

Social Exclusion in Queensland: Measurement, Cost and Policy Options

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Abstract

Social exclusion is the result of a set of problems faced by an individual and their dependents which collectively prevent them from participating in the normal activities of society or from enjoying a standard of living that is regarded as acceptable by community standards. The causes of social exclusion are multifaceted but a pre-eminent factor for adults is non-participation in the labour market. From this factor, many other consequences of social exclusion can be traced. This report examines the incidence and determinants of social exclusion in Queensland with a view to informing remedial public policy. The Report uses an experimental methodology which combines principal component and multinomial logit analysis. The results highlight the multidimensional nature of social exclusion.

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Executive Summary

- A recently observed phenomenon in western economies is that of social exclusion, a condition that arises when some sections of the community become increasingly marginalised in an economic and social context despite the fact that their host society is experiencing economic prosperity. In particular, not only does their share of the gains from economic growth decline but they actually fall further behind the average standard of living.
- Groups such as the socially excluded are important, not only in their own right, but because they place higher costs and ultimately higher tax burdens upon society as a result of their greater propensity to access publicly funded health services, social security and justice services and because they represent quasi-permanent costs.
- The other important point about the socially excluded is that they are not served well by traditional policies which are often based around one specific issue. This is because they display a range of personal characteristics and issues which require simultaneous action across a range of issues.
- In recent times, social exclusion has been seen as being synonymous with the so-called NEETS (persons aged 16-24 years) who are not in either employment, education or training.
- Part of the reason for this lies in the relative ease of identification of this group and as well as the tendency in previous studies to equate social exclusion with one or two major characteristics such as unemployment or homelessness.
- Yet common sense tells us that as the proportion of the population occupied by the youth cohort falls, we should expect to find social exclusion spread out across a range of age groups.
- Similarly as the characteristics of social exclusion expand to include such things as housing stress, health characteristics and social amenity it would also be expected that the types of people identified as excluded would go beyond the younger age groups.
- Currently there are several sources available for measuring the extent of social exclusion, including the index of relative socio-economic disadvantage (SEIFA). At present this index indicates that 18% of the Queensland population are in either the lowest or second lowest decile, a characteristic which may lead them to be called socially excluded.

- With this type of background estimate to act as a guide, the study set out to construct a measure of social exclusion that would provide both a quantitative estimate of the numbers and characteristics of those involved as well as provide a mechanism for policy simulation.
- This was achieved by using Principal Component Analysis (PCA) across a range of economic, social, housing, financial, health and neighbourhood variables to achieve a social exclusion index and then using multinomial logit analysis to determine the likelihood of a person belonging to the majority (non-excluded) group (estimated at 84% of the working age population), a socially excluded group (6%-7%) - representing the most multi-disadvantaged) and an at-risk group (8%-9%) representing those in danger of becoming excluded.
- After successfully testing the robustness of this procedure on unit record data from the 2001 Census, the technique was used on HILDA wave 2 data and generalised across the population as a whole. This procedure yielded base-rate estimates of 85.4% (non-excluded), 8.2% (at risk) and 6.4 (excluded). These constituted 230,000 persons that might be classified as excluded and another 305,000 persons at risk. The estimates of the wholly or partially excluded constitute 14% of the total population somewhat lower than the SEIFA index of 18%
- In terms of the broad characteristics, there was significant age asymmetry with those in these groups being either in the below 24 years age group or in the 45+ age group. The surprise here being that those aged 45+ comprised 62% and 58% of the excluded and at-risk groups, with those aged 16-24 years comprising 26% and 29% respectively. Females were in the majority in both groups; 62% and 61% respectively. Sixty-two percent of the excluded had a significant disability or health issue, compared with 45% of the at-risk group.
- Importantly, only 43% of those identified as excluded were currently accessing any social security benefit compared to 70% for the at risk group.
- In terms of the relative contribution to the SEID, the singularly most important variable was housing stress felt by 95% of the excluded and 83 percent of the at risk (compared to 17% of the non-excluded), with other major contributing factors being lack of work experience (91% and 83%), unemployment or under-employment (88% and 74%), low education (82% and 62%), early school leaving (81% and 55%) having a disability or significant health issue (65% and 47%) and lack of financial and credit capabilities (63% and 47%).

- The only hypothesised variables not to contribute strongly to the SEID were neighbourhood variables such as neighbourhood safety and amenity.
- The report then moved to quantify the costs of full and partial exclusion but made a conscious attempt to avoid the double counting and exaggeration that attaches to many such exercises. It also recognised that many parts of society provide professional services to the socially excluded and, in purely economic terms, may face a loss of earnings if the problems associated with social exclusion suddenly disappeared. In other words the benefits of reducing social exclusion need to be discounted by the potential loss of earnings by others in society.
- Towards this end four sources of clear cut loss were evaluated; productivity loss (measured as foregone potential earnings), loss of potential tax revenue, savings on social security and savings on preventable health costs.
- The following estimates of avoidable loss (costs) per annum were derived; productivity \$1.5 Billion (excluded) and \$3.3 Billion (at-risk); tax loss (\$994 Million and \$2.13 Billion); social security savings (\$562 Million and \$1.04 Billion) and avoidable health costs (\$798 Million and \$565 Million).
- In terms of individual health costs it was estimated that the average operating costs (including borrowings) of health services in Public Hospitals for one excluded person was \$3471.7 above the average for the non-excluded (\$1157.2). For one at-risk person it was \$2314.4 above the average for non-excluded persons.
- The extensive potential savings shown indicate that it would be both socially and economically responsible to devise policies to reduce full or near exclusion. Research shows that policies designed to address housing stress, labour market problems, education and training, health and financial capabilities are the most likely to be successful.

1. Introduction

Despite the strong economic conditions that have prevailed in most western countries, inequality and disadvantage continue to exist and in some circumstances represent a growing social and economic problem. The current and extended period of economic prosperity in most western countries has in some ways created its own problems. Paradoxically, prosperous times tend to expand inequalities and make disadvantage more apparent. At the same time the persistence of disadvantage is more difficult to explain. For example, in times of high labour demand, why are some people seemingly unemployable? Increasingly, this existence of disadvantage amidst plenty is being linked to theories of social exclusion.

Economists have, for a long time, explained economic outcomes by reference to insiders and outsiders². Arguably the contrast between insiders and outsiders has grown in recent years as the prerequisites for success have increased. The minimum requirements for insider entry in contemporary society are to have post-school qualifications and be computer literate. Insiders tend to congregate together, often through marriage or cohabitation with other insiders, creating a web of expectations and consumption levels beyond the capacity of those in single job households or no job households³.

To call people socially excluded is different from calling them poor and disadvantaged. The poor and disadvantaged have always been present in society but the solutions to their problems have normally been seen as economic and one-dimensional; issues that could be solved relatively easily by providing a job, a tax concession or specific government program. However, those that we refer to as socially excluded in contemporary Australia are not just poor in an economic sense; they are essentially without the means to end their exclusion either through lack of employability, cultural and ethnic barriers or barriers of poor physical and intellectual health.

This group of socially excluded persons provides considerable challenges for Government policy because their situations do not necessarily improve during times of economic prosperity, often becoming worse, at least in a relative sense. This study into the incidence and determinants of social exclusion uses a hybrid and multi-dimensional approach to an issue which in the past has been seen in one-dimensional terms. The techniques used here are in recognition to the

² See, Borjas, G (2000) for a review of insider/outsider theories.

³ Such as the working poor

underlying belief that social exclusion is not simply a matter of the labour market but is presented across a wide variety of issues in which some citizens are prevented from participating in a range of other social and cultural issues, the upshot of which is to restrict the development of themselves and their families. In other words, social exclusion goes beyond the traditional concepts of poverty (many people are poor at some stage of their lives) to consider the broader aspects of social and economic participation in an increasingly complex society.

While much has been written about social exclusion it has proven harder to quantify specifically because it is a multi-dimensional concept. A number of techniques have been used; normally these involve statistical exercises that attempt to associate a collection of variables that reflect *outcomes or achievement*, such as occupation type, income, consumption levels or assets with a number of *capabilities* variables such as mental and physical health, educational capacity, literacy and numeracy. These methods often encounter the serious problem of weighting the variables according to their importance, a particularly difficult task given that the drivers of social exclusion may vary across groups and individuals. Alternatively, a single indicator of social exclusion is chosen, such as low income or long term joblessness and the factors that increase the probability of this outcome is seen as the drivers of social exclusion. Ideally we need a method that assigns weights independently of the biases of the researcher but that also allows systematic probability measurement. Further, we need to trace shifts in social exclusion over a period of time, both for its own sake and to test the impact of policy on reducing the levels of exclusion.

An additional problem associated with the measurement of social exclusion is that it can exist in an outwardly buoyant economy and as a result can prove resistant to purely economic stimulus. Persons who can't find work at the top of an economic cycle are constrained by a number of factors, not just economic. However, when economies start to fluctuate downwards, as historically they have always done, the plight of those socially excluded becomes even more intractable as those temporarily unemployed crowd them out at the top of the exclusion tree.

This paper represents an initial attempt at measuring social exclusion in Queensland, but while the research is promising, the results should be regarded as experimental and preliminary.

2. The Nature of Social Exclusion

2.1 What is Social Exclusion?

In the academic debate, concepts of poverty, inequality and social exclusion are closely related. Poverty, a highly contested concept on its own, may be regarded as a state of deprivation where one's standard of living has fallen below some acceptable minimum⁴. Poverty, in a relative sense, implies an uneven distribution of, or access to, economic resources and therefore exists hand in hand with inequality. Social exclusion however, is a broader concept than just poverty or inequality. One can be poor without necessarily being excluded, or excluded, without being poor.

Literature analysing the nature of social exclusion notes two different approaches. The first approach relies on a notion of deprivation. Townsend's broad definition of poverty as a "lack of resources necessary to permit participation in the activities, customs and diets commonly approved by society", notes the effect that being in poverty has on the ability to meet societal norms and standards⁵.

Sen's approach considers poverty and social exclusion as the lack of necessary capabilities to function successfully in society⁶. According to Scutella this 'capabilities approach' is a multidimensional approach that stems from the belief that deprivation should not focus on the lack of resources or on the lack of means to achieve but rather on what people would be able to do or be with those resources⁷. Thus expanding the capability and opportunity to enjoy good health, to be literate and to participate in society enhances personal freedom.

