical evidence to demonstrate these outcomes. There is certainly indirect evidence, the most notable being the level of poverty before and after housing costs are taken into account.

1.3 Of particular interest here is the impact of government housing assistance on these outcomes, specifically for public housing tenants and those private housing tenants who receive rental assistance. The question we attempt to answer is as follows. To what extent does assistance improve the quality of life for these two tenant groups? As an initial response, albeit in a superficial way, we could say that it seems as though public housing tenants, as low-income vulnerable households whose housing problems have been 'solved', should experience non-housing outcomes (e.g. in terms of health and well being) at a rate little different from that of other tenure groups. Yet available housing research seems to contradict this supposition, because public housing tenants suffer many serious maladies. Along with low-income households residing in private rentals, they are more likely, for example, to experience poverty and social exclusion (see AHURI report http://www.ahuri.edu.au/pubs/positioning/pp_housingnon.pdf). Thus, rather than having improved non-housing outcomes, the *overall* social circumstances under which many of these people live seems unchanged. This suggests, then, that housing *in itself* may not have a major positive impact, with the sources of people's difficulties more than likely resting elsewhere. The most likely sources are the broader social circumstances – such as those related to income - in which these people find themselves. This means that an improvement in these broader circumstances is more likely to bring positive non-housing outcomes, than an improvement in housing *per se.*

1.4 These comments do not deny the fundamental importance of housing in the well-being of individuals and households. What the research literature suggests, and what our research findings given below imply, is that problems householders experience are likely to have more fundamental causes than those tied specifically to housing.

1.5 Still, it could be demonstrated that improvements in health, perceived well-being, standard of living, etc, do occur after households receive government housing assistance, either in the form of a government-owned dwelling, or through rental assistance. However, the change may be relative. For example, new public housing tenants may still be poor and have more health problems than other tenure groups, but the severity of their problems may have declined. In this way, it can be said that housing has clear non-housing outcomes, even if

householders' position with regard to the problem remains unchanged relative to other housing groups and the population as a whole.

1.6 The critical issue, then, is the magnitude of the change: whether it is fundamental (e.g. moving from a low to a high perceived quality of life), or whether the change is relatively small (e.g. perceived quality of life is low, but it has improved).

1.7 It is important to note that this paper examines the nature of the *relationships* between housing and the nine non housing outcomes. In other words, we are studying housing groups' circumstances at one point in time. We are not examining the nine non housing outcomes after improvements in housing have been made for those living in sub standard accommodation. Such an undertaking would require longitudinal data, preferably that collected by a panel study, like the Household, Income and Labour Dynamics in Australia (HILDA) survey, the first stage of which is currently under way. Panel studies regularly interview the same individuals or households over an extended period, even decades. This therefore allows change to be measured. Our data, however, do not enable us to measure different tenure groups' changing circumstance because they were collected by means of survey research and at one point in time. We cannot, then, discern the effects of improved housing circumstances. Nevertheless, our data do enable us to identify the nature of the relationships between housing tenure and the nine non housing outcomes. It allows us to identify differences between tenure groups in terms of quality of life, health status, experience of crime, and so on, and then impute the role of housing in structuring these outcomes.

1.8 Thus, there are two ways in which the housing-non housing outcomes question can be answered. The first and most appropriate method is to study a group of poorly housed people before receipt of government assistance – either public housing or rental assistance - and then study them at various points in time after they have received assistance. This panel study would, of course, need to control for the independent effects of other influences on non housing outcomes, such as improved education, employment, increased income, etc. The second way, and the one employed here, is to undertake a cross sectional (comparative) analysis of different tenure groups according to non-housing outcomes. If there were no persistent marked differences between those in receipt of government housing assistance and all other tenure groups, then it would be possible to suggest that housing assistance had a major impact. However, if there were persistent marked differences between those in receipt of government housing assistance and all other tenure groups, then it would be possible to suggest that, *overall*, housing assistance would not have had a major impact.

In undertaking this analysis, we make a particular distinction between public housing tenants and low income private tenants in receipt of government assistance, on the one hand, and low income private tenants who receive no government assistance, on the other hand .

1.9 In addition to examining the nature of the relationships between housing and the nine outcomes, we attempt to identify the social forces – the determining factors – that bring about positive outcomes: those forces that effect a high quality of life; positive health; lack of fear of crime; no experience of crime; and so on. For example, are these outcomes a consequence of low income or poor job skills? In searching for these predictors, we seek to understand whether there are any tenure groups that have this determining influence.

1.10 As a corollary to these two central goals, we also examine each tenure groups' attitudes towards their residential area; towards the environmental and material resources offered by the 'community' (essentially suburb) in which they live. Since housing is frequently also discussed in terms of local circumstances – the 'local community' - we feel that these additional issues were worth considering. We focus on environmental quality, access to shops, the adequacy of recreational services, infrastructure services, education services, health services, attitudes towards cost of housing and cost of living, transport needs (cars and public transport), and civic engagement, the latter referring to the extent to which they were politically involved.

1.11 This is the final of four reports to be produced from an AHURI-funded project titled *An Empirical Examination of the Relationship between Housing Systems and Non Housing Outcomes.* The first report, the positioning paper **(*The Links Between Housing and Nine Key Socio Cultural Factors: A Review of the Evidence*)** (see AHURI report http://www.ahuri.edu.au/pubs/positioning/pp_housingnon.pdf) was produced in December 2000. The Work in Progress paper was produced in February 2001 and the Findings Paper in April 2001.

This paper is divided into four parts. The next section briefly summarises the main issues surrounding the relationships between housing and non housing outcomes. The second main part discusses the data and the methodology employed. The third reports the findings from the empirical analysis. The fourth briefly discusses the policy implications arising from the findings.

2. HOUSING AND ITS RELATIONSHIP WITH NINE NON-HOUSING OUTCOMES: THE EVIDENCE

2.1 This section summarises available evidence on the relationship between housing and the nine non-housing outcomes empirically examined below, and it does this by drawing upon information reported in our Positioning Paper (see AHURI report http://www.ahuri.edu.au/pubs/positioning/pp_housingnon.pdf). This covered both the Australian and international literatures. The question to be tackled, both in reviewing published research reports and from our own empirical research, is whether housing has an *independent* effect on the lives of individuals and households and, if it does, we need to understand the nature of this impact.

2.2 There is surprisingly little *direct* evidence on housing's independent effects on well-being, a result that seems to be a product of the way research has been conducted. Longitudinal analyses (specifically panel studies) – research that is costly and time consuming – have not been conducted, for only these studies would enable an answer to be found to the question of whether housing improvements have an independent effect on well-being. Households' and individuals' socio economic circumstances prior to improvements in housing would need to be recorded, then changing circumstances would need to be observed at intervals following housing improvements. In making these observations, it would be necessary to control for the independent effects of circumstances other than housing, such as those resulting from retraining, from increases in household income, from changed marital circumstances, from new employment opportunities, and so on.

2.3 With reference to our nine non-housing outcomes, the bulk of research on their relationship with housing has focused on four main areas: health; crime; poverty; and social exclusion. Research on education and labour markets follow in importance, though this work has been relatively minor by comparison. There is relatively little empirical research on community, at least defined in terms of 'community cohesion', and virtually nothing on anomie or perceived quality of life.

2.4 The evidence we have on the nine relationships cover the following issues: the negative cultural, economic, health, social, and psychological impacts of bad housing; the level of crime, poverty, and social exclusion in public housing areas and other low income areas; the presence or absence of community in these areas; low income residents' labour market position; and the educational attainment of children in different types of housing and tenures.

2.4.1. A number of public housing areas and other low-income private housing districts have been shown to be places with high crime rates (invariably minor, rather than serious, crimes), and places over represented by people with criminal records. Yet, these areas do not, in themselves, cause crime or create criminals; the situation relates to the characteristics of the populations.

2.4.2 Bad housing certainly causes ill health, although the physical problems involved tend to be minor. Cold, dampness, and mould persistently pose the greatest health risks in cold climates, and housing improvements that remove these problems remove these negative health effects. Mental health problems have been shown to be associated with homelessness, overcrowding, certain types of emergency accommodation, and low-income high-rise apartments.

2.4.3 Poverty is clearly linked with certain forms of tenure. Although more of the Australian poor live in private rentals than any other form of tenure, poverty rates are higher among public housing tenants.

2.4.4 Social exclusion is location-specific, appearing in the most deprived parts of cities, including certain public housing areas. These areas house people who suffer from a combination of problems: unemployment, ill health, poor housing, and the effects of crime, low income, and family instability. Such problems, together, have theeffect of excluding these individuals and households from mainstream society, with marginalisation therefore being a product of this combination of serious social problems.

2.4.5 Research on housing and labour markets essentially focuses on the disjuncture between where low income housing is located and job locations. It has focused on the specific problem of employment opportunities for public housing tenants, relative to where jobs are located; the significance of residential mobility for accessing jobs; the link between occupation and tenure; and the effects of the new economy on the jobs-housing relationship.

2.4.6 Research on housing and education focuses on two issues: the negative effects of poor quality housing on children's learning, with some impact being demonstrated; and on the link between tenure and educational attainment, with children living in owner occupier housing being found to be the most successful students. In our research, we focus on respondents' level of education rather than on children's level of educational attainment; we do not have data on the latter.

2.4.7 If community is defined as close knit ties among people sharing a locality – a neighbourhood, suburb, etc – then community is more likely to be present in low income areas, and specifically in working class areas. This is primarily tied to needs for mutual support. Community is important in today's policy climate because it is viewed as a mechanism for aiding the implementation of policies encouraging self-sufficiency and mutual assistance. Yet, its value in this regard is still to be assessed.

2.4.8 No specific research has focused on either the relationship between housing and anomie, or housing and residents' perceptions of their quality of life.