Both approaches note the effect or consequences of being socially excluded. Thus, social exclusion has important characteristics which set it apart from a measure of poverty or inequality. Most definitions of social exclusion point to its multidimensional nature, noting that it results from a set of problems or disadvantages. Its effect is to prevent an individual or a family from fully

⁴Harding, A., Lloyd, R., and Greenwell, H. (2001) *The Persistence of Poverty in a Decade of Growth: Financial disadvantage in Australia, 1990 to 2000*, paper commissioned by The Smith Family: Australia.

⁵Saunders, P. (2005) Social Exclusion as a New Framework for Measuring Poverty, in *Community and Local Governance in Australia*, Smyth, P., Reddel, T. and Jones, A. (eds), UNSW Press: Sydney and Daly, A., McNamara, J., Tanton, R., Harding, A. and Yip, M. (2006) *Indicators of Social Exclusion for Australia's Children: an Analysis by State and Age Group*, Paper presented at the University of Queensland Social Research Centre Opening and Conference, July 2006.

⁶Sen, A (1987) *The Standard of Living*, Cambridge University Press: Cambridge.

⁷Scutella, R. (2005) Who are the disadvantaged? Poverty measurement 30 years after Henderson, in *Brotherhood Comment*, Brotherhood of St Laurence, April.

participating in society. The nature of social exclusion also usually relates to a long-term, persistent non-participation in the norms of society.

These characteristics are noted in the definition of social exclusion used by the British Social Exclusion Unit (SEU) established by the UK government in 1997:

Social exclusion is about more than income poverty. It is a shorthand term for what can happen when people or areas face a combination of linked problems, such as unemployment, discrimination, poor skills, low incomes, poor housing, high crime and family breakdown. These problems are linked and mutually reinforcing⁸.

Saunders discusses important dimensions of social exclusion which set this concept apart from a consideration of poverty and inequality⁹. He notes that a definition of social exclusion:

- relates to families, not just individuals;
- is multidimensional and reflects a combination of inter-related problems, that are mutually reinforcing;
- focuses on causes outcomes and processes, and
- is not just a consideration of use of available resources at a given point in time?

Bradshaw¹⁰ notes the following four dimensions of the concept of social exclusion.

- consumption: the capacity to purchase goods and services, as constrained by low income relative to need;
- production: lack of participation in economically or socially valued activities;
- political and social engagement: lack of involvement in local or national decision-making, and
- social interaction: lack of emotional support or integration with family, friends or community.

His approach to conceptualising social exclusion highlights how the lack of capability leads to a level of deprivation¹¹.

⁸ Bradshaw, J., Kemp, P., Baldwin, S. and Rowe, A. (2004) *The Drivers of Social Exclusion: A review of the literature for the Social Exclusion Unit in the Breaking the Cycle series*, Office of the Deputy Prime Minister: UK, page 13.

⁹ Saunders, P (2005) Social Exclusion as a New Framework for Measuring Poverty, in *Community and Local Governance in Australia*, Smyth, P., Reddel, T. and Jones, A. (eds), UNSW Press: Sydney.

¹⁰ OpCit

Within the literature discussing the nature of social exclusion and how to define it, the multidimensional aspect of the concept of social exclusion stands out as being of central importance. Social exclusion is a set of problems or disadvantages which interact to result in ongoing problems. The presence of a single element may not be enough to result in exclusion. One can be low skilled or have low educational attainment, without being unemployed. Or, a single element may simply reflect personal choice. As Saunders notes in relation to Bradshaw's research, a lack of involvement in political processes may reflect a personal choice (a lack of interest) rather than exclusion¹². The multidimensional approach is important then for the measurement of degrees of social exclusion and it is central to our analysis of the drivers of social exclusion.

2.2 The Drivers of Social Exclusion

What causes social exclusion? If social exclusion is a multidimensional concept do any drivers contribute more significantly than others? A literature review by the University of York for the British SEU identifies various factors which contribute to social exclusion.

The overall proportion of people in social exclusion will be affected by macro-economic conditions in the economy. Macroeconomic factors which influence social exclusion include:

- demographics (youth unemployment, ageing, lone parents) and in the future, fertility, ageing and lone parents;
- the labour market (an increase in low pay and increase in wage dispersion), increase in self-employment, increased flexible, episodic and insecure work contracts such as part-time and casual work, fixed-term contracts; and
- social policy failed to protect against the impact of the micro drivers of social exclusion.

The risk of being in social exclusion for an individual or a family, however, will be influenced by a range of microeconomic factors, which are discussed below.

¹¹ Bradshaw, J., Kemp, P., Baldwin, S. and Rowe, A. (2004) *The Drivers of Social Exclusion: A review of the literature for the Social Exclusion Unit in the Breaking the Cycle series*, Office of the Deputy Prime Minister: UK

¹² Saunders, P. (2005) *Social Exclusion as a New Framework for Measuring Poverty* page .250.

2.2.1 Low Income

There is a close association between poverty and social exclusion. Low income is associated with an inability to afford items that the majority of people in society would consider necessities. In studies of children, poverty was associated with poor general and dental health outcomes, poor environment and housing, homelessness, poor educational attainment, youth suicide and mental illness. Individuals and families who are most at risk of having low incomes are those that are unemployed or inactive in the labour market.

2.2.2 Unemployment

According to the SEU, the labour market is central to social exclusion. Inactivity in the labour market is an important indicator of social exclusion. It is also a key driver of other indicators of social exclusion, such as poverty, homelessness and physical and mental ill health. The unemployed are not the only persons at risk of social exclusion. The literature review for the SEU also found that people in low-paid jobs were also likely to suffer the effects of persistent poverty. There was considerable overlap between the groups of persons most likely to be unemployed and those groups most likely to be in low paid jobs. Persons most likely to be excluded from the labour market included: women, especially lone parents; young people; older male workers; long-term sick and disabled people; people from ethnic backgrounds; and people with no work experience and low qualification or skill levels.

In Australia, research by Lloyd et al¹³ also found that there is a risk, albeit a low risk, of poverty among the working population. Of those in poverty, 10.7 % were people whose main source of income is wages and salaries¹⁴. Importantly, the researchers note that the risk of being in poverty among wage and salary earners is low but, because wage and salary earners comprise a large share of Australian families, this small risk still represents a significant number of people. Restricting the comparison to persons of labour force age, as a percentage of Australians aged 15 and over in poverty by labour force status, 4 % of full-time workers experience financial disadvantage and comprise a substantial 16 % of those in poverty. This indicates that working poverty exists even among those with full-time jobs.

¹³ Lloyd, R, Harding, A, and Payne, A (2004) *Australians in Poverty in the 21st Century*, paper prepared for 33rd Conference of Economists, 27-30 September.

¹⁴ Ibid

Figure 1.1: Estimated poverty rates for people aged 15 and over by labour force status, 2001.

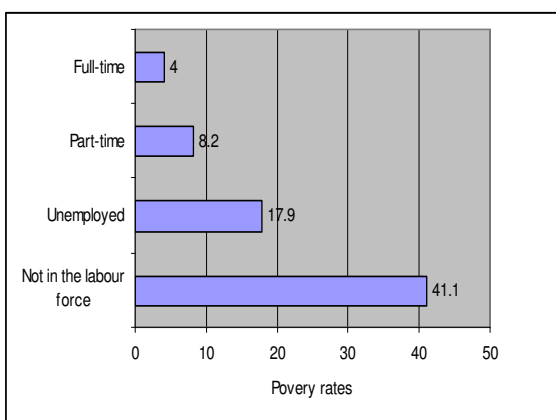
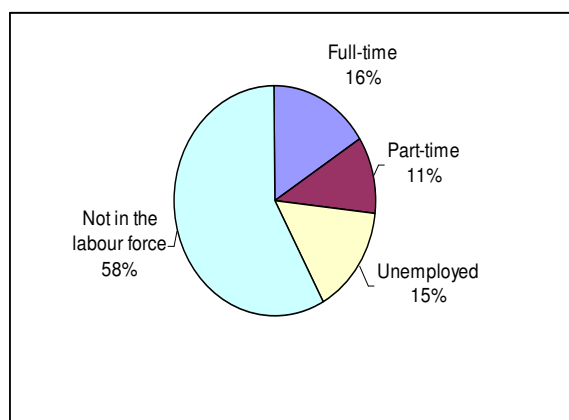


Figure 1.2: Australians aged 15 and over in poverty, by labour force status, 2001.¹⁵



Lloyd et. al. conclude:

While the link between work and prosperity is unsurprising, other areas of analysis demonstrated that employment, in the simple sense of not being unemployed, was not always enough to guarantee financial security. Poverty persisted, albeit to a much lesser extent, amongst those in part-and full-time employment. It was shown that part-time work in particular did not necessarily represent freedom from poverty.

The methodology, and in particular the half-median measure of poverty used by the researchers, has been criticised. However, it is surprising that any level of poverty should exist among employed persons., demonstrating that in modern society employment is not always enough to ensure an escape from poverty.

Recent research confirms that while unemployment continues to be a major cause of poverty in Australia, employment only provides an escape when it comes in the form of a full-time job¹⁶. Because many of the new jobs created over the last two decades have been either part-time or casual and have not been sufficient by themselves to protect workers and their families from poverty.

2.2.3 Education

Evidence from the literature review for the SEU suggests that education plays a pivotal role in social exclusion, in particular as a predictor of labour market success. Attainment in basic

¹⁵ OpCit

¹⁶ Saunders, P. (2005) *The Poverty Wars: Reconnecting Research with Reality*, UNSW Press: Sydney.

numeracy and literacy skills and in basic qualifications enables labour market participation and prevents social exclusion. Thus, educational attainment has indirect links to health, social participation, interaction and motivation. Various factors drive the likelihood of educational attainment, including child and family characteristics, school factors and locality.

In Australia, socio-economic disadvantage has also been found to lead to early school departure. Emerson notes that 36% of Australian students from low socio-economic backgrounds leave school before completing year 12, compared with only 12% of students from high socio-economic backgrounds¹⁷. Students in poorer communities typically attain lower results at every level of schooling compared to their more fortunate counterparts. As noted in the literature review for the SEU, educational attainment enables labour market participation. Australian data also shows the clear link between education and employment. Emerson notes that around 60% of 15 to 24 years who leave school early are not employed¹⁸. Almost 30% of those who had Certificate I and Certificate II qualifications are not employed. By comparison, only 16% of high school finishers and 13% of advanced trade certificate holders are not employed, against just 11% of university graduates fall into this category.

Research by Harding demonstrates the impact of poor educational attainment on the risk of being in poverty¹⁹. As shown in Table 1.1 below, poverty rates among those aged 15 years and over decline sharply as educational qualifications increase. Those with university qualifications (bachelor degree or higher) remained relatively immune from poverty (6% in 2000), followed by those with a diploma, certificate or trade qualification (10.5%). Those with no post-secondary school qualifications have seen their poverty risk increase from 12.1% in 1990 to 14.7% in 2000.

¹⁷ Emerson, C (2006(a)) *Vital Signs, Vibrant Society*, UNSW Press, Sydney.

¹⁸ Emerson, C (2006(b)) *Squandered Opportunity*, Address to the Melbourne Institute's 2006 Economic and Social Outlook Conference "Making the Boom Pay: Securing the next generation of prosperity, 2-3 November.

¹⁹ Harding, A, Lloyd, R, and Greenwell, H (2001), *The Persistence of Poverty in a Decade of Growth: Financial disadvantage in Australia, 1990 to 2000*, Paper commissioned by The Smith Family Australia.

Table 1.1: Estimated Poverty Rates by Highest Education Qualification for Persons Aged 15 and over (using half average income)

	1990	1995	1996	1998	2000
	% poverty rate				
No post secondary qualification	12.1	12.2	13.0	13.6	14.7
Still at school	14.2	11.9	16.0	16.1	14.0
Diploma, certificate, trade qualification	8.7	9.8	10.2	10.6	10.5
Bachelor degree or higher	6.0	7.4	6.8	8.1	6.0

Note: The poverty rate is calculated using a half-average income measure.

2.2.4 Ill-Health

Health plays an important part in an individual's quality of life and social and economic status is a significant determinant of health and wellbeing. According to the Australian Institute of Health and Welfare (AIHW), while there have been significant health improvements for Australians in recent decades these improvements have not been distributed equally across all sections of the population²⁰. People who are poorer or socio-economically disadvantaged in other ways generally live shorter lives and suffer more illness and reduced quality of life than those who are well-off. Using the ABS Census based Index of Relative Socioeconomic Disadvantage the AIHW calculates that, a boy born in 2002-01 in the lowest quintile of disadvantage could expect to live 3.6 years less than a boy born in an area of least disadvantage. At birth, the life expectancy of a girl born in an area of greatest disadvantage was 82.1 years compared to 84.5 years for a girl born in an area of least disadvantage. The AIHW report also shows that people from lower socio-economic groups have higher rates of mortality over and for more causes of death. For males aged 25 to 64 years living in areas of most disadvantage, the death rate was 1.8 time higher than the overall mortality rate (for females aged 25 to 64 years the mortality rate was 1.5 times higher).

Children living in disadvantage are also more likely to suffer from health problems than those living in advantaged communities. In general, the children of poor parents have more visits to the doctor and to hospitals, have more chronic conditions and their dental health is worse. Furthermore, children born into poor families often start with below average birth weights, are likely to be less well nourished, do less well in school, are more prone to sickness and are more

²⁰ Australian Institute of Health and Welfare (2006) *Australia's Health 2006*, AIHW Cat. no. AUS 7, page 232.

likely to become overweight and do less exercise than other children²¹. Ill-health and its relating factors can lead to a compounding of poverty because they reduce an individual's capacity to take up opportunities such as employment and training, resulting in a cycle of poverty that is difficult to overcome.

2.2.5 Housing and Homelessness

In Australia, home ownership has become one of the most obvious measures of an individual's financial success. Housing plays a critical role in determining whether or not people live in poverty and as outlined by the Senate Inquiry²², it can provide a suitable base for people to find a job, undertake study and training, participate in family and community activities, and access local services. However for most people, especially those struggling on low incomes, home ownership is merely a dream.

The cost of housing is a major contributor to poverty with rates increasing significantly once housing costs are considered. A report commissioned by the Smith Family estimated that in 2000, 17.5% of the population were in 'after housing' poverty compared with 13% prior to housing costs being taken into account²³. Housing is usually the single greatest cost facing households and for the poor, it is a more significant proportion of their income than for middle and higher income earners, thus increasing the relative deprivation suffered by lower income households. Households in the bottom quintile of the income distribution are especially vulnerable to 'housing stress', which refers to people who pay 30% or more of their household income in housing costs²⁴. The Australian Council of Social Services (ACOSS) reports that about a quarter of a million people are currently in housing stress and if this trend continues, by 2020 this figure will reach one million²⁵.

Homelessness is the most extreme form of social exclusion in housing. The literature review for the SEU identifies structural causes such as shortages in the availability of public housing, as well as factors which increase the risk of homelessness for individuals and families, such as family background, institutional history, other socioeconomic factors (such as rent arrears, debts

²¹ Swan, W (2005) *Postcode: The splintering of a nation*, Pluto Press, North Melbourne

²² Senate Community Affairs References Committee, 2004, *Report on Poverty and Financial Hardship*, Commonwealth of Australia, page 122.

²³ Harding et al, (2001) p. 18)

²⁴ OpCit

²⁵ See, ACOSS (2003). page 145.

and unemployment) and health factors. The risk of homelessness may be increased by the presence of these characteristics, but homelessness itself may increase the risk that an individual will take on these characteristics (particularly health issues such as poor physical and mental health).

The Australian Bureau of Statistics (ABS) estimates that at June 2001, there were 14,200 homeless persons in Australia. A further 14,300 people were staying in emergency or transitional housing and 48,600 people were staying with a friend or relative. Finally, 22,900 people were living in boarding houses to make the total homeless count 99,900 persons on census night 2001²⁶. Close to half of the homeless were under the age of 25 years (46%), with the majority of this group aged between 12 and 18 years (26% of all homeless people). There were more males than females (58% compared with 42%) and a considerable proportion of homeless Indigenous Australians. Indigenous people made up 19% of those sleeping rough, 11% of those in supported accommodation, 7% of those in boarding houses and 3% of those staying with friends or relatives²⁷.

People who experience homelessness can become disenfranchised and dislocated from society. This loss of opportunity and financial loss is borne by the whole community. There are significant costs to government that result from people remaining in the homeless system. The Queensland Department of Housing asserts that support in attaining stable and secure housing allows people to address other needs, such as physical and mental health, educational and vocational needs.

2.2.6 Other Factors and Interrelatedness

The literature review or the SEU notes a myriad of other factors which may drive social exclusion, including transport, neighbourhood effects and crime. But importantly it should be noted that the literature emphasises the inter-related nature of the factors that contribute to social exclusion. For example, ill-health brought about by drug and alcohol abuse may also contribute to an inability to complete basic schooling or maintain vocational training, which reinforces joblessness and welfare dependency. Thus, the SEU concludes:

²⁶ Australian Bureau of Statistics (2001) *Australian Census Analytic Program: Counting the Homeless*, Cat. no. 2050.0

²⁷ Australian Bureau of Statistics (2004) *Australian Social Trends*, Cat. no. 4102.

.....social exclusion is driven by a complex interplay of demographic, economic, social and behavioural factors that are linked and mutually reinforcing. It is cumulative and often intergenerational. The risks of social exclusion are not evenly shared but concentrated in the poorest individuals and communities. A combination of a healthy labour market reduced demographic pressures and policy developments have begun to have an impact on social exclusion²⁸.

3.0 Studies of Poverty and Social Exclusion in Queensland

There have been two major studies of poverty and social exclusion in Queensland. The first study was conducted by the Queensland Government Department of Industrial Relations, which considered the extent of poverty and inequality in Queensland and Australia, as well as the pressures that persisting poverty and inequality are having upon state-based services²⁹. A Report by the University of Queensland's Social Research Centre (UQSRC) for the Queensland Council of Social Service also considered the extent and dimensions of poverty in Queensland³⁰. Analysis of these studies provides the background to this section of the report, which considers estimates of poverty and social exclusion in Queensland.

3.1 Estimates of Poverty in Queensland

The Queensland economy is experiencing a sustained period of economic growth and has outperformed the rest of the Australia in ten consecutive years. The current resources boom has provided the climate for increased business investment, higher levels of consumer demand, record low unemployment levels and faster wages growth. Nevertheless, pockets of poverty and financial disadvantage persist.

²⁸ Bradshaw, J., Kemp, P., Baldwin, S. and Rowe, A. (2004) *The Drivers of Social Exclusion: A review of the literature for the Social Exclusion Unit in the Breaking the Cycle series*, Office of the Deputy Prime Minister: UK, page 103

²⁹ See Queensland Department of Industrial Relations (2006) *The implications of Poverty and Inequality for Queensland: A report by the Cross Agency Poverty and Inequality Working Group*, Queensland Government: Brisbane

³⁰ See University of Queensland Social Research Centre (2006) *Poverty in Queensland*, Report prepared for the Queensland Council of Social Services Inc, October

3.1.1 Income Measures of Poverty

Table 2.1 provides estimates of poverty for each State and territory for 2001, using data from the ABS Household Expenditure Survey and postcode information. The measure of poverty used is the half average disposable income for a household consisting of a couple and two dependent children, with incomes adjusted using an equivalence scale.

Table 2.1 Number of Persons in Poverty and Poverty Rates, by State and Territory. 2001.

State or territory	Number in poverty			Poverty rates		
	Adults number	Children	Persons	Adults %	Children	Persons
New South Wales	367,156	159,928	527,084	8.3	10	8.7
Victoria	278,475	121,199	399,674	8.6	10.4	9.1
Queensland	231,547	102,292	333,839	9.3	11.3	9.9
South Australia	111,106	43,710	154,816	10.6	12.5	11.1
Western Australia	110,451	48,620	159,071	8.7	10.1	9.1
Tasmania	39,363	16,418	55,781	12.2	14.1	12.7
Northern Territory	10,168	6,584	16,752	7.8	11.7	9
ACT	13,220	5,394	18,614	6.4	6.7	6.5
TOTAL	1,161,486	504,145	1,665,631	8.8	10.6	9.3

Source: UQSCR, 2006, page 3.

Queensland has the third highest overall poverty rate at 9.9 %, after Tasmania (12.7%) and South Australia (11.1%). Poverty rates among children in Queensland were also higher than the average for Australia as a whole. Research also indicates that poverty has risen steadily from the 1980s to the mid 1990s, with rates almost doubling during that period. Poverty rates in Queensland have been and continue to be consistently high in comparison with national rates³¹.