2.4.9 Anomie (or 'normlessness') refers to situations whereby the rules governing behaviour are unclear. It occurs under conditions of rapid social change – such as that experienced today – when the old rules (those of the earlier era) break down, but the new rules (those of the contemporary era) have not been fully formed. This condition of normative confusion precipitates behaviour (e.g. suicide, substance abuse, corruption, and family dissolution) that evokes moral comment. Anomie is indicative, then, of widespread disillusionment, malaise, and an absence of social integration, all of which point to behavioural problems. Its presence in Australia today is reflected in the predicament of young unskilled men living in low income households who have little prospect of finding well paid, secure employment, and who experience high levels of violence and high suicide rates.

3. DATA AND METHODOLOGY

3.1 To test the relationships between housing and the nine non-housing outcomes – community, crime, perceived well-being, anomie, health, education, labour force participation, poverty, and social exclusion – we draw upon data collected in 1997 as part of the South East Queensland (SEQ) Quality of Life Survey. This was an ARC-funded collaborative research project (1995-7) involving academics from Griffith University, the Queensland University of Technology, and The University of Queensland, with the Queensland Government's Statistician's Office being the collaborative partner. The chief investigators were Robert Stimson (then Queensland University of Technology, but now The University of Queensland), Rodney Simpson (Griffith University), John Western and Patrick Mullins (The University of Queensland).

3.2 This survey, examining quality of life in the South-East Queensland region, was a major component of a larger spatially based study concerned with urban growth and development and known as the 'Urban Metabolism' project. The project focused geographically on an area from Coolangatta in the south, to Noosa in the north, and Toowoomba in the west.

3.3 Between February and May of 1997 a computer assisted telephone interview survey was conducted using random digit dialling. A sample of 1347 useable responses was obtained from an initial pool of 4,500 telephone numbers. Approximately 25 per cent of these numbers were out of scope, being either the numbers of business firms, government agencies, or non government organisations. A further 5 per cent, despite five call-backs, were unanswered numbers. The in scope item pool was therefore 3,150. With 1,347 useable responses, the response rate was 43 per cent of the final pool of 3,150 in scope numbers.

3.4 The survey instrument used in the study was developed over a period of 12 months and incorporated a variety of measures of quality of life. These included:

- individuals' perceptions of the quality of their lives as residents in the SEQ regionattitudes towards urban, economic and social development, conservation and the provisioning of services and facilities
- the extent of civic engagement
- levels of satisfaction with neighbourhood in which respondents live and with various aspects of their lives more generally
- measures of current health status, including a measure of depression
- the nature of respondents attachment to the paid workforce
- nature of transportation to and from work and shopping centres
- type of dwelling in which respondents live
- experience of crime and fear of crime
- extent of social support networks
- activities completed in spare time
- recent consumption habits
- demographics: household structure, country of birth, marital status, level of education, occupation, industry, and personal and household income.

3.5 The key variables from this survey that are used in our analysis can now be considered in turn.

3.5.1 Housing

Housing is defined here according to tenure and housing quality. 'Tenure' distinguishes households according to whether they were homeowners ('owner occupiers'), home purchasers ('purchasers'), low income private housing tenants in receipt of government assistance (households in the bottom 35% of household income who are in receipt of any government benefits), other low income private tenants (those in the bottom 35% of household income but not in receipt of government benefits), other private housing tenants, public housing tenants, and those households living under other forms of tenure. The latter include those in defence force housing, in a dwelling owned by a relative, and in church-owned dwellings. Since we did not collect data on private housing tenants in receipt of rental assistance specifically, we have used 'low income private renters in receipt of any government assistance' as a proxy for this group.

It is important to note that this definition of tenure, and its empirical application, differs from that used in our Work in Progress Paper. There we defined low-income private tenants (in receipt of government assistance) as those in the bottom 25% of household income who were in receipt of any government benefits. Moreover, in this earlier analysis we did not have the category 'other low income private housing tenants'; households in the bottom 35% of household income and not in receipt of government benefits. Now, all low-income private tenants are defined as those living in households located in the bottom 35% of household income. We lifted the cut off point to 35% because there were insufficient numbers of households in the category 'low-income private tenants' if we used the 25% cut off. Yet, even with this 35% cut off, the numbers (32) are rather small.

A measure of housing quality was constructed from the following variables: the number of bedrooms (1 to 2 versus 3+); material used (timber/brick/other); floor construction (timber/concrete/other); insulation (yes/no); air conditioning (yes/no); number of toilets (1/2/3+); age of dwelling (less than 20 years/20-50/50+); swimming pool (yes/no).

3.5.2 Community

Community is defined by the extent to which life is localised; that is, concentrated within residents' suburbs. It was measured using four variables. The first is the number of intimates (e.g. friends, kin, neighbour-friends) living in respondents' suburb. Respondents were asked to identify up to four intimates, after having been asked the following question (Q66).

> Now thinking about people who do NOT live in your household: outside working hours whom do you see most often socially? What is the relationship? Where do they live? How often do you see them?

The second part of the measure is based on whether they did their main shopping within their suburb. The third part is whether their doctor is based within their suburb. Finally, the fourth part of the measure centred on whether they had attended, in the previous five years, a public meeting about an issue in their local area. Each respondent scored one for each intimate living locally (thus, a maximum of four could be scored) and one each if they shopped locally, if their doctor was locally-based, and if they had attended a local public meeting. Thus a maximum of seven could be scored, with the scale ranging from zero - for those who had no

local intimates, who shopped outside their suburb, went to a doctor located elsewhere, and had not attended a local public meeting – to seven.

3.5.3 Crime

Crime is measured in two ways. First, from responses to three questions on fear of crime and, second, from responses to three questions on respondents' experiences of crime. The three on fear of crime (Q009D, Q009E, and Q009F) were part of a larger question (Q9).

> I'm now going to read out some statements that refer to you, your neighbourhood, and your neighbours. Please indicate how much you agree or disagree with each statement.

- Vandalism is a problem in this neighbourhood.
- Breaking and entering is a problem in this neighbourhood.
- I feel safe walking around this neighbourhood after dark.

The three questions on experiences of crime are as follows:

- Q63: In the last 12 months, did anyone break into your home?
- Q64: In the last 12 months, has a registered motor vehicle been stolen from this address?
- Q65: In the last 12 months, has anyone threatened you with force or attacked you in the area in which you live?

3.5.4 Social exclusion

This is based on the ABS Index of Deprivation and is constructed from the following items: the bottom quartile of household income; no qualifications; labourer; unemployed; no car in household; rent housing commission or the household is a low income private renter receiving government assistance; primary education only; one parent family; separated/divorced; dwelling with one bedroom; tradesperson; Aboriginal or TSI; ethnic variable (born in non English speaking country/other overseas). The first four received heavier weighting and the last four a lower weighting.

3.5.5 Poverty

Those households receiving the bottom 25% of household income are defined as poor. This is an arbitrary measure, but one we are assuming has veracity for our purposes.

3.5.6 Labour force participation

This is measured in two ways: 1) employed/unemployed/ home duties/not in workforce. 2) In the workforce/unemployed and outside the workforce. The latter is used in the analysis (ANOVA) and in the multiple regression analysis

3.5.7 Anomie

Travis' (1993) adaptation of Srole's anomie scale is used as the measure of anomie. The items included in this scale (from Q84) are as follows:.

> I feel all alone these days.
>
> No matter how hard people try in life, it doesn't make any difference.
>
> I feel discriminated against.
>
> My whole world feels like it's falling apart.

I wish I were someone important.

It's hard for me to tell just what is right and wrong these days.

I don't live by society's rules.

3.5.8 Perceived quality of life (perceived well-being)

Heady and Wearing's (1992) perceived well-being scale is used. It is based on responses to the following question, one of which is on housing (Q86).

How satisfied are you with the following aspects of your life?

Your employment situation.

The amount of money that you have available to you personally.

Your housing.

The amount of time that you have to do the things you want to do.

Your relationship with your partner.

Your independence or freedom.

Your overall standard of living.

Your life as a whole.

3.5.9 Health

Health is measured in two ways. The first, called 'health status', uses a standard health scale: the Short-Form36 (SF36) instrument (Ware and Sherbourne, 1992). It is constructed from the following questions (Qs 75 & 85)

How true or false is each of the following statements for you?

I seem to get sick a little easier than other people.

I am as healthy as anybody I know.

I expect my health to get worse.

My health is excellent.

The second measure, called 'perceived health', is also a well-tried measure (Ware and Sherbourne, 1992). It is based on the following question: How would you describe your health? (Excellent, very good, good, fair, poor, don't know, refused).

3.5.10 Education

Respondents' level of education is used as the measure (Q89).

What is the highest level of education you have completed?

Primary school or less.

Secondary school, but not matriculation/year 12.

Secondary school, matriculation/year 12.

Non-degree post school.

Bachelor's degree.

Postgraduate degree.

3.6 We also examined each tenure groups' attitudes towards the material base of their residential area; their 'community'. Since housing is frequently also discussed in terms of local conditions – the community - we felt these issues were worth considering. We focused on environmental quality, residential necessities, access to shops, the adequacy of recreational services, infrastructure services, education services, health services, and attitudes towards transport needs (cars and public transport).

3.6.1 Environmental quality was measured using the following variables: attitudes towards level of population growth, air pollution, water pollution, wetland preservation, and noise pollution.

3.6.2 Residential necessities was measured using the following variables: satisfaction with access to a post office, bank, hospital, GP, pharmacy, dentist, child care facility, primary school, secondary school, and religious centre.

3.6.2 Satisfaction with access to shops was measured using the following variables: satisfaction with access to take away food outlets, a video shop, a restaurant, a newsagent, a supermarket, and a large shopping mall.

3.6.3 Access to recreational services was based upon the following variables: satisfaction with access public parks and gardens, community centres, swimming pools, and public libraries.