3.1.2 Financial Stress Indicators

Indicators of financial stress or financial hardship can also be used to examine patterns of poverty and social exclusions. Used in conjunction with measures of income poverty, they provide a means to further explore types of social exclusion.

The UQSRC report for QCOSS examines indicators of financial stress from the ABS General Social Survey 2003-04 to examine types of financial hardship by equivalised gross household income and by different types of households.

³¹ Senate Community Affairs References Committee, 2004, *Report on Poverty and Financial Hardship*, Commonwealth of Australia, page 52-53

It is not surprising that households in the lowest two income Quintiles are the most likely to experience financial stress (see Table 2.2). Persons in households in the lowest quintile were almost twice as likely as the average for persons in all quintiles to be unable to raise \$2,000 for something important. They were more than twice as likely to go without meals.

Table 2.2: Equivalised Gross Household Income Quintiles by Type of Financial Stress, Queensland 2002

Type of Financial Stress	Quintiles					All
	lowest	second	third	fourth	highest	
Type of Financial Stress	%					
Unable to raise \$2,000 within a week for something important	29.0	19.8	15.3	8.2	2.1	15.2
Had at least one cash flow problem in last 12 months	28.0	31.4	27.6	20.6	9.0	23.5
Unable to pay electricity, gas or telephone bills on time	16.5	18.2	19.6	8.3 (a)		14.2
Unable to pay mortgage or rent on time	9.5	9.4	6.4	3.8 (a)		6.6
Pawned or sold something because cash was needed	8.5	7.0	2.6	1.2 (a)		4.1
Went without meals	5.7	3.1	2.2	0.5 (a)		2.4
Sought financial help from friends/family	12.9	13.9	12.3	8.5 (a)		11.0
At least one dis-saving action (b) in the last 12 months	25.3	30.3	22.7	20.9	13.0	22.5

Notes: (a) Top two quintiles combined.

(b) Dis-saving actions are using assets or increasing or incurring debts in order to pay for basic living expenses (e.g. by reducing home loan repayments, spending savings, increasing the balance on credit cards by \$1,000 or more, borrowing money).

Source: UQSRC, 2006, page 11.

The data in Table 2.3 show that financial stress impacts heavily on single parent families with a dependent child or dependent children. Over 40% of single parent families reported that they could not raise \$2,000 (compared to the average 15.2% of all persons) and nearly one-third could not pay electricity, gas or phone bills on time.

Table 2.3: Household Composition by Type of Financial Stress, Queensland 2002

Type of Financial Stress	Couple only %	Couple with dependent children	Single parent with dependent children	Lone person	All persons
Unable to raise \$2,000 within a week for something important	7.7	13.9	43.8	18.6	15.2
Had at least one cash flow problem in last 12 months	9.2	27.9	43.3	22.3	23.5
Unable to pay electricity, gas or telephone bills on time	5.1	16.3	32.9	13	14.2
Unable to pay mortgage or rent on time	1.8	8.8	15.4	7	6.6
Pawned or sold something because cash was needed	1.7	4.7	11.6	4.5	4.1
Went without meals	0.9	1.0	11.4	5.7	2.4
Sought financial help from friends/family	3.9	12.5	20.8	11.3	11.0
At least one dis-saving action(a) in the last 12 months	15.4	26.4	35.6	21.1	22.5

Note (a): Dis-saving actions are using assets, or increasing or incurring debts in order to pay for basic living expenses (e.g. reducing home loan repayments, spending savings, increasing the balance on credit cards by \$1,000 or more, borrowing money or selling household goods or jewellery).

Source: UQSRC, 2006, page 11.

3.2 Spatial Dimensions

It is important to note that poverty has a spatial dimension. The proportion of high and low income families varies considerably in each of Australia's regions. The UQSRC report for QCOSS notes that the mean equivalised gross household income in major cities is \$577 per week, compared to \$513 per week in inner regional areas and \$529 per week in other areas. However, the UQSRC's analysis of the distribution of equivalised disposable household income by quintiles by region found little difference between capital city areas and the balance of the state (see Table 2.4).

Table 2.4: Federal electoral divisions in Queensland ranked by Australia-wide electoral division poverty rates, 2001

Region	Quintiles				
	lowest	second	third	fourth	Highest
	%				
Capital city	26.0	18.4	19.7	17.7	18.2
Balance of state	26.6	16.1	20.7	20.5	16.2

Source: UQSCR, 2006, page 14.

Table 2.5 shows the 28 federal electoral divisions in Queensland and their poverty ranking in all federal electoral divisions. In Queensland in 2001 five of the 28 ranked among the lowest 20 percent of Australia's electoral divisions. The electorate of Ryan experienced the least poverty (with a poverty rate of 5.4%). The Queensland electorate that recorded the highest rate of poverty rated was Wide Bay (with a poverty rate of 13.8%). By way of comparison, the poorest electoral division in Australia was Braddon (in Tasmania), with a poverty rate of 15.1%.

Table 2.5: Federal Electoral Divisions in Queensland ranked by Australia-wide Electoral Division Poverty rates, 2001

Poverty rate			Poverty rate		
Rank	Electoral division	%	Rank	Electoral division	%
13	Ryan	5.4	89	Kennedy	10.2
24	Brisbane	6.8	90	Groom	10.2
39	Dickson	7.4	100	Fisher	10.5
40	Lilley	7.4	102	Rankin	10.5
41	Bonner	7.6	104	Forde	10.7
44	Griffith	7.8	115	Oxley	11.1
47	Moreton	8.0	116	Dawson	11.2
56	Bowman	8.6	117	Fairfax	11.2
58	Leichhardt	8.6	120	Blair	11.3
60	Moncrieff	8.7	127	Longman	11.7
61	Petrie	8.8	131	Capricornia	12.6
68	Herbert	9.2	134	Maranoa	13.0
75	McPherson	9.5	135	Hinkler	13.0
83	Fadden	9.9	143	Wide Bay	13.8

Note: The rank indicates where the electorate was ranked against all Australian electoral divisions.

Source: UQSCR, 2006, page 3.

Swan's analysis of poverty rates by postcode also notes that poverty rates tend to be higher further away from the central business district area. In Brisbane, struggling middle income families live in the Logan and Redlands Shires to the south east, Ipswich City to the west and in Pine Rivers and Caboolture Shires to the north. In the South East Queensland growth regions,

namely the Gold and Sunshine Coasts, average wages in these communities remain the lowest of all middle income communities. In Noosa, the Tweed and Caloundra, wages and salaries were just under \$28,000 in 2000-01. In Maroochy, Caboolture, the Gold Coast and Logan, average wages and salaries remain below \$30,000³².

4.0 Empirical Studies

Empirical studies into social exclusion have proceeded in a number of ways. A favoured approach is to study one aspect of social exclusion such as non-participation in the labour market or low income in isolation. These one element studies normally invoke some form of limited dependent variables to examine factors that alter the probability of being in such a state. While this method offers a good means of examining the effectiveness or potential for policy options designed to combat the problem, the clear limitation of such methods is that they neglect the interaction of a number of factors that most analysts now agree influence social exclusion. At the macro level, an increasing number of studies use principal components (PCA) or other forms of factor analysis to construct indices of social exclusion or relative deprivation. For example, Cavassini, Davis and Lipper used PCA to construct an index of marginality for regions in Costa Rica³³. According to the authors it was designed as a “multidimensional community level exclusion index”. Specifically, the authors used the following equation to estimate the marginality index

$$(1) \quad A_j = \sum_{i=1}^n F_i [(a_{ji} - a_i) / s_i]$$

where F_i is the factor score for asset i , a_{ji} is the j^{th} district's value for asset i and a_i and s_i are the mean and standard deviation of asset i variable over all districts. By construction the mean value of the index is zero.

The authors introduced a time variance into the analysis by estimating the same equation over a number of census periods³⁴. A similar macro study has been undertaken by Schricharoen and Buchenrieder for Thailand³⁵. The nature of PCA and its ability to combine a number of seemingly

³² Swan, W. (2005) *Postcode: The Splintering of a Nation*, Pluto Press Australia: North Melbourne, page 108.

³³ Cavassini, P., Davis, R. and Lipper, R (2004) *Estimating Poverty over Time and Space; A Time Variant Index of Poverty for Costa Rica*, ESA Working Paper 04-21

³⁴ One problem with doing this is that indicators of marginality change over time with societal expectations. So for example, lack of access to the internet in 1990 in Australia would not have indicated the extent of social exclusion as it would in 2006.

³⁵ Schricharoen, P. and Buchenreider, G. (2005) *A Principal Components Analysis of Poverty In Thailand* IAS Working Paper, Berlin

unrelated variables make it well suited to studies of deprivation in less developed countries but the technique has been less extensively used in developed countries or at a more disaggregated spatial level where single dimension indicators such as income are normally a good guide to deprivation and exclusion. An exception is the work by Pampalon and Raymond in Quebec³⁶.

An important contribution to the empirical study of deprivation and exclusion has been made by Headey using four waves of the Household and Labour Dynamics Australia (HILDA) dataset. Headey attempts to measure social exclusion, in a multi-dimensional format across four domains³⁷. The stated aim of the Melbourne Institute project is to propose a framework for assessing poverty and disadvantage. Unlike poverty it aims to adopt a multidimensional approach. The study is influenced by Sen who argues in terms of low capabilities and functionings³⁸. In economic terms, capabilities are stock variables but, because they relate to potentials, they are difficult to measure. Functionings are flow variables relating to material standard of living-joblessness, welfare reliance, and poor current physical and mental health and so on.

Headey isolates four domains, the interaction of which creates social exclusion. These are:

- Financial domain
- Employment Domain
- Health Domain
- Family/social domain

One of the main benefits of using the longitudinal properties of HILDA is that the researcher can measure the time path of deprivation, to determine if persons are temporarily disadvantaged (for example, students with low income during training) and those caught in a cycle of reoccurring disadvantage. This feature will be undoubtedly true in years to come but the current HILDA data set 2001-03, falls short of genuine longitudinal properties. Despite good intentions, the Headey paper does not, in the end, construct a multidimensional index of exclusion or disadvantage, but rather a framework which shows the same or similar variables being influential across all of the four domains. This methodology shows the degree of inter-relationships in the process but falls

³⁶ Pampalon, R and Raymond, G (2000) A Deprivation Index for Health and Welfare Planning in Quebec, in *Chronic Diseases in Canada*, 21: 12-23

³⁷, See, Headey (2006) p. 17

³⁸ See, Sen (1987). P. 12

short of providing a quantitative measure. However, a strong positive coming from the Headey paper is the formal recognition of the capabilities/functionings link. The principal suggests that in order to function effectively in a modernising or modern country people require a fairly wide range of capabilities and not just an adequate income. If they lack or have low rates on several capabilities – then life choice will be constrained. The issue of causation is problematic. Headey argues:

A key issue in operationalising the framework is to assess causal linkages among capabilities, functionings and outcomes. In general we think of capabilities affecting functionings and both capabilities and functionings affecting outcomes³⁹.

The approach used below to investigate social exclusion in Queensland is exploratory and draws from both PCA-type studies (to harness the multi-dimensional approach) and from the Headey study, in particular the capabilities/functionings approach. In brief the methodology is two staged. Firstly, we use PCA to establish a quantitative index of social exclusion and then, we use multinomial and ordered logit to examine those factors which influence movements in and out of social exclusion.

This later point is particularly desirable as it allows the development of policy options. Below, we test the PCA methodology on Census 2001 unit record data to calculate a measure of exclusion for Queensland regions. A number of studies have used single measure census data such as unemployment to indicate disadvantage in Queensland regions and their results will prove useful in determining if our derived indicator is providing meaningful results.

Next we take the analysis further by using HILDA data and the capabilities/functionings framework. Specifically we construct a PCA model of social exclusion using functionings variables and then attempt to model this within a logit framework using capabilities variables. Finally we examine how changes in the capabilities variables would impact upon the social exclusion index as a guide to policy analysis. It should be stressed that this represents a new, novel, but untested approach and at this stage should be seen as preliminary. However, the great strength of the methodology is that it captures the multi-dimensional nature of social exclusion as

³⁹ Headey, B (2006) *A Framework for Assessing Poverty, Disadvantage and Low Capabilities in Australia* Melbourne Institute of Applied Economic and Social Research: Australia

well as allowing probability modelling with is of great use for policy development and measurement.

4.1 The Method of Principal Components

Principal components analysis is a data summary technique, often employed when there are a large number of potential variables that might be used in a study but where these variables are either correlated or diverse in nature. The technique is increasingly used in situation where descriptive variables, such as much of the frequently collected data such as Government statistics is inadequate for targeting the poorest or most excluded. This is not to imply that official data is incorrect but rather that it lacks context. Income data is a case in point. I might have low income because I am poor and needy or because I have chosen to have a year off to write a book. The same observation of low income emanates from very different causes and requires different policy options. In such circumstances a multidimensional approach which captures the context of the low income result is essential.

PCA is a multivariate statistical technique used to reduce the number of variables in a data set into a smaller number of “dimensions” In mathematical terms, from an initial set of n correlated variables; PCA creates uncorrelated indices or variables where each component is a linear weighted combination of the initial variables. For example from a set of variables X_i

$$PC_1 = a_{11}X_1 + a_{12}X_2 + \dots a_{1n}X_n \quad (1)$$

$$PC_m = a_{m1}X_1 + a_{m2}X_2 \dots a_{mn}X_n \quad (2)$$

Where a_{mn} represents the weight for the m^{th} principal component and the n^{th} variable

The weights for each principal component are provided by the eigenvectors of the correlation matrix or the covariance matrix if standardised data are used. The variance Ω for each principal component is given by the eigenvalue from the corresponding eigenvector⁴⁰. The components are derived sequentially so that the first principle component (PC_1) explains the largest possible

⁴⁰ A vector that results in a scalar multiple of itself when multiplied by a matrix is known as an eigenvector, and the scalar is its associated eigenvalue. Eigenvectors can only be found for square matrices and for an $n \times n$ matrix there are n eigenvectors.

amount of variation in the original data, subject to the constraint that the sum of the square of the weights ($a_{11}^2 + a_{12}^2 + a_{1n}^2$) = 1.

The proportion of the total variation in the original data accounted for by each principal component is given by Ω_i/n . The second principle component (PC_2) is completely uncorrelated with the first principle component, a reason for the popularity of using components instead of original data to combating multi-collinearity, and explains less of the variation than (PC_1), with the same constraints. Subsequent components are uncorrelated with previous components therefore each component captures a different dimension to the data, albeit explaining less variation than the previous component. The higher the degree of correlation among the original variables in the data, the fewer components required to fully explain the variation. At this stage there is a degree of arbitrariness about the selection of these variables. The main interest here is to ascertain whether the PCA technique used to establish deprivation indicators in less developed areas may be applied spatially in Queensland and obtain sensible results. Once that is established a more detailed examination of variable selection process can take place.

4.2 PCA Construction Using Census Unit Record Data

The use of Census unit record data has some advantages, principally because it allows a greater spatial disaggregation for Queensland but it suffers from the fact that it does not have data on issues such as health, social interaction and personal and job satisfaction, which are believed to influence social exclusion. As well, there is no chance of longitudinal estimation⁴¹. As a result of the above, a number of variables were chosen that were believed to be useful in distinguishing those persons at risk of social exclusion. On this basis, they should reflect various aspects of the multidimensional relationship. However, that does not imply that a person classified as socially excluded should exhibit all of these factors⁴². The National Centre for Social and Economic Modelling (NATSEM) recently selected a list of such variables from the 2001 census in their study of social disadvantage among Australian children⁴³. The NATSEM study provides a timely reminder that social exclusion is not universal in measurement but rather varies between ages and genders. The gender bias also attaches to the selection of variables. Table 3.1 below lists the

⁴¹ Although inter- census comparative statistic estimation is possible.

⁴² The probability of one person having a multiplicity of identifying features decreases multiplicatively as each added variable.

⁴³ See appendix for list of NATSEM variables

variables selected from the 2001 Census unit record for the current study. The choice of variables was limited by the type of data collected in the Census (for example, there is no health data). On the other hand, the Census contains data not collected by HILDA (for example, internet usage) and it has a greater spatial disaggregation and more observations than HILDA. Attached to each variable is a brief indication of why they were chosen.

Table 3.1 Variable for Initial PCA Analysis

Variable name	Variable intent
Single parent (singpar)	In recognition of the financial and other difficulties that may be faced by single parents
Multiple family (multifam)	Multiple co-habitation may reflect lack of individual resources
Renting (renting)	In recognition that renting may reflect lack of capacity to buy
Caravan (caravan)	In the belief that caravan residence may indicate lack of means
Low working hours (lowhours)	May reflect low earning capacity
No computer (nocomp)	No computer in home, indication of lack of communication assets
No internet (noitnent)	No internet indication of lack of communication assets
Low income (lowinc)	Income below third decile
Poor English (badeng)	Indication of possible exclusion through communication difficulties
Room capacity (lowbed)	Indication of possible cramped conditions
Inadequate Education (notfin)	Recognition of the role of education in success
Unemployed (unempl)	Indication of lack of earning power
Not participating (nlf)	Indication of labour force exclusion

The diversity of the 12 variables and their likely collinearity indicates the value of the PCA technique in creating a single index. These variables were then applied using the PCA analysis module from STATA 9⁴⁴. The initial components calculation is shown in Table 3.2.

⁴⁴ STATA 9 is the latest version of the econometrics software package STATA

Table 3.2 Principal Components using Correlation Matrix

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	3.90	2.29	0.31	0.031
Comp2	1.61	0.463	0.12	0.43
Comp3	1.15	0.106	0.08	0.51
Comp4	1.04	0.051	0.08	0.59
Comp5	0.99	0.031	0.07	0.67
Comp6	0.96	0.075	0.07	0.74
Comp7	0.88	0.127	0.06	0.81
Comp8	0.76	0.096	0.05	0.87
Comp9	0.66	0.286	0.05	0.92
Comp10	0.38	0.100	0.02	0.95
Comp11	0.28	0.033	0.02	0.97
Comp12	0.24	0.131	0.018	0.99
Comp13	0.11		0.008	1

Note: Using 2001 Census Unit Record Females of working age

As is the norm in PCA, PC1 explains most variation, accounting for 31% observed variation across the variables. Five components (including PC5) exceed or equalled an eigenvalue of 1 and jointly accounted for 67% of all variation. This is an adequate rather than outstanding result but allows us to proceed. Table 3.3 provides the loadings for the first three components (eigenvectors)⁴⁵. These loadings are applied to the means of the variables (shown in Table 3.4) to derive the PCs as described in equation 1. Ideally it would be hoped that index can be achieved where the degree of variation accounted for by the top three principal components would exceed the 51% achieved above⁴⁶.

⁴⁵ By established convention only PC1 will be used in the construction of the index

⁴⁶ In some ways PCA is practical rather than theoretic. Experimentation with different variables in the index may improve the overall performance. An estats kmo test for variable suitability indicated that the “renting” and “caravan” should be dropped from the index. See STATA 9 help facility for details on estats kmo test.

Table 3.3 Loadings for Principal Components Estimation

Variable	Comp1	Comp2	Comp3
Singpar	0.1059	0.0518	0.4353
Multifam	0.0127	0.013	0.5748
Renting	0.0081	0.461	-0.5134
Caravan	0.0485	0.1048	-0.2894
Lowhours	0.4381	-0.2074	-0.0443
Lowinc	0.2838	0.0608	-0.2567
Notcomp	0.2428	0.5675	-0.0229
Nonint	0.2758	0.5426	0.0075
Badeng	0.0893	0.0898	0.2369
Lowbed	0.4268	-0.2371	0.0231
Notfin	0.1902	0.3732	0.0846
unempl	0.4275	-0.2289	0.0085
nlf	0.4119	-0.2547	0.0239

Note: Derived using STATA 9 PCA program

Table 3.4 describes the behaviour of the data. For example, 27% of the survey were classified as single parents, 24% were living in rented accommodation and the average hours for the low end of part-time workers was 6.25 hours. The surprising feature was the fact that over 50% of unit records were shown as having no computer or no internet access, however the data does relate to 2001 and will almost certainly decrease when the 2006 Census results are released.

Table 3.4 Variable Mean and Standard Deviation

Variable	Mean	Std.Dev
Singpar	.278	.449
Multfam	.014	.118
Renting	.241	.428
Caravan	.013	.110
Parttime	6.25	4.03
Lowinc	.334	.471
Notcomp	.546	.497
Nonint	.553	.497
Badeng	.024	.154
Lowbed	.657	.378
Notfin	.433	.495
Unempl	6.24	3.79
NLF	.276	.447

Note: Derived from Estat means command in Stata 9 PCA

The social exclusion index (SEID) score is derived for each unit record from applying the factor loadings and were derived separately for male and females of working age and spatially applied

across Census areas 27-35, which represent the regions of Queensland⁴⁷. Given the nature of the variable coding, the most socially excluded received the highest scores on the SEID score. The average raw scores per region are shown below in Table 3.5.