3.6.4 Satisfaction with infrastructure services was based upon the following variables: satisfaction with street cleaning, garbage collection, road maintenance, street lighting, bus services, recycling services, and water and sewerage services.

3.6.5 Attitudes towards educational services and health services – each measured separately – and these being based upon residents' responses to a question on the adequacy/acceptability of each.

3.6.6 Attitudes towards car access were based on a question that asked whether 'living in this area would be difficult without a car'.

3.6.7 Attitudes towards the adequacy of public transport was based on a question that asked 'whether public transport in this area was adequate for my needs'

3.7 Analysis

3.7.1 The statistical techniques used to identify the nature of the relationships between housing and the nine socio-cultural factors are multivariate analysis and an analysis of variance (ANOVA). ANOVA identifies differences between groups and, in the present case, differences between tenure groups (between public housing tenants, owner occupiers, etc) according to the nine non-housing outcomes, and tenure groups according to attitudes towards a range of residential ('community') services and issues.

3.7.2 A multivariate analysis is used to identify those social forces (the 'independent variables') that have effected – brought about - the non-housing outcomes: poverty, a high quality of life, and so on. In other words, it identifies the predictors of these outcomes. The 11 independent variables (the determining influences, or social forces) used to identify causality are:

- Tenure (with owner occupiers being contrasted with the other tenure groups).
- Housing quality.
- Location within South East Queensland) (with inner Brisbane being contrasted with middle Brisbane, outer Brisbane, the Gold Coast, the Sunshine Coast, and the rural-urban fringe).
- Age ('generation').

- Sex (gender).
- Household income.
- Education (with those attaining primary education being contrasted against those who have had some secondary education, those who matriculated, those who have had some tertiary education, those who have bachelor's degrees, and those with postgraduate degrees).
- Occupation (with labourers being contrasted against elementary clerical workers, intermediate production and transport workers, intermediate clerical workers, advanced clerical workers, tradespersons, associate professionals, professionals, and managers).
- Political activism ('civic engagement').
- Ethnicity (Aboriginals and Torres Strait Islanders, and those born in non English speaking countries versus the rest).
- Household type (other family being contrasted against sole person households, couple households, nuclear family households, sole parent households, and share households).

3.7.3 In order to see whether the receipt of government assistance improved non housing outcomes, whether public housing or another form of government assistance, we compared the outcomes for public housing tenants and low income private tenants in receipt of government benefits with low income private tenants who are not in receipt of government assistance. We are assuming that those in receipt of government assistance will have better outcomes than low income private tenants who receive no assistance. We applied a hierarchical linear regression, controlling for age, ethnicity, and household income, to test this argument.

3.7.4 We also provide a correlation analysis of the nine non-housing outcomes, two of which (crime and health) have two parts each. This analysis shows how closely correlated these nine dependent variables are to one another, either in a positive or negative way.

4. FINDINGS

4.1 The analysis is undertaken in six steps. First, we provide background information on tenure, households, and housing quality. Second, we examine the correlations between the nine non-housing outcomes (the nine dependent variables, which in effect become 11 because crime and health have two parts each). Third, we examine the results of an ANOVA on the tenure groups and the non-housing outcomes. Fourth, we examine the results of a multiple regression analysis to identify the best predictors of these nine non-housing outcomes, and particularly whether housing has a determining effect. Fifth, we compare public housing tenants, low income private tenants in receipt of government assistance, and other low income private tenants to see whether there is a difference between the latter and the former two. If there are significant differences, then we can come to a conclusion about whether government housing assistance makes a difference. Finally, we examine the results of another (ANOVA), in this case between the tenure groups and a number of aspects of community life. This is to see whether the findings on non-housing outcomes are replicated here.

4.2 We are attempting, in particular, to see whether those two groups that are in receipt of government assistance (public housing tenants, and low-income private housing tenants receiving government benefits) are more or less likely to

- have experienced crime
- expressed more fear about crime
- have low health status
- say that they have poor health
- live in a cohesive community
- be poor
- be socially excluded
- hold a weak labour market position
- have a low level of education
- have a low perceived quality of life
- experience anomie.

We already have answers to some of these questions. We know that low income private housing tenants and public housing tenants in Australia are more likely to be poor simply because housing assistance is now directed at the most disadvantaged. The research literature on housing-non housing outcomes - little of which is Australian - also suggests that those receiving housing assistance would be more likely to experience crime, have poorer health, and hold a weaker position in the labour market. These experiences, of course, are tied to the characteristics of these people, with aspects of this disadvantage making them eligible for housing assistance.

4.3 Background information

4.3.1 First, we need to provide some base information about the seven tenure groups, the seven household types, and housing quality (Tables 1 to 4).

4.3.2 About a third of households in the sample were owner-occupiers, another third were purchasers, and about a fifth were private renters other than low-income tenants (Table 1). Although 7.7% of households were low-income private tenants in receipt of government assistances, there were only small numbers, and thus small percentages, that were public housing tenants (44 households – 3.3%). There were also small numbers of 'other low-income private tenants' (32 households – 2.4%) and those holding another form of tenure (34 households – 2.6%) (Table 2). The small number of public housing tenants was a consequence of sampling, with this group's share (3.3%) corresponding closely with its share at the 1996 Census (4%). Although the absolute number was small, given the total sample size, we could not have expected anything larger. In any event, given the ANOVA and multiple regression procedures employed, the sample of 146 government supported tenants (44 in public housing and 102 low income households) is sufficiently large for us to be confident in the reliability of the differences observed in the analysis, specifically when comparing these households with those in other forms of tenure.

4.3.3 About three quarters of couple households, nuclear family households, and other family households were home owners (owner occupiers and purchasers) (Table 1).

4.3.4 More than half of sole person households and sole parent households were home owners, with almost two fifths of the latter receiving some form of government assistance, either as public housing tenants or low income private tenants in receipt of government assistance (Table 1).

4.3.5 The bulk of share households are 'other private tenants' (Table 1).

4.3.6 Sole person households, sole parent households, and nuclear family households each comprised about a quarter of public housing tenants (Table 2). Understandably, there were no share households among these tenants.

4.3.7 Sole person households and nuclear family households formed the largest group of low-income private tenants. Sole parent households, couple households, and share households followed (Table 2).

4.3.8 Table 3 identifies the housing quality of each tenure group. Public housing tenants and low-income private renters on benefits had the lowest quality housing. The residents of owner occupied dwellings and houses being purchased were those living in the highest housing quality housing.

4.3.9 Finally, Table 4 summarises a number of key characteristics of each tenure group. It shows a consistent trend in disadvantage for public housing tenants and low-income private tenants in receipt of government assistance. In particular, these two are more likely to have low household incomes, and more likely to have household heads with low levels of education, who are members of the working class[1], and who are employed as labourers. In addition, these households are more likely to live on the fringe of metropolitan Brisbane and be sole parent households.

[1] Class is defined here according to Wright's (1985) conceptualization. He defines members of the working class as those who do not own productive property, who lack work skills, and who have no control over their work or the work of other employees.

4.3.10 It is also important to note differences between low-income private tenants in receipt of government assistance and those low-income private tenants not in receipt of this assistance (Table 4). Obviously, the latter were ineligible for assistance, or, if they were eligible, they had not made application for assistance. Apart from the fact that both are low-income earners, these two groups are markedly different from one another. Unlike those in receipt of government benefits, the other low income private tenants include a large proportion living in sole person households (53.1% versus 22.5%), none were sole parents (versus 11.8%), none were unemployed (versus 11.8%), they were more likely to be from non English speaking backgrounds (31.3% versus 13.9%), fewer were in the bottom 25% of household incomes (34.4% versus 44.1%), none were labourers (versus 6.5%), but fewer were professionals (5.3% versus 22.6%), many more were university graduates (25.8% versus 11.9%), and they were somewhat younger (6.3% were 60 years+ versus 11.8%). These differences, then, suggest that low-income private tenants in receipt of government assistance are more disadvantaged than the other low-income private tenants; a not unexpected outcome.

TABLE 1: Tenure and Household Type (percentages)

Tenure	Sole Person (N=212)	Couple (N=396)	Nuclear Family (N=395)	Sole Parent (N=63)	Other Family (N=180)	Share Household (N=89)	Total (N=1333)
Owner Occupier	42.0	44.4	29.9	22.2	45.0	11.5	36.6
Purchaser	17.9	32.3	47.8	25.4	26.7	10.3	32.1
Public housing tenant	4.7	1.8	2.8	19.0	2.2	0.0	3.3
Low income private tenant	8.0	1.3	0.5	0.0	1.1	6.9	2.4
Low income private tenant on government benefits	10.8	3.5	7.3	19.0	6.7	13.8	7.7
Other private tenant	22.2	17.4	15.7	20.6	22.2	74.7	22.2
Other	4.2	2.8	1.8	3.2	2.2	1.1	2.6
Total	100.0	100.0	100.0	99.9	100.0	99.9	100.0

TABLE 2: Household Type and Tenure (percentages)

Household Type	Owner Occupier (N=488)	Purchaser (N=428)	Public Housing Tenant (N=44)	Low Income Private Tenant on Benefits (N=102)	Other Low Income Private Tenant (N=32)	Other Private Tenant (N=296)	Other (N=34)	Total (N=1333)
Sole person	18.2	8.9	22.7	22.5	53.1	15.9	26.5	15.9
Couple	36.1	29.9	15.9	13.7	15.6	23.3	32.4	29.7
Nuclear family	24.2	44.2	25.0	28.4	6.3	20.9	20.6	29.6
Sole Parent	2.9	3.7	27.3	11.8	0.0	4.4	5.9	4.7
Other family	16.6	11.2	9.1	11.8	6.3	13.5	11.8	13.5
Share household	2.0	2.1	0.0	11.8	18.8	22.0	2.9	6.5
Total	100.0	100.0	100.0	100.0	100.1	100.0	100.1	99.9

TABLE 3: Housing Quality and Tenure (percentages)

Housing Quality	Owner Occupier (N=488)	Purchaser (N=428)	Public Housing Tenant (N=44)	Low income Private Tenant on Benefits (N=102)	Low Income Private Tenant (N=32)	Other Private Tenant (N=296)	Other (N=34)	Total (N=1333)
Low	22.7	20.3	52.3	48.0	34.4	32.8	17.6	26.3
Low-Medium	25.0	23.8	36.4	23.5	25.0	29.4	41.2	26.3
Medium-High	23.4	25.9	9.1	17.6	31.3	25.7	35.3	24.0
High	28.9	29.9	2.3	10.8	9.4	12.2	5.9	23.4
Total	100.0	99.9	100.0	99.9	100.1	100.1	100.0	100.0

Chi^2=112.9; df=15; P=0.000

Table 4: Selected Characteristics of Tenure Groups (percentages)

CHARACTERISTICS	OWNER OCCUPIER	PURCHASER	PUBLIC HOUSING TENANT	LOW INCOME PRIVATE TENANT ON SOCIAL SECURITY	OTHER LOW INCOME PRIVATE TENANT	OTHER PRIVATE TENANT	OTHER	TOTAL
Location within South East Qld: % Outer Metropolitan Brisbane	26.9	33.8	43.2	28.3	18.8	21.9	33.3	28.9
Age: % 60+	33.8	3.7	20.5	11.8	6.3	1.0	20.6	16.0
Household income: % Bottom 25%	25.2	10.8	66.7	44.1	34.4	0.0	34.6	21.6
Education: % Primary only	5.7	2.2	18.2	6.9	0.0	1.5	3.2	4.2
Education: % Uni grads	18.9	20.6	0	11.9	25.8	28.0	22.6	19.9
Class: % Working class	33.7	37.0	76.9	54.3	53.6	38.5	42.4	39.1
Professionals	25.6	23.1	0.0	22.6	5.3	27.4	36.4	24.4
Occupation: % Labourers	5.9	4.9	22.2	6.5	0.0	3.7	4.5	5.1
Ethnicity: % NESB	8.7	7.1	13.6	13.9	31.3	9.4	2.9	9.3
Household type: Sole parent	2.9	3.7	27.3	11.8	0	3.4	5.9	4.7
Household type: Sole person	18.2	8.9	22.7	22.5	53.1	12.7	26.5	15.9
% Unemployed	3.9	3.5	9.1	21.6	0.0	4.9	5.9	5.4

4.4 Correlations between the Non-Housing Outcomes

4.4.1 We turn now to examining the statistical relationships between each of the non-housing outcomes, for this will identify which ones relate to one another in either a positive or negative way.

4.4.2 Table 5 shows the correlations, with those found to be statistically significant at the 0.5 level or greater being highlighted in bold.

4.4.3 The most significant positive correlations (at 0.000) are between

- Poverty, social exclusion, and anomie, these three coming together to pinpoint a high level of deprivation;
- Education and employment status, these two identifying a position of relative privilege
- Quality of life, employment status, health status, and perceived health, with these four again coming together to identify those who experience a high level of well-being
- Fear of crime and experience of crime are highly correlated, suggesting that the latter may be a catalyst for the former.

4.4.4 The most significant negative correlations (at 0.000) are between

- Community, on the one hand, and education and employment status, on the other hand, thus indicating the way in which those who are well educated and in the workforce are less likely to have strong local ties; less likely to live in a cohesive communities. This seems to suggest that cohesive communities are less likely among better off households. In this regard, it is also worth noting the weaker, though still statistically significant relationship between community, on the one hand, and social exclusion, on the other hand; apparently confirming the viewpoint that community cohesion is associated – maybe even a product of – disadvantage. Disadvantaged households are likely to come together for mutual assistance, and their lives are also concentrated locally because of disadvantage.
- Poverty is highly correlated negatively with education and employment, thus showing the obvious link between low levels of education, being outside the labour force, and poverty.
- Education and perceived quality of life, on the one hand, and anomie and social exclusion, on the other hand, are highly correlated negatively, thus highlighting the way low levels of education and a low perceived quality of life are associated with high rates of anomie and social exclusion.
- Anomie, on the one hand, and perceived health and health status, on the other hand, are negatively correlated, thus identifying the way high rates of anomie are associated with poor health.
- Social exclusion, on the one hand, and employment status and perceived health, on the other hand, are negatively correlated, thus indicating the way that the socially excluded are likely to be unemployed and out of the workforce and have poor health.

TABLE 5: CORRELATION ANALYSIS: DEPENDENT VARIABLES

CORRELATIONS:	Community	Poverty	Education	Quality of Life	Anomie	Social Exclusion	Fear of Crime	Experience Of Crime	Employ Status	Health Status	Perceived Health
Community	1.0000 (0) P= .	-.0491 (979) P= .062	-.0965 (1302) **P= .000**	.0412 (1342) P= .066	.0003 (1314) P= .496	.0628 (1337) **P= .011**	.0557 (1325) **P= .021**	-.0143 (1038) P= .323	-.1379 (1336) **P= .000**	-.0279 (1327) P= .155	-.0521 (1331) **P= .029**
Poverty	.0491 (979) P= .062	1.0000 (0) P= .	-.1375 (958) **P= .000**	.0825 (979) **P= .005**	.0662 (972) **P= .020**	.6845 (979) **P= .000**	.0174 (971) P= .294	.0290 (762) P= .212	-.2802 (974) **P= .000**	-.0044 (977) P= .445	-.0380 (979) P= .118
Education	-.0965 (1302) **P= .000**	- .1375 (958) **P= .000**	1.0000 (0) P= .	.0557 (1303) **P= .022**	-.1090 (1288) **P= .000**	-.2430 (1303) **P= .000**	-.0630 (1286) **P= .012**	-.0092 (1011) P= .385	.2414 (1298) **P= .000**	.0495 (1301) **P= .037**	.0897 (1303) **P= .001**
Quality of life	.0412 (1342) P= .066	- .0825 (979) **P= .005**	.0557 (1303) **P= .022**	1.0000 (0) P= .	-.3303 (1315) **P= .000**	-.2121 (1338) **P= .000**	-.0849 (1328) **P= 001**	-.0663 (1038) **P= .016**	.0916 (1341) **P= .000**	.1854 (1328) **P= .000**	.2096 (1332) **P= .000**
Anomie	.0003 (1314) P= .496	.0662 (972) **P= .020**	-.1090 (1288) **P= .000**	-.3303 (1315) **P= .000**	1.0000 (0) P= .	.1700 (1315) **P= .000**	.0539 (1298) **P= .026**	.0235 (1021) P= .227	-.0889 (1311) **P= .001**	-.2200 (1313) **P= .000**	-.1967 (1315) **P= .000**
Social Exclusion	.0628 (1337) **P= .011**	.6845 (979) **P= .000**	-.2430 (1303) **P= .000**	-.2121 (1338) **P= .000**	.1700 (1315) **P= .000**	1.0000 (0) P= .	.0145 (1321) P= .299	.0708 (1038) **P= .011**	-.3912 (1332) **P= .000**	-.0786 (1328) **P= .002**	-.0979 (1332) **P= .000**
Fear of Crime	.0557 (1325) **P= .021**	.0174 (971) P= .294	-.0630 (1286) **P= .012**	-.0849 (1328) **P= .001**	.0539 (1298) **P= .026**	.0145 (1321) P= .299	1.0000 (0) P= .	.1727 (1033) **P= .000**	-.0458 (1322) **P= .048**	-.0962 (1311) **P= .000**	-.0935 (1315) **P= .000**
Experience of crime	-.0143 (1038) P= .323	.0290 (762) P= .212	- .0092 (1011) P= .385	-.0663 (1038) **P= .016**	.0235 (1021) P= .227	.0708 (1038) **P= .011**	.1727 (1033) **P= .000**	1.0000 (0) P= .	.0053 (1035) P= .433	-.0433 (1032) P= .082	.0178 (1035) P= .283

Employment Status	-.1379 (1336) **P= .000**	-.2802 (974) **P= .000**	.2414 (1298) **P= .000**	.0916 (1341) **P= .000**	-.0889 (1311) **P= .001**	-.3912 (1332) **P= .000**	-.0458 (1322) **P= .048**	.0053 (1035) P= .433	1.0000 (0) P= .	.0893 (1323) **P= .001**	.1173 (1327) **P= .000**
Health Status	-.0279 (1327) P= .155	-.0044 (977) P= .445	.0495 (1301) **P= .037**	.1854 (1328) **P= .000**	-.2200 (1313) **P= .000**	-.0786 (1328) **P= .002**	-.0962 (1311) **P= .000**	-.0433 (1032) P= .082	.0893 (1323) **P= .001**	1.0000 (0) P= .	.5218 (1328) **P= .000**
Perceived Health	-.0521 (1331) **P= .029**	-.0380 (979) P= .118	.0897 (1303) **P= .001**	.2096 (1332) **P= .000**	-.1967 (1315) **P= .000**	-.0979 (1332) **P= .000**	-.0935 (1315) **P= .000**	.0178 (1035) P= .283	.1173 (1327) **P= .000**	.5218 (1328) **P= .000**	1.0000 (0) P= .

(Coefficient/(Cases)/1-tailed Significance)

" . " is printed if a coefficient cannot be computed

Bold = statistically significant at least at 0.5 level of significance

- Health status and perceived health, on the one hand, and fear of crime, on the other hand, are negatively correlated, thus suggesting the way that those who are in good health are less fearful of crime (and vice versa); a relationship that is tied to privilege rather to health specifically.
- In sum, then, there is a clear clustering of variables pinpointing disadvantage, and a clear clustering that highlight advantage.