Table 3.5 Rankings by Social Exclusion- Queensland Regions

Region	Unadjusted SEID (males)	Unadjusted SEID (females)	SEID Index (males)	SEID Index (females)
Widebay/Burnett	10.30	11.07	128	124
South East BSD	9.40	10.60	121	120
North West BSD	9.37	10.43	121	119
South East Mort	9.31	10.27	121	118
North West Mort	9.27	10.22	120	117
Mackay region	9.01	10.20	118	117
Northern	8.60	9.69	114	113
Brisbane Outer	8.43	9.59	112	112
Brisbane Inner	7.38	8.45	100	100

Derived by applying PCA technique to Census “areaenum” classifications 27-35

The data in Table 3.5 appear to provide “sensible” results in that inner Brisbane is seen as containing the lowest proportion of socially excluded residents and Wide-Bay Burnett the highest. When converted to index scales, it can be seen that there is a 28% range between the lowest (Brisbane Inner Ring) and the highest (Wide-Bay). However, the scores are relatively close across a number of other regions. In Table 3.6 the rankings achieved by the SEID score is compared with a ranking of the regions by unemployment rates. The results indicate close correlation with a spearman rank score of 88% for males and 100% for females.

⁴⁷ Using the “predict, score” command within STATA 9.

Table 3.6 Comparisons of Rankings by SEID and Unemployment Rates: Rankings by Social Exclusion-Queensland Regions

Region	Unemployment	Male SEID	Female SEID
Widebay-Burnett	1	1	1
South East BSD	3	2	3
North West BSD	5	3	5
South East Mort	4	4	4
North West Mort	2	5	2
Mackay region	6	6	6
Northern	7	7	7
Brisbane Outer	8	8	8
Brisbane Inner	9	9	9
Spearman Rank		0.88	1.00
Correlation *			

rank produced solely by comparison of SEID with regional unemployment rates at August 2001

5.0 Analysis Using HILDA Variables

The PCA technique was applied again using HILDA data but with an important distinctions. This time the component analysis variables were chosen as “functionings” variables. The SEID score thus produced and suitably coded were then used as dependent variable within multinomial logit using capabilities variables as the explanatory variables. The idea being this, and borrowing from Sen⁴⁸ is that functions are heavily influenced by capabilities and governments should be looking to influence capabilities if they really wish to change functions. The functionings variables selected from HILDA are shown in Table 4.1.

Table 4.1 Functions Variables for PCA Analysis

Variable name	Variable intent
Post Government Income (pgi)	To examine income inflow
Benefit Recipient (benrec)	To examine level of welfare dependence
Net Assets (netassets)	To determine capacity to cope with pgi fluctuations
Low labour market functions (lolmfunc)	To determine extent of labour market problems
Low health functioning (lohlthfunc)	To determine extent of health constraints
Low social functioning (losocfunc)	To determine extent of social issues
Low neighbourhood functions(lonbrfunc)	To determine extent of spatial difficulties
Housing Stress(hstress)	Measuring relative factors that cause housing stress

The “low functioning-lo” variables were created as indexes from a number of contributory variables contained in HILDA. For example, the low health functions variable was created from

⁴⁸ Sen, A (2000).

original variables relating to physical and intellectual health, alcohol consumption smoking and level of fitness, the low social functioning related to various isolation variables⁴⁹ and the low neighbourhood functioning related to the individual having “bad neighbours”, hostile and unsafe environment such as high crime rates. These variables were then applied to the STATA 9 PCA program (correlations option) to produce SEID scores, a summary of which is shown in Table 4.2⁵⁰.

Table 4.2 Summary of Raw SEID estimates per unit record from Functionings variables

Variable Name	Number Obs	Mean	Std Dev	Min	Max
S1 (Component 1)	10793	-4.95 e	1.47	-8.81	4.08

Once again, higher raw scores are associated with greater likelihood of social exclusion. To assist in the logit analysis the SEID scores were divided into three classes socially excluded (highest 5% of scores), at risk of social exclusion (next 10% highest SEID scores) and not at risk (85%)⁵¹.

The multinomial logit model has been used to analyse the probability of outcomes by *inter alia*: Schmidt and Strauss⁵² and Borooah and Mangan⁵³. The basic question that such a model seeks to answer is: what is the probability that a person with a particular set of characteristics, will be found in a specific situation. While there are many distributions from which these probabilities may be derived, perhaps the only tractable one is that of multinomial logit⁵⁴. With J mutually exclusive and collectively exhaustive outcomes, indexed $1...J$, the multinomial logit model is defined by a pair of equations.

⁴⁹ Such as having no friends, no one to turn to etc

⁵⁰ An estats kmo test indicated that all the functionings variable were useful in the index.

⁵¹ These cut offs were thought to be a good starting approximation. The logit model will predict its own classifications and the aim of the exercise is to see what variables would induce change between the three categories.

⁵² Schmidt, P. and Strauss, R.P. (1975), ‘The Prediction of Occupation Using Multiple ‘Logit Models’, *International Economic Review* 16, 471–86

⁵³ Borooah, V.K. and Mangan, J (2002) An Analysis of Occupational Outcomes for Indigenous and Asian Employees in Australia, in *The Economic Record* 78, 31-49. and Borooah, V.K. and Mangan, J (2007) Born There-Living Here, in *European Journal of Political Economy*

⁵⁴ Diamond, C., Curtis, J. and Warner, S and J.T., (1990) A Multinomial Probability Model of Size Income Distribution, in *Journal of Econometrics* 42 (1990): 43-61.

The first, defines *the log-odds ratio* of a person i being in occupation $j > 1$, relative to being in the ‘base’ occupation $j=1$, as a linear function of $\mathbf{X}_i = \{X_{ik}, k=1...K\}$, the vector of values of K explanatory variables for the person, as:

$$\log\left(\frac{\Pr(Y_i = j)}{\Pr(Y_i = 1)}\right) = \sum_{k=1}^K \beta_{jk} X_{ik} = \mathbf{X}_i \boldsymbol{\beta}_j = Z_{ij} \quad (1)$$

where: Y_i is an integer variable, which takes the value j if, and only if, outcome j occurs for household i , and $\boldsymbol{\beta}_j$ is the vector of coefficients associated with outcome j .

The second equation defines the probability of outcome j ($j=1...J$) occurring for individual i as:

$$\Pr(Y_i = j) = \frac{\exp(Z_{ij})}{1 + \sum_{r=1}^J \exp(Z_{ir})} = F(\mathbf{X}_i \boldsymbol{\beta}_j) \quad (2)$$

where the numerator in equation (2) is common to all outcomes $j=1...J$ and may be treated as a constant⁵⁵.

The capacity variables for inclusion in the multinomial logit chosen from the list of HILDA variables but were designed to indicate capacity in each of the following domains:

- Financial capacities;
- credit worthiness;
- work and work related capacities;
- educational capacities; and
- health capacities
- Social capacities.

⁵⁵ A major criticism of the multinomial model is the problem of the “independence of irrelevant alternatives” whereby the addition or subtraction of ‘irrelevant’ outcomes affects the likelihood of choosing between existing outcomes. This is not an issue for the problem studied here since the number of respondents is fixed and cannot be either added to or subtracted from (Diamond *et. al.*, 1990).

Table 4.3 sets out details of the variables used in the logit analysis and the method of their construction.

Table 4.3 Capacity Variables for Multinomial Analysis

Variable name	Variable intent and construction
Financial Capacity (Fincap)	To determine finance ability to change functions (derived from HILDA variable (fiprosp)).
Borrowing Capacity (Credit)	To ability to borrow at short notice (fiemerf).
Work and employment capacities (2 variables)	To determine employment prospects, derived from (ehtse, ehtjib, esdtl).
Educational capabilities (2 variables)	To determine educational capability, derived from, (edhigh, na).
Health capabilities (2 variables)	To ability to improve functions through health improvements, derived from, (ghpt, ghmh, lssmkt, lsdrkf, ispac).
Housing capabilities	To determine financial ability to change living arrangements derived from, (hsrnt, hiwscei, hicaupi, hityquint).
Neighbourhood and Social capacities (2 variables)	To examine social and spatial environment, derived from (islanh, island, islast).

In Table 4.4 the marginal coefficients from the logit equation are reported. Each shows the percent change in probability of moving between states. The default (or base) case were altered to obtain marginal estimates relating to 3 different scenarios; those relating to moving from the at risk category to the not at risk category, those relating to moving from the excluded category to the not at risk category and those relating to a shift from the excluded to the at risk category. All the variables performed as anticipated but with some surprises in the relative magnitudes.

For those currently at the margin (at risk), improved credit facilities, better education and labour force involvement and especially access to better housing (both in terms of cost and availability) would greatly assist their entry into the not at risk (mainstream society). The size of the marginal coefficient on the housing variable indicates that improvements in that area alone (to a level comparable with the average of the non-excluded) would increase the likelihood of moving out of the at risk group completely by 17.0%. The health variables, though providing some additional help do not appear to be most important factors in the upward mobility of this group⁵⁶ and the social and neighbourhood amenity variables appear to exert little influence at all.

⁵⁶ For example, the behaviour of the disability variable suggests that, by itself, the possession of a significant disability does not exclude a person from main stream economic society, although the result here is derived from a composite variable and more in depth analysis is required before making final conclusions on this issue.

In terms of moving from the excluded category to the non excluded category, the jump appears to be too great. The variables again all behave in the expected way but their marginal value is greatly reduced. Most influential again is the housing variable but here its influence is reduced to 2.0%

The behaviour of the variables in this situation suggests that any policies designed to improve the position of those we have identified as excluded will be a gradual process of improvement. For this reason, the base case options in the multinomial logit were altered to examine the shift from being excluded to being at risk, with the at risk state being seen as a transition phase before becoming non-excluded. The results, shown in column three, offer up more immediate hope for quicker (policy-driven) results. Better credit facilities, improvements in the education and work related variables all indicate important shifts in probability from 3% to 5%, but once again the housing/home stress variable is the more important, suggesting that improvements in the housing circumstances of the excluded on its own would improve their chances of moving from the bottom to the middle group by 12%. However, once again, the social and neighbourhood amenity variables do not appear to exert much influence.