4.5 Tenure and the Non-Housing Outcomes: An Analysis of Variance

We now turn to the first major step in our attempt at understanding the relationships between housing and the nine non-housing outcomes.

4.5.1 Table 6 clearly shows the nature of the relationship between the different tenure groups (owner occupiers, purchasers, public housing tenants, low income private tenants on government benefits, other low income private tenants, other private tenants, and 'other') - as the independent variables - and the non-housing outcomes, as the dependent variables. Statistically significant relationships are apparent in all instances, nine of which are at the 0.0000 level and two are at least at the 0.01 level.

4.5.2 A number of the findings are not surprising (see Table 6). Because public housing is now welfare housing and because, by definition, low-income private tenants on benefits are low income, it was inevitable that the latter, followed by the former (and then other low income private tenants), should have the highest mean scores for social exclusion. Public housing tenants also had the highest mean scores for poverty, but 'other low-income private housing tenants' had the second highest score, followed by low-income private tenants on benefits. It is perhaps a little surprising that the latter did not follow public housing tenants.

4.5.3 Overall, *public housing tenants*, followed by low-income private tenants on government benefits, are the most disadvantaged of the tenure groups. Public housing tenants received the lowest mean scores for perceived quality of life, perceived health, health status, and employment status (i.e. were more likely to be unemployed or outside the workforce). They expressed the greatest fear of crime, and they had the highest rates of poverty, and of anomie. They received the second lowest score for educational attainment, and they had the second highest rates of social exclusion and experiences of crime.

4.5.4 *Low-income private tenants in receipt of government assistance* had the highest rates of social exclusion (followed by public housing tenants). They had the second lowest level of perceived quality of life and of employment status, the second highest rates of anomie, and the second lowest level of perceived health and lowest level of educational attainment.

4.5.5 *Other private tenants* were most likely to say that they had experienced crime.

TABLE 6: Analysis of Variance: Tenure and the Non Housing Outcomes (mean scores)

Tenure	Perceived Quality of Life	Anomie	Community	Health Status	Perceived Health	Poverty	Social Exclusion	Educational Attainment	Employment Status	Fear of Crime	Experience Of Crime
Owner Occupier	2.7520	1.9854	1.8975	1.9405	2.5934	1.1365	1.2889	3.1345	1.4938	2.0847	1.1140
Purchaser	2.5748	1.9952	1.5888	2.0448	2.7793	1.0525	1.1285	3.2990	1.7465	1.9671	1.1168
Public housing tenant	1.7273	2.5227	2.2500	1.6364	2.0909	1.2564	1.7955	2.3409	1.2045	2.5610	1.2647
Low income private tenant + social security	1.9412	2.3333	1.8039	2.0495	2.4706	1.1569	1.9302	2.7921	1.3039	1.9293	1.2000
Other low Income private tenant	2.0938	2.0323	1.1250	2.2500	2.7500	1.2500	1.3750	3.2903	1.5938	1.8438	1.2000
Other private tenant	2.1171	2.0891	1.2683	2.0612	2.7745	1.0000	1.1707	3.5200	1.7843	2.0796	1.2892
Other	2.6176	1.9118	1.6176	2.0882	2.4706	1.0769	1.2353	3.3548	1.6471	1.7941	1.2083
Total	2.4824	2.0488	1.6804	1.9962	2.6554	1.1014	1.2648	3.2022	1.6017	2.0357	1.1420
	P=0.0000	**P=0.0000**	**P=0.0000**	**P=0.0077**	**P=0.0000**	**P=0.0000**	**P=0.0000**	**P=0.0000**	**P=0.0000**	**P=0.0000**	**P=0.0002**

Bold = statistically significant at least at 0.01

4.5.6 *Other low-income private tenants* had the second highest rates of poverty after public housing tenants, with low-income private tenants on government assistance having the third highest rate.

4.5.7 The most intriguing finding relates to community (see Table 6). Public housing tenants were found to have the strongest communities since they were far more likely to have strong local ties. They were followed by owner occupiers and low income private renters in receipt of government assistance.

Following suppositions emanating from the social capital and community organisation literatures, this finding for public housing tenants and private housing tenants in receipt of government assistance would seem to augur well for attempts currently underway to strengthen communities - in order to help community overcome difficulties. Yet, this may also be a disquieting finding since, if public housing tenants already live in cohesive communities and if the strengthening of communities is a policy goal, policy initiatives taken in this direction may not bring the desired outcomes anticipated. A cohesive community may not be a critical factor in solving key problems. There may be more fundamental factors, such as job skills, that would help overcome these problems. The strong local ties may partly relate to mutual support and partly to the way their disadvantage may encourage a greater localisation of life.

4.5.8 The clear conclusion from this analysis is that public housing tenants and low-income private tenants receiving government assistance tend, of all tenure groups, to be in the most parlous circumstances. Thus, if the receipt of government assistance has any positive outcomes it does not, overall, pull them out of their disadvantaged circumstances. This assistance would certainly lessen the degree of disadvantage - something our data does not enable us to observe – but high levels of disadvantage remain. In this way, then, disadvantage is likely to be a product of a complex series of more fundamental factors, particularly householders' generally disadvantaged position, which would have made them eligible for housing assistance. It is to these factors that we now turn.

4.6 In Search of the Determinants of Non-Housing Outcomes: A Multiple Regression Analysis

4.6.1 We now attempt to identify the key determinants – the key social forces – that give rise to these non-housing outcomes, particularly noting whether any of the tenure groups have a causal impact. For example, what are the best predicators of quality of life? We ran 11 multiple regression analyses against the independent variables (the determinants) that we cited above (e.g. age, occupation, gender). One was run for seven of the non-housing outcomes, but two were run for health (one on 'perceived health' and the other on 'health status') and two for crime ('fear' and 'experiences'). Ten of the 11 results are given as Tables 7 to 16.

4.6.2 The one multiple regression analysis that is not shown in tabular form is on perceived health, and it was not included because the analysis failed to identify any predictors. This is most surprising because health status and perception of health are closely tied to gender and age: older women are more likely to report poor health. Since gender and age are two of our independent variables, we could have expected to find women and older people being good predictors of poorer health, but this was not the case.

4.6.3 Tables 7 to 16 are generally ranked according to the variance explained, with the findings reported in each table largely paralleling those suggested from the ANOVA. The variance explained helps us identify how good the predictors are that have been chosen. In our 11 multiple regression analyses, the 'coefficient of determination' (adjusted RSquare) ranged from a high of 0.43 (meaning 43% of the variance is explained) to a low of minus 0.01 (meaning that less than 1% is explained). Thus, the amount of variance explained in these 11 analyses ranged from 43% to less than 1%. If we adopt conventional procedures, then an RSquare greater than 0.1 (i.e. accounting for 10% of the variance: variability in the dependent variable) can be regarded as acceptable. Significant parameter estimates contributing to that figure of 10% are sufficiently robust to be accepted with confidence as major predictors (Tabachnick and Fidell, 1996).

4.6.4 Housing was a predictor in six of the 11 multiple regressions. It helped predict the level of social exclusion, quality of life, anomie, fear of crime, and experience of crime, and health status, with public housing tenants and low income private tenants featuring most prominently on the negative side. Of course, when we identify tenure and/or housing quality, we are pinpointing individuals and households with distinctive defining characteristics who live in these forms of housing; we are not pinpointing the dwellings themselves.

4.6.5 Table 7, on *education*, shows that the independent variables explained 43% of the variance. The table also shows that the strongest predictor of educational attainment is the occupation 'professional', followed by 'manager', and 'associate professional'. These are occupations requiring tertiary education. Political activism ('civic engagement') is also significant, since our data show that the higher the level of education the more politically active is an individual. Moreover, Table 7 identifies location as a good predictor, but in a negative way. Relative to the inner Brisbane – a location with the largest concentration of the most educated - all SEQ locations are far less likely to have highly educated individuals. Finally, age is also a good predicator: the younger the age, the higher the level of education.

4.6.6 Table 8 shows that the independent variables explained 39% of the variance with regard to *social exclusion*. In other words, they cover a significant number of the predictors of this malady. Social exclusion is most clearly explained by low income private tenants in receipt of government assistance, with household income and education also being significant but in the opposite direction: high household income and those educated beyond primary school are far less likely to be socially excluded. Location and household type are also significant. First, those living in Brisbane's outer suburbs are, relative to inner city residents, less likely to be socially excluded, which is surprising considering the locational disadvantage debate frequently cites households living here as disadvantaged. Second, sole person households, relative to other family households, also have high rates of social exclusion.

4.6.7 Table 9 shows that the independent variables used to analyse *poverty* explained 23% of the variance. The most significant predictor is – not surprisingly – household income: low household income is highly correlated with poverty. Oddly, Table 9 also shows that, relative to labourers, intermediate production and transport workers were least likely to

experience poverty, an outcome that we find difficult to explain. It would seem more likely that the highly skilled white collar occupations of managers and professionals would be less likely (not intermediate production and transport workers), relative to labourers, to experience poverty.

4.6.8 The independent variables used to help predict *perceived quality of life* explained 20% of the variance (Table 10). The most significant predictors were a high household income, those living in couple households and in nuclear family households. Perhaps surprisingly, 'sole parent households' was also a good predictor of a high perceived quality of life (relative to 'other households'), which seems contrary to much opinion because sole parent households have frequently been identified as disadvantaged households, which would seem to suggest that they would perceive a low quality of life. Three tenure groups, relative to owner occupiers, had a low perceived quality of life: purchasers and other private tenants in particular, but also public housing tenants.

4.6.9 The independent variables used to predict *community* came to explain 17% of the variance (Table 11). Political activism ('civic engagement') was the strongest predictor. This is likely to have been a consequence of the fact that one of the variables used to identify community – local political action – is also used (along with a number of other variables) to help define political activism. There are also two location predictors. Relative to the inner city, community is strong on the Sunshine Coast and in the rural-urban fringe. Ethnicity was also a predictor. Those from non English speaking backgrounds also had strong local ties. Interestingly, and in contrast with the ANOVA, none of the tenure groups were significant predictors of community.

4.6.10 Table 12 shows that the independent variables explained 12% of the variance for *anomie*. Low-income was the only predictor of anomie, with the analysis also showing that those who were 'other tenants', and those who lived in 'couples households and nuclear family households were far less likely, at a statistically significant level, to experience anomie.

4.6.11 Table 13 shows that the independent variables explained 11% of the variance for *employment status.* The strongest predictor of employment was household type. Relative to other households, those living in sole person households, couples households, nuclear family households, and share households were more likely to be employed. High income was also a strong predictor of employment. Certain geographic locations – Brisbane outer suburbs, Sunshine Coast, and rural-urban – were also predictors.

4.6.12 Table 14 shows that the best predictors of those expressing the greatest *experience of crime* (the independent variables explained 12% of the variance) are 'other private tenants' (i.e. those other than low income private tenants), those living on the Gold Coast, and those living in sole person households. Those experiencing very little crime are those in a number of occupations (relative to those who are labourers): professionals; associate professionals; tradespersons; intermediate clerical workers; and intermediate production and transport workers.

4.6.13 The results of the remaining multiple regressions on the non housing outcomes are given in Tables 15 and 16: fear of crime; and health status. However, each explains less than 10% of the variance. Thus, even those independent variables identified as being statistically significant cannot be considered good predictors of these outcomes. Still, two housing variables were identified as being significant: public housing tenants with regard to fear of crime; and housing quality with regard to health status. The latter is particularly interesting because it suggests that the better the housing quality, the higher the health status. However, those living in the best housing are those who are most socially advantaged, and so this advantage is likely to have the determining effect on health status.

4.6.14 The failure of age and gender as predictors of fear of crime and experience of crime is surprising. Elderly women are those most fearful of crime, young males are those most likely to experience crimes against the person, and low-income households are those most likely to experience property crime. Similarly, and as mentioned above, health status is also closely tied to age and gender, but the multiple regression analysis did not show this to be the case. It is not clear why our data did not identify the influences of age and gender, but it may relate to women's changing position within society, and that of older women in particular. Gaining more influence and advantage may have given women greater power and thus a lower fear of crime.

4.7 In conclusion, housing – and public housing tenants and low income private tenants in particular – were shown to be important predictors of a number of non housing outcomes. This finding highlights the disadvantaged position of the two government assisted tenure groups and, again, raises questions about the extent to which non housing outcomes were brought about by government assistance. Some positive outcomes are certainly likely from this action, but since this assistance goes to the most disadvantaged and since disadvantage is closely tied to poor health and a poorer quality of life, our findings are not surprising.

Table 7: Outcomes of Multiple Regression Analysis Relating Tenure and Education

(only statistically significant relationships identified)

Explains 43% of the variance (Adjusted RSquare = .394)

Independent Variables	Standard Error	Beta	t ratio	Significance
Tenure				
Purchaser				
Other private tenant				
Low income private tenant				
Low income private tenant + bene				
Public housing tenant				
Other tenure				
House quality				
Location				
Brisbane middle suburbs	.142	-.109	-2.393	.017
Brisbane outer suburbs	.140	-.090	-1.936	.053
Gold Coast	.174	-.138	-3.279	.001
Sunshine Coast	.176	-.140	-3.442	.001
SEQ rural-urban fringe	.255	-.073	-1.968	.050
Age	.049	-.089	-2.274	.023
Sex				
Household income				
Education				
Some secondary education				
Matriculation				
Tertiary non degree				
Bachelor degree				
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt				

Itermed Clerical				
Advanced Clerical				
Tradespersons				
Assoc Prof	.242	.161	2.670	.008
Professionals	.228	.696	9.270	.000
Managers	.286	.145	3.008	.003
Political activism	.095	.082	2.332	.020
Ethnicity				
Household type				
Sole Person				
Couple				
Nuclear family				
Sole parent				
Share household				

Table 8: Outcomes of Multiple Regression Analysis Relating Tenure and Social Exclusion
(only statistically significant relationships identified)
Explains 39% of the variance (Adjusted RSquare = .345)

Independent Variables	**Standard Error**	**Beta**	**t ratio**	**Significance**
Tenure				
Purchaser				
Other private tenant				
Low income private tenant				
Low income private tenant + bene	0.58	.235	5.613	.000
Public housing tenant				
Other tenure				
House quality				
Location				
Brisbane middle suburbs				
Brisbane outer suburbs	.034	-.099	-2.029	.043
Gold Coast				
Sunshine Coast				

SEQ rural-urban fringe				
Age				
Sex				
Household income	.015	- .224	-4.979	.000
Education				
Some secondary education	.088	-1.496	-11.591	.000
Matriculation	.089	-1.41	-11896	.000
Tertiary non degree	.089	-1.291	-11.642	.000
Bachelor degree	.090	-1.359	-11.473	.000
PG degree	.097	-.876	-10.618	.000
Occupation				
Elementary clerical				
Itermed Prod & Tpt				
Itermed Clerical				
Advanced Clerical				
Tradespersons				
Assoc Prof				
Professionals				
Managers				
Political activism				
Ethnicity				
Household type				
Sole Person	.048	.107	1.976	.049
Couple				
Nuclear family				
Sole parent				
Share household				

Table 9: Outcomes of Multiple Regression Analysis Relating Tenure and Poverty
(only statistically significant relationships identified)
Explains 23% of the variance (Adjusted RSquare = .172)

Independent Variables	Standard Error	Beta	t ratio	Significance
Tenure				
Purchaser				
Other private tenant				
Low income private tenant				
Low income private tenant + bene				
Public housing tenant				
Other tenure				
House quality				
Location				
Brisbane middle suburbs				
Brisbane outer suburbs				
Gold Coast				
Sunshine Coast				
SEQ rural-urban fringe				
Age				
Sex				
Household income	.009	-.395	-7.808	.000
Education				
Some secondary education				
Matriculation				
Tertiary non degree				
Bachelor degree				
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt	.043	-.199	-2.127	.034

Itermed Clerical
Advanced Clerical
Tradespersons
Assoc Prof
Professionals
Managers
Political activism
Ethnicity
Household type
Sole Person
Couple
Nuclear family
Sole parent
Share household

Table 10: Outcomes of Multiple Regression Analysis Relating Tenure and Perceived Quality of Life
(only statistically significant relationships identified)
Explains 20% of the variance (Adjusted RSquare = .144)

Independent Variables	**Standard Error**	**Beta**	**t ratio**	**Significance**
Tenure				
Purchaser	.107	-.149	-3.001	.003
Other private tenant	.144	-.172	-3.341	.001
Low income private tenant				
Low income private tenant + bene				
Public housing tenant	.394	-.094	-2.273	.023
Other tenure				
House quality				
Location				
Brisbane middle suburbs				
Brisbane outer suburbs				
Gold Coast				
Sunshine Coast				

SEQ rural-urban fringe				
Age				
Sex				
Household income	.057	.240	4.662	.000
Education				
Some secondary education				
Matriculation				
Tertiary non degree				
Bachelor degree				
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt	.559	.259	2.159	.031
Itermed Clerical				
Advanced Clerical				
Tradespersons				
Assoc Prof				
Professionals				
Managers				
Political activism				
Ethnicity				
Household type				
Sole Person				
Couple	.153	.254	3.919	.000
Nuclear family	.148	.312	4.616	.000
Sole parent	.255	.122	2.343	.020
Share household				

Table 11: Outcomes of Multiple Regression Analysis Relating Tenure and Community
(only statistically significant relationships identified)
Explains 17% of the variance (Adjusted RSquare = .108)

Independent Variables	Standard Error	Beta	t ratio	Significance
Tenure				
Purchaser				
Other private tenant				
Low income private tenant				
Low income private tenant + bene				
Public housing tenant				
Other tenure				
House quality				
Location				
Brisbane middle suburbs				
Brisbane outer suburbs				
Gold Coast				
Sunshine Coast	.210	.150	3.007	.003
SEQ rural-urban fringe	.301	.140	3.096	.002
Age				
Sex				
Household income				
Education				
Some secondary education				
Matriculation				
Tertiary non degree				
Bachelor degree				
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt				
Itermed Clerical				

Advanced Clerical				
Tradespersons				
Assoc Prof				
Professionals				
Managers				
Political activism	.113	.275	6.406	.000
Ethnicity	.212	.102	2.416	.016
Household type				
Sole Person				
Couple				
Nuclear family				
Sole parent				
Share household				

Table 12: Outcomes of Multiple Regression Analysis Relating Tenure and Anomie
(only statistically significant relationships identified)
Explains 12% of the variance (Adjusted RSquare = .062)

Independent Variables	**Standard Error**	**Beta**	**t ratio**	**Significance**
Tenure				
Purchaser				
Other private tenant				
Low income private tenant				
Low income private tenant + bene				
Public housing tenant				
Other tenure	.258	-.096	-2.207	.028
House quality				
Location				
Brisbane middle suburbs				
Brisbane outer suburbs				
Gold Coast				
Sunshine Coast				
SEQ rural-urban fringe				

Age				
Sex				
Household income	.047	-.116	-.2147	.032
Education				
Some secondary education				
Matriculation				
Tertiary non degree				
Bachelor degree				
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt				
Itermed Clerical				
Advanced Clerical				
Tradespersons				
Assoc Prof				
Professionals				
Managers				
Political activism				
Ethnicity				
Household type				
Sole Person				
Couple	.125	-.145	-2.133	.033
Nuclear family	.121	-.165	-2.335	.020
Sole parent				
Share household				