Table 4.4 Multinomial Logit Coefficients – Predicting “Functions” SEID

Variable	dy/dx (1)*	dy/dx (2)**	dy/dx (3)***
Financial constraints	.022	.001	.018
Credit capacity	.059	.005	.041
Post school qualifications	.046	.004	.040
Unemployment/underemployment	.032	.003	.027
Workforce experience	.032	.002	.024
English language skills	.031	.001	.029
Significant disability	.026	.002	.024
Health rating	.027	.002	.026
Suffering housing stress	.174	.020	.123
Neighbourhood safety parameters	.006	.001	.008
Neighbourhood amenity	.008	.001	.007

*measures movement from the at risk to not excluded group, ** measures movement from excluded group to not excluded group *** measures movement from the excluded group to the not at risk group

To obtain a better idea of the policy options, the characteristics of the socially excluded and those at risk were altered to take on the characteristics of the upper group on each factor. For example, the socially excluded were given the credit characteristics of the not excluded, then their education levels and so on. The model was then asked to examine the changes in probabilities of being in each state. The results are shown in Table 4.5.

Table 4.5 Shifts in the Probability of Being Excluded or at Risk Following Changes in Policy Variables

Policy Initiative	Not excluded	At risk	Excluded
Original position	.838	.095	.067
Change in financial position	.894	.081	.025
Change in creditworthiness	.883	.092	.025
Change in education characteristics (1)	.918	.068	.012
Change in education characteristics (2)	.919	.067	.012
Change in work circumstances (1)	.948	.043	.008
Change in work circumstances (2)	.938	.053	.009
Change in language capacity	.847	.111	.042
Change in health circumstances (1)	.900	.081	.019
Change in health circumstances (2)	.888	.089	.023
Change in housing stress	.967	.029	.004
Change in neighbourhood characteristics (1)	.856	.107	.037
Change in neighbourhood characteristics (2)	.850	.114	.036

By way of interpretation, the original probabilities, as predicted by the model were .838 (not excluded) .095 (at risk of exclusion) .067 (currently excluded). As would be expected from the earlier results, changes in any of the variable used will alter these probabilities. The results are similar to those derived from the analysis of the marginal values but with some differences. Changes in the work education and housing condition variable make very significant reductions in the numbers that the model would predict to be fully excluded. The default estimate of those estimated to be fully excluded is 6.7% of the adult civilian population. Depending upon the type and extent of change, that probability could be, according to the predictions of the model, lowered to virtually zero. In particular, changes to work circumstances and housing stress variables are particularly important. As well, based on the model predictions for average probabilities, even the social and neighbourhood variables now exert significant impact.

However, a note of caution needs to be injected into the analysis. To this point in the empirical estimation we have isolated a set of variables which are capable of differentiating between individuals on the basis of their social exclusion indicator. For example, certain work, education, housing and financial characteristics are used by the modelling to place individuals into one of three categories. These results look promising in the sense that they are theoretically sound, stress the multidimensional nature of social exclusion and give plausible results. However, is it surprising that if we take any person, give them good credit facilities, post-school education or full time employment that we greatly reduce their chances of being classified as socially excluded

category? By and large, socially excluded persons do not have good credit, post school qualifications or a good job. The main achievement of the results in table 4.5 is that they stress the multidimensional nature of social exclusion and to show that a model based on this premise can accurately identify those at risk and/or currently excluded. The most important output from the modelling process should be the development of policies designed to shift persons out of excluded or semi-excluded groups that are multidimensional in nature. To this end it is concluded that the analysis of the determinants of marginal shifts between states (table 4.4) offers the more realistic platform for identifying social exclusion but that we need to examine more closely the characteristics of the excluded groups before devising workable policy options based on the logit results. Before attempting that, the report looks at the costs of social exclusion.

6.0 The Costs of Social Exclusion

The analysis so far has concentrated on methodology. It has devised a method by which quantitative estimates of the number of socially excluded persons; aged over 15 can be obtained which captures the multi-dimensional nature of the problem. Three broad groups have been identified: group A or those currently not at obvious risk of exclusion, which we estimate at being between 83%-84% of the population; group B or those at risk of social exclusion, which we estimate at approximately 9-10% of the working age population; and those that we estimate are currently excluded, which we estimate at being between 5-6% of the working age civilian population. Before attempting to be more descriptive of this group it should be stressed that these estimates are likely to be fluid and to be subject to rapid change if economic and social conditions change. To have 16% of the adult civilian population currently excluded or at risk of exclusion is a surprisingly high number in an affluent and prosperous economy.

On that basis it is important to understand not only the characteristics of those currently excluded/at risk of exclusion but also to outline the circumstances and triggers that may cause this number to alter as economic conditions alter and as the personal financial, health and social aspects of the individuals change. As mentioned earlier, the socially excluded are more noticeable during times of economic prosperity, because their circumstances so obviously depart from the norm. Moreover, times of economic prosperity are about the only times that Governments may have the capacity to seriously impact upon their number.

6.1 Recent Studies

Much of the attention in the literature on social exclusion has tended to be on young people, despite the fact that, as a percentage of the population, the proportion made up by young people is declining⁵⁷. The most recent and influential of such reports is the Cost of Exclusion Studies released jointly by the Centre of Economic Performance at University of London and the Royal Bank of Scotland⁵⁸. The report has, as its starting point, the now familiar paradox faced in western economies of an apparently successful economy which at the same time produces widespread inequality and disadvantage. The study examines the macro economic effects of NEETS (not in employment, education or training) for persons aged 15-24 in the United Kingdom. Its key findings include:

- Proportionally, the number of NEETS in England, Wales, Scotland and Northern Ireland is double the numbers of young persons officially designated as unemployed and seeking work and numbers approximately 20% of the youth cohort.
- This compares poorly with the OECD average and places the UK economy at a current and future disadvantage.
- The economic losses associated with this degree of inactivity are both current and long term and cover a range of social and private costs.
- These losses may be subdivided into direct losses through social security payments and lost production and related costs due to the higher incidence of NEETS in terms of crime, health related problems and other social and emotional problems that are linked to social exclusion.
- The extent of the adverse social flow-ons from exclusion are highlighted by the fact that the rate of imprisonment in the UK is substantially higher than in other OECD countries with the consequent scarring effect that this has on the prospects of the individual and their families⁵⁹.

⁵⁷ However, it is this relative decline in numbers that, in many ways, is driving the concern, Youth are increasingly becoming a scarce resource.

⁵⁸ See McNally and Telhaj (2007)

⁵⁹ For example, prisoners are much more likely to socially excluded and the children of prisoners are 13 times more likely to come to the attention of child safety workers than the non-prisoner population, and ex-prisoners are 13 times more likely to be unemployed

Specifically the report estimates the current direct costs of youth social exclusion as follows:

- The productivity loss to the economy as a result of youth employment is estimated at £10 Million per day. This estimate is derived from the average earnings of educated and trained young people in the same age group and so is an opportunity cost estimate.
- The ‘unnecessary’ social security payments from job-seeker allowance are estimated at £20 Million per week.
- Crime committed by youth (disproportionately by NEETS) was estimated to be in excess of £1 Billion for 2004.
- The ‘scarring effect’ from prolonged periods as a NEET which is estimated to reduce potential future earnings by between 8% and 15%⁶⁰.
- Substantially increased health increases as NEETS are much more likely to access public and private health facilities and to suffer the symptoms of substance abuse.

The indirect costs flow from the impact of social exclusion of an individual on their family and friends (current indirect impact) and the future impact upon their children (future indirect impact) and upon the economic potential of the nation. In particular the report also highlights the unflattering comparisons between the educational and economic performance of British young people with those in the new economic powerhouses of China and India and warns of the significant disadvantage that this will place on the competitive position of the UK into the future. This is particularly in connection to educational underachievement. Currently the number of young persons with low level or without qualifications is high in UK. Many feel this educational gap flows on to average labour force productivity. For example McNally and Telhaj⁶¹ claim that because of educational underachievement the UK has 10-25% lower output per hour than France, Germany and the US. The same sources also point to the fact that there is a strong relationship between educational underachievement and crime.

6.2 Measuring the Costs of Exclusion

There appears little doubt that socially excluded persons, such as the majority of the NEETS in the UK represent an economic loss and present a disproportionate drain on the social infrastructure of the country. Yet quantifying the economic and social costs that such groups

⁶⁰ See, McNally and Telhaj (2007) pp. 12-13.

⁶¹ Ibid

impose upon the economy is difficult. A standard procedure in such quantification is to create a check list of identifiable costs and simply aggregate them after suitable discounting of those costs that extend into the future. For example, McNally and Telhaj⁶² calculate their costs in the following way.

- Unemployment costs - The net cost of youth unemployment to the Treasury depends upon the duration of the unemployment and the extent to which young people move onto other forms of income support⁶³. Therefore it becomes difficult to examine the costs imposed by one individual or group. To overcome this the standard approach is to examine the total amount of government expenditure on job seeker allowance on the assumption that any money spent on supporting joblessness is an opportunity cost to the economy because it may have been better spent elsewhere⁶⁴. McNally and Telhaj use the total amount spent per week on job search allowance to derive their estimate of £20 Million per week as the net cost.
- Productivity losses - Measurements of productivity losses from social exclusion are less problematic because they are based on the economic principle that more is better than less, any loss of output caused by unnecessary inactivity represents a net cost. The problem comes in placing a value on the activity which is lost. Normally the assumption is made that an individual's wage rate is reflective of their productivity⁶⁵. In calculating the productivity loss, average earnings for unemployed persons in the age cohort were compared to job seeker allowances and the difference represented the productivity loss. For UK NEETS this was estimated at £70 Million per week⁶⁶.

⁶² OpCit

⁶³ Note, even those in low paid employment may be eligible for benefit. Therefore the stock of unemployed may not fully capture the incidence of benefit distribution

⁶⁴ Once this type of approach is adopted the problem of general equilibrium is encountered. This suggests that the economic system is interrelated and that costs to one group may translate into benefits to another group. For example, many economists would argue that some level of unemployment is not only unavoidable but desirable in that it reduces pressure on interest rates, wages and inflation. In such circumstances it is only the net costs of unemployment which becomes the relevant estimate.

⁶⁵ This real wage/productivity nexus is a cornerstone of micro and labour economics.