Table 13: Outcomes of Multiple Regression Analysis Relating Tenure and Employment Status (only statistically significant relationships identified)
Explains 11% of the variance (Adjusted RSquare = .050)

Independent Variables	Standard Error	Beta	t ratio	Significance
Tenure				
Purchaser				
Other private tenant				
Low income private tenant				
Low income private tenant + bene				
Public housing tenant				
Other tenure				
House quality				
Location				
Brisbane middle suburbs				
Brisbane outer suburbs	.021	.139	2.368	.018
Gold Coast				
Sunshine Coast	.026	.129	2.500	.013
SEQ rural-urban fringe	.038	.091	1.950	.052
Age				
Sex				
Household income	.009	.161	2.975	.003
Education				
Some secondary education				
Matriculation				
Tertiary non degree				
Bachelor degree				
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt				
Itermed Clerical				

Advanced Clerical				
Tradespersons				
Assoc Prof				
Professionals				
Managers				
Political activism				
Ethnicity	.026	-.122	-2.793	.005
Household type				
Sole Person	.030	.242	3.724	.000
Couple	.024	.274	3.996	.000
Nuclear family	.023	.293	4.121	.000
Sole parent				
Share household	.037	.116	2.277	.023

Table 14: Outcomes of Multiple Regression Analysis Relating Tenure and Experience of Crime
(only statistically significant relationships identified)
Explains 12% of the variance (Adjusted RSquare = .040)

Independent Variables	Standard Error	Beta	t ratio	Significance
Tenure				
Purchaser				
Other private tenant	.07	.168	2.907	.004
Low income private tenant				
Low income private tenant + bene				
Public housing tenant				
Other tenure				
House quality				
Location				
Brisbane middle suburbs				
Brisbane outer suburbs				
Gold Coast	.070	.147	2.279	.023
Sunshine Coast				
SEQ rural-urban fringe				
Age				
Sex				
Household income				
Education				
Some secondary education				
Matriculation				
Tertiary non degree				
Bachelor degree				
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt	.108	-.136	-2.137	.033
Itermed Clerical	.086	-.210	-2.167	.031

Advanced Clerical				
Tradespersons	.091	-.179	-2.198	.029
Assoc Prof	.090	-.209	-2.404	.017
Professionals	.092	-.306	-2.769	.006
Managers				
Political activism				
Ethnicity				
Household type				
Sole Person	.080	.167	2.343	.020
Couple				
Nuclear family				
Sole parent				
Share household				

Table 15: Outcomes of Multiple Regression Analysis Relating Tenure and Fear of Crime
(only statistically significant relationships identified)
Explains 1% of the variance (Adjusted RSquare =.011)

Independent Variables	Standard Error	Beta	t ratio	Significance
Tenure				
Purchaser				
Other private tenant				
Low income private tenant				
Low income private tenant + bene				
Public housing tenant	.327	.113	2.540	.011
Other tenure				
House quality				
Location				
Brisbane middle suburbs				
Brisbane outer suburbs				
Gold Coast				
Sunshine Coast				
SEQ rural-urban fringe				
Age				
Sex				
Household income				
Education				
Some secondary education	.284	.326	2.052	.041
Matriculation	.288	.309	2.107	.036
Tertiary non degree	.290	.266	1.950	.052
Bachelor degree	.293	.286	1.962	.050
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt				
Itermed Clerical				

Advanced Clerical
Tradespersons
Assoc Prof
Professionals
Managers
Political activism
Ethnicity
Household type
Sole Person
Couple
Nuclear family
Sole parent
Share household

Table 16: Outcomes of Multiple Regression Analysis Relating Tenure and Health Status
(only statistically significant relationships identified)
Explains 1% of the variance (Adjusted RSquare = .021)

Independent Variables	Standard Error	Beta	t ratio	Significance
Tenure				
Purchaser				
Other private tenant				
Low income private tenant				
Low income private tenant + bene				
Public housing tenant				
Other tenure				
House quality	.035	.097	1.993	.047
Location				
Brisbane middle suburbs				
Brisbane outer suburbs				
Gold Coast				
Sunshine Coast				
SEQ rural-urban fringe				
Age				
Sex				
Household income				
Education				
Some secondary education				
Matriculation				
Tertiary non degree				
Bachelor degree				
PG degree				
Occupation				
Elementary clerical				
Itermed Prod & Tpt	.206	.172	2.823	.005
Itermed Clerical				

Advanced Clerical				
Tradespersons				
Assoc Prof				
Professionals				
Managers				
Political activism				
Ethnicity				
Household type				
Sole Person				
Couple				
Nuclear family				
Sole parent	.202	.130	2.547	.011
Share household				

4.8 Comparing Public Housing Tenants, Low Income Private Tenants in Receipt of Government Assistance, and Other Low Income Private Tenants.

4.8.1 We need now to see whether public housing tenants and low income private tenants in receipt of government benefits – groups receiving assistance – are better off than low income private tenants who are not in receipt of government assistance. We are assuming that housing assistance will have improved the lot of public housing tenants and those low income private tenants who receive benefits, relative to this other low income group. Thus, the former two groups should have better non housing outcomes.

4.8.2 We have undertaken three comparative analyses to see whether this is the case: one compares public housing tenants with the low income private tenants who do *not* receive assistance; the second compares low income private tenants in receipt of government assistance with the other low income private tenants who do *not* receive assistance; and the third compares public housing tenants with low income private tenants in receipt of government assistance.

4.8.3 We applied hierarchical linear regressions to see whether there were differences between these three groups of low-income tenants. In the analysis we omitted poverty as a non housing outcome because one of the independent variables we used, household income, was also used to define poverty. Under such circumstances, there would automatically be a high correlation between household income, on the one hand, and poverty, on the other hand. Thus, the non housing outcomes (i.e. dependent variables) that we used here are: perceived quality of life; anomie; social exclusion; community; education; fear of crime; experience of crime; perceived health; and health index.

4.8.4 We included three independent variables, apart from the paired tenure groups. These are age, ethnicity, and household income, and we controlled for these three in the regressions. These were used both because they are key variables, but also because the numbers making up each of the three tenure groups are small, which means we have to limit the number of independent variables used. When employing a hierarchical linear regression, small numbers limit the number of independent variables that can be used to identify the determining factors with regard to the outcomes.

4.8.5 Nine hierarchical linear regressions were undertaken for each of the three paired tenure groups. These enable us to see whether, as the housing-non housing outcomes argument would have us believe, those households in receipt of government assistance – public housing tenants and low income private tenants on government benefits – are better off than those low income private tenants who are not in receipt of benefits. This form of regression analysis allows us to control for certain determining variables; in our case we will be controlling for age, household income, and ethnicity.

4.8.6 In each analysis, we first undertook a multiple regression using age, ethnicity, and household income as the independent variables and the non housing outcomes as the dependent variable. The results are shown on the left hand sides of Tables 17, 18, and 19. We then added the three

paired tenure variables to enable us to see whether those in receipt of government assistance, as we are led to believe, have better outcomes, relative to low-income private tenants who receive no government assistance. The results are shown on the right hand sides of the three tables, with the column on the extreme right showing any statistically significant differences.

4.8.7 When we compare *low-income private tenants in receipt of government assistance with the other low-income private tenants* (those who did not receive government assistance), we find that the receipt of government assistance had no apparent positive effect on non housing outcomes. Low-income private tenants on government benefits, relative to other low-income private tenants, do not appear to be better off with regard to the non housing outcomes (see Table 17). Put simply, the group in receipt of government assistance was not better off, as the housing-non housing outcomes thesis would have us believe.

4.8.8 When we compare *public housing tenants with low-income private tenants not in receipt of government assistance*, we find a marked difference. Public housing tenants appear to be considerably worse off than these low-income private tenants, suggesting that government assistance did not – in terms of these broad outcomes – have any marked positive effect (see Table 18). Public housing tenants are worse off with regard to social exclusion, perceived quality of life, the health index, perceived health, anomie, fear of crime, and education. However, public housing tenants were also more likely to have a localized life; to live within a stronger 'community'.

4.8.9 Finally, Table 19 provides a comparison between *public housing tenants and low-income private tenants in receipt of government assistance.* Some differences are apparent, but public housing tenants are worse off than those in receipt of other assistance, specifically with regard to fear of crime, perceived health, health index, anomie, and education. However, there are no significant differences between the two tenure groups with regard to social exclusion, perceived quality of life, community, and experience of crime.

4.8.10 In sum, while we need to be cautious in our interpretation, the analysis does suggest that public housing tenants and those low income private tenants in receipt of government assistance are not better off with regard to the non housing outcomes when compared with low income private renters who did not receive assistance, and when controlling for the influences of age, household income, and ethnicity. Rather, the trend appears to be in the opposite direction: low income private tenants not in receipt of assistance appear to be better off.

Of course, positive changes may have occurred with regard to each of these non housing outcomes for those in receipt of government assistance, but these would not have been sufficiently large to change households' position relative to other tenure groups. Public housing tenants and low income private tenants in receipt of government assistance, relative to the other tenure groups and low income private renters who received no government assistance in particular, experienced more difficulties. This finding, then, suggests that housing assistance has no *fundamental* effect, even if some change may have occurred.

Table 17: Regressions showing the effects on non-housing outcomes for low income private tenants who receive social security vs low income private tenants who do not receive social security

	Enter: Age, HH Income, Ethnicity			Enter: Age, HH income, Ethnicity & the two tenure groups					
Dependent Variable	**R step 1**	**R^2 step 1**	**F step 1**	**R^2 Change**	**R step 2**	**R^2 step 2**	**F step 2**	**ß Comparing the two tenure groups**	**t ratio**
Quality of Life	.2589	.0670	3.090*	.0184	.2922	.0854	2.988	-0.1383	-1.60
Anomie	.2053	.0421	1.877	.0291*	.2669	.0712	2.436	.1735	2.00*
Social Exclusion	.5453	.2973	18.196****	.0195	.5629	.3168	14.841****	.1425	1.91
Community Count	.1321	.0175	.764	.0308*	.2196	.0482	1.622	.1791	2.03*
Highest Level of Education	.3725	.1387	6.820****	.0132	.3898	.1519	5.643****	-.1170	-1.40
Fear of Crime	.299	.089	4.110**	.002	.302	.091	3.126*	-.0434	-.50
Experience of Crime	.233	.054	1.239	.002	.236	.056	.943	.0396	.32
Perceived Health	.1241	.0154	.672	.0110	.1626	.0264	.869	-.1073	-1.20
Health Index	.0350	.0012	.052	.0232	.1563	.0244	.795	-.1554	-1.74

*p<.05, **p<.01,***p<.001, ****p<.0001

Table 18: Regressions showing Public Housing Tenants vs low income private tenants who receive no Social Security payments

	Enter: Age, HH Income, Ethnicity			Enter: Age, HH income, Ethnicity & tenure (Housing Commission and low income private renters without social security				
Dependent Variable	**R step 1**	**R^2 step 1**	**F step 1**	**R^2 Change**	**R step 2**	**R^2 step 2**	**F step 2**	**ß Comparing the two tenure groups**	**t ratio**
Quality of Life	.3883	.1508	4.144**	.1098**	.5105	.2606	6.079***	-.3458	-3.20**
Anomie	.1800	.0324	.770	.1379**	.4127	.1703	3.490*	.3870	3.36*
Social Exclusion	.5711	.3262	11.295****	.1008***	.6534	.4269	12.851****	.3313	3.48***
Community Count	.3182	.1012	2.628	.1099**	.4594	.2111	4.616**	.3459	3.10**
Highest Level of Education	.3107	.0966	2.458	.1198**	.4651	.2164	4.963**	-.3596	-3.22**
Fear of Crime	.3397	.1154	2.913**	.1155**	.4805	.2309	4.954***	.3541	3.15**
Experience of Crime	.3374	.1138	1.841	.0001	.3376	.1140	1.351	-.0114	-.08
Perceived Health	.1127	.0127	.3000	.1286**	.3758	.1413	2.838*	-.374	-3.21***
Health Index	.2300	.0530	1.306	.1940****	.4970	.2470	5.668**	-.4601	-.422****

*p<.05, **p<.01,***p<.001, ****p<.0001

Table 19: Regressions showing differences in tenure types: Public Housing tenants vs low income private tenants who receive social security payments

	Enter: Age, HH Income, Ethnicity				Enter: Age, HH income, Ethnicity & the two tenure groups				
Dependent Variable	**R step 1**	**R^2 step 1**	**F step 1**	**R^2 Change**	**R step 2**	**R^2 step 2**	**F step 2**	**ß Comparing the two tenure groups**	**t ratio**
Quality of Life	.2932	.0859	4.356**	.0248	.3328	.1107	4.296**	-.1591	-1.96
Anomie	.2287	.0523	2.556	.0290*	.2850	.0812	3.050*	.1719	2.09*
Social Exclusion	.4648	.2160	12.765****	.0061	.4713	.2221	9.851****	.0791	1.04
Community Count	.1094	.0120	.562	.0149	.1640	.0269	.953	.1234	1.45
Highest Level of Education	.3315	.1099	5.680***	.0248*	.3670	.1347	5.332***	-.1592	-1.98*
Fear of Crime	.1678	.0282	1.285	.1149****	.3783	.1431	5.511****	.3433	4.21****
Experience of Crime	.2530	.0640	1.869	.0077	.2677	.0717	1.563	.0888	.82
Perceived Health	.1559	.0243	1.155	.0280*	.2287	.0523	1.904	-.1691	-2.02*
Health Index	.1871	.0350	1.668	.0563**	.3021	.0913	3.440**	-.2403	-2.91**

*p<.05, **p<.01,***p<.001, ****p<.0001

4.9 Tenure and Attitudes towards Residential Life: An Analysis of Variance

4.9.1 Finally, we will expand the analysis a little by examining the link between the tenure groups and attitudes towards material aspects of residential life: environmental quality; residential necessities; access to shops, recreational services; infrastructure services; education services; health services; and transport. All of these variables are defined above.

4.9.2 This analysis is important because research on whether housing affects non housing outcomes is now increasingly swinging towards understanding the effects of location on these outcomes. A community providing good material resources, such as extensive education services, good public transport, and adequate health services, will contribute better outcomes – such as higher levels of perceived well-being – than a community with poor resources. Thus, do public housing tenants and low income private renters in receipt of government assistance perceive these resources to be adequate for their purposes?

4.9.3 Logically, the pattern we observed for the non-housing outcomes should also be evident from an ANOVA on these aspects of residential life. Yet, there were statistically significant differences between the tenure groups only with regard to four material aspects of material life: residential necessities; recreational services; infrastructure services; and inadequacy of public transport (see Table 20). There were no statistically significant differences between tenure groups in terms of environmental attitudes, their views on access to shops, their attitudes towards educational services, their views on health services, and their views on the car as a mode transport.

4.9.4 Public housing tenants and low-income private tenants were more likely to be the most critical of only one of these - residential necessities – with the former being the most critical, followed by the latter (Table 20). Public housing tenants were also the most critical of recreational services.

4.9.5 Owner occupiers were the most critical of infrastructure services, followed by ‘other low income private tenants’. ‘Other tenants’ were the most critical of public transport adequacies, followed by other private tenants.

4.9.6 Therefore, government assisted housing tenants’ views on a range of community facilities were, for the most part, little different from other tenure groups.

TABLE 20: Analysis of Variance: Tenure and Attitudes towards Residential Life (mean scores)

Tenure	Environmental Quality	Residential Necessities	Access to Shops	Recreational Services	Infrastructure Services	Education Services	Health Services	Difficult without a car	Inadequacy of public transport
Owner Occupier	2.0084	2.0400	1.9539	1.5177	2.0922	3.5091	3.4576	3.2742	3.1872
Purchaser	2.0071	1.9451	1.8732	1.4053	1.8659	3.4755	3.3068	3.3593	2.9604
Public housing tenant	1.7381	1.5610	1.8333	1.3023	1.9973	2.9474	3.2381	3.0233	3.2727
Low income private tenants on government benefits	2.0000	1.7600	1.9200	1.4257	1.9608	3.4842	3.5306	3.1188	3.2947
Other Low income private tenants	2.2258	2.0625	1.9375	1.3750	2.1250	3.4138	3.3333	3.0625	3.3226
Other private tenant	1.8867	1.8995	1.8473	1.4229	1.9113	3.4451	3.4603	3.0693	3.3368
Other	2.0294	1.8788	1.9412	1.3235	2.1176	3.2333	3.5484	3.2121	3.8788
Total	1.9855	1.9477	1.9041	1.4446	1.9787	3.4595	3.4067	3.2434	3.1431
	P=.110	**P=0.002**	P=0.705	**P=0.002**	**P=0.001**	P=0.101	P=.241	P=.132	**P=0.013**

Bold = statistically significant at least at 0.01

5. DISCUSSION AND CONCLUSION

5.1 The ANOVAs, the multiple regression analysis, and the hierarchical linear regression analysis show a clear relationship between the housing system, defined here by tenure groups, and the nine non-housing outcomes. The position of public housing tenants and low-income private tenants receiving government assistance, in particular, was clear: measures of disadvantage were emphatically associated with these groups. Moreover, the multiple regression analysis identified these two tenure groups as significant predictors of a number of non-housing outcomes related to disadvantage.

5.2 When we considered the three low income tenure groups – public housing tenants, low income private tenants in receipt of government assistance, and other low income private tenants – and controlled for age, household income, and ethnicity, we found that those in receipt of assistance were not better off than low income private tenants not in receipt of assistance. The housing-non housing outcomes thesis would lead us to believe that those in receipt of government assistance would be better off than low income private tenants who receive no assistance.

5.3 While a cross-sectional analysis, like the one undertaken here, does not enable the measurement of change, it can be suggestive of change. In particular, in the current situation, if government assistance had major positive impacts upon recipients' well being, these should be reflected in relatively few differences between these recipients and other tenure groups. Instead, public housing tenants and low-income private tenants on benefits tended to have the worse outcomes. Certainly, we were unable to measure whether there were improved outcomes following improved housing because our data does not allow us to do this, but the relative position of the two government assisted groups is clear.

5.4 While public housing tenants and low income private tenants on government welfare are, by definition, disadvantaged, they scored poorly on all outcomes with the exception of community for public housing tenants. These tenants' high community score may relate to the fact that they are clustered geographically, thus bringing them together for mutual assistance, and because their lives may be localised by necessity. Low income private tenants on government assistance are less concentrated and this may contribute to their lower community score.

5.5 Thus, until detailed longitudinal data become available there is need for caution in claiming that improvements in housing *per se* bring about *significant* non housing outcomes.

5.6 In making this policy comment, we are not denying that improvements in housing could lead to improvements in non housing outcomes – and there is a limited literature suggesting that this is the case. However, the level of improvement may be comparatively small: for example, tenants' health may have improved, but their health status relative to the population as a whole may have remained unchanged. The key issue here, then, is the *magnitude* of the change.

5.7 From these findings and conclusions, it would seem wise to directly tackle the root cause of disadvantage if improvements in non housing outcomes are to be made. Necessary action would need to relate, for example, to job skills/education, behavioural changes (e.g. re health), and ways of changing values (e.g. valuing education specifically and intellectual work in particular).

5.8 Thus, our results clearly highlight the importance of a whole of government approach. Such an approach would tackle housing problems together with other problems: those of health, education, crime, quality of life, and so on.

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