⁶⁶ An alternative method would be to examine the average contribution to GDP of employed persons in that age group and use that as the means of estimating productivity loss. This method while not needing to bring in wage comparisons makes the assumption that those in unemployment have no output whereas, in reality, they may be undertaking unpaid activity such as child care, home maintenance or unpaid volunteer work which is not identified in the National Accounts but still constitutes output.

- Long-term wage penalties - The authors argue that the personal costs of current exclusion extend into the future through a wage penalty. Using longitudinal data supplied from the National Child Development Study⁶⁷ the authors estimate that prolonged exposure to exclusion produces a life time wage penalty of between 8-15% of potential life time earnings.
- Social and health costs - Quantification of these forms of cost are very difficult but tend to be based on the following argument. The socially excluded (and their dependents) and those in lower socio economic groups make a disproportionate claim on public hospitals and community services and are more prone to engage in petty and street crime⁶⁸. Conversely they pay little or no taxation and as a result are a net drain on the economy. Normally these costs are based on differences between social and health costs associated with a non-excluded person (for example, average rates of hospitalisation in public wards) and those associated with a group deemed to be excluded and differences in their ability to commit crimes.

6.3 Problems with “Stock” Methods and Discrete Quantification

The methods used by McNally and Taihaj while representative of a number of studies in this area suffer from two problems. The first is that they are stock based; that is they study social exclusion by reference to all members (the stock of) of a group. In this case it was the unemployed aged 15-24 years. However, not all members of the stock of unemployed at a point in time are socially excluded. Some are there by choice, such as active job search, or circumstance and will only remain unemployed for a short period of time. Similarly not all those with credit, health or social problems could realistically be classed as excluded. A stock model improves if it is combined with longitudinal approaches because they study the behaviour of the person or group over time. The McNally and Telhaj study could be improved if they, for example, concentrated only on long term job seekers. Secondly the use of a stock approach normally concentrates on one characteristic, such as unemployment or poor health. The rationale behind this study is that social exclusion is a multidimensional problem. This condition does however place more demands on the researcher to adequately characterise the socially excluded. Below we analyse our estimates

⁶⁷ Gregg and

⁶⁸ Not many of the socially excluded become involved in corporate fraud

of social exclusion to obtain a more complete picture of those placed in either the excluded or at risk groups.

Further analysis of the composition of the SEID indexes revealed the following compositional data as shown below in table

Table 5.1 Summary Variables for SEID index

Characteristic	Excluded group	At risk group
Percentage aged 16-24	26	29
Percentage aged 45+	62	58
Percentage married or de-facto	35	48
Dependent children	38	34
Female	62	61
Welfare recipient	43	68
Having a significant disability or health issue	63	45

The data in this table show a significant age asymmetry within both the excluded and at risk groups. For those in the excluded group 88% were either in the youth age group (aged 16-24 years) or in the mature age group (aged 45+). However, the mature aged persons outnumbered the youth age group by over two to one. A similar pattern emerged for the at risk group with corresponding percentages of 29% and 58% respectively, although the relative importance of the youth group had grown considerably. There were other similarities in both groups including a bias towards women and below average marriage/de-facto rates - a significant point of difference is in those receiving some form of welfare assistance. In particular, those identified as excluded had a relatively low percentage of 43% compared to the at risk group at 68%. The former seems a very low figure given that Yi-peng and Williams⁶⁹ estimate that during an average year, 33% of Australians aged 15-64 rely on some form of income support and may indicate that some form of under-estimation has occurred. On the other hand, the result conforms to other studies that suggest that one of the causes of social exclusion is failure to properly access social security services.

⁶⁹ Yi Peng, T. and Williams, R. (2001) *Dynamic Properties of Income Support Receipt in Australia* Melbourne Institute of Applied Economic and Social Research Working paper 23/06

To gain further insight into the contributors to social exclusion, as a prerequisite to policy development, table (5.2) provides an incidence of the occurrence of individual problems within the multidimensional index, with their relative contribution to the index.

Table 5.2 Characteristics of the Excluded and at Risk Groups

Characteristic		Excluded		At Risk
	% of group	% contribution to SEID	% of group	% contribution to SEID
Suffering Housing Stress	94.55	0.12	83.40	0.13
Insufficient Work Experience	91.07	0.12	83.16	0.13
Unemployment/Under	88.67	0.12	74.63	0.12
Lack of Post School Qualifications	81.48	0.11	63.59	0.10
Early School Leaver	81.48	0.11	55.76	0.09
Having a Significant Disability	64.71	0.08	47.92	0.08
Having major Financial Constraints	62.96	0.08	47.53	0.08
Having Significant Health Problems	55.77	0.07	42.99	0.07
Insufficient Access to Credit	53.81	0.07	39.39	0.06
Neighborhood Amenity	51.63	0.07	37.82	0.06
Neighborhood Safety	30.28	0.04	24.67	0.04
Inadequate Language Skills	14.38	0.02	15.97	0.03

Source: derived from SEID estimates in Section 3.

For both groups housing stress, work circumstances and lower educational qualifications contributed most to their high scores. When lack of credit facilities and financial capability are added in, the collective contribution of these variables to the overall SEID index is over 70% for both groups. Health problems also made a 7% contribution to the SEID index for both the excluded group and the at-risk group.

6.4 Costs of Social Exclusion in Queensland and Policy Options

On the basis of the model estimates, approximately 130,000 adult persons in the Queensland labour market would be included in the fully excluded group with an additional 190,000 adult persons in the at risk group. Adjusting for average family size and the percentage of each group with dependents, the total number of persons in Queensland would be approximately 230,000 (excluded) and 305,000 (at risk). These number represents 6.05% and 8.02% of the Queensland

population respectively, combined this constitutes around 14.1% of the population⁷⁰. By way of comparison the lowest and second lowest decile of the 2001 SEIFA index of relative socio-economic disadvantage combined account for 18% of the Queensland population⁷¹.

6.5 Measuring the Benefits of Reducing Social Exclusion

Given the complications associated with quantifying the costs of social exclusion a more appropriate question may be to examine the benefits of reducing social exclusion and the costs associated with doing so. However, even here care must be taken to avoid double counting and displacement. For example, improving health among the socially excluded would represent a social and an economic gain. However, in terms of GDP contributions there would also be a loss of earnings and value of output in the health industry. As mentioned earlier, reductions in unemployment below a threshold level may place pressure on wages, interest and inflation. In short the important consideration is that of net benefits.

In determining the costs of this extent of social exclusion, care must be taken to include any negative impacts that would occur if social exclusion and its consequences were suddenly reduced. For example, while economic costs and Government expenditure would be significantly reduced by reductions in the number of socially excluded, some other contributions to GDP, such as the earnings of medical staff, hospitals and the output of police and community service workers would be also be reduced. In other words, given the inter-related nature of modern economies, the rigorous assessment of benefits requires the netting out of displacement impacts.

Given this consideration it was decided to measure only those aspects which would unambiguously result in net benefits and to avoid attempting to quantify a grab bag of factors that are generally accepted to be costs associated with social exclusion. In short, four factors have been identified that may be costed with some degree of accuracy.

- productivity loss from inactivity and exclusion of the currently excluded;
- tax income loss from inactivity and exclusion of the currently excluded;
- unnecessary social security payments; and

⁷⁰ Based on 2003/04 which is the time to which the HILDA data refers.

⁷¹ The SEIFA index is also a multi-dimensional measure, so the comparison is a valid one. The relatively high over 45 age groupings in the SEID have lowered their percentage contribution as they have less dependents than the average. As well it might be expected that the SEIFA would over-estimate because it would include those affected short-term and who are not genuinely deprived.

- additional health costs.

This short list eliminates a number of popular costs of social exclusion such as Government administration costs, and time variant costs such as wage scarring and intergenerational costs such as the disadvantage passed on to the children of the socially excluded. Reasons for excluding these include displacement effects, where reductions for services also coincides with reduced output and income for service providers⁷² as well as difficulty in measuring marginal changes in administration costs for Government services⁷³.

Finally there is the issue of lack of appropriate discount rates for inter-temporal comparisons. Any measure of future costs from either wage loss or reduced life span or other factors affecting the economic standing of the individual and their family will inevitably produce a big number. However, there are a number of factors that influence lifetime income such as occupation, work intensity and other issues not unique to the socially excluded. In brief these kinds of life cycle estimates are invariably problematic, involve a range of assumptions and have a slight degree of unreality about them. Moreover they are unnecessary to testing the central area of interest, the cost effectiveness of reducing social exclusion and near social exclusion.

6.6 Productivity Gains

The emphasis here is on presenting a realistic scenario. While it is to be hoped that policy responses could bring many of our excluded group into the work force (95% are unemployed or underemployed) it is unlikely that many would attain high or even median incomes in the near future. However, for the at risk group there is a likelihood that some would progress further up the occupational ladder. Assuming that wage is a good approximation for productivity we examine the following scenarios for the excluded group and the at-risk group. For reasons suggested above we restrict the maximum feasible income (and therefore productivity increase)

⁷² This is admittedly likely to be only a short term phenomena

⁷³ For example, would a one third reduction in the number of requests for assistance in community housing lead to a proportionate reduction in the number of public servants or the office space allocated to this purpose or simple improved services to the clients that remain? There are threshold and fixed costs involved in service provision which, once established, are quasi-independent of the current level of demand.

to a maximum of two levels up the Queensland income quintiles and examine two cases across both groups⁷⁴:

- Moving the excluded group through employment up one income quintile from their current average income.
- Moving the excluded group through employment up two income quintiles from their current.
- Moving the at-risk group through employment or through the provision of more paid hours of work up one income quintile.
- Moving the at-risk group through employment or more paid hours of work one two income quintiles.

On this basis we estimate the immediate productivity gains per annum from the excluded group at between \$1.5 Billion and \$3.29 Billion and for the at risk group at between \$2.6 Billion and \$4.3 Billion per annum⁷⁵.

6.7 Additional Tax Revenue

Using the average income rates used above and the average weekly tax income group for Queensland (2004) is relatively easy⁷⁶. On this basis tax gains from shifting upwards the excluded group range from \$303.4 Million to \$983.3 Million per annum and tax gains from the currently at risk group are estimated at \$994 Million to \$2.13 Billion.

6.8 Savings in Social Security

There are some considerable difficulties in arriving at this estimate. First, the data base does not fully outline the full range of available programs. This may have contributed to the fact that our estimates reported that only 43% of the excluded were receiving social security payments. For these and other reasons we make the following assumptions: only 43% of the excluded group

⁷⁴ For those identified as excluded the median post government income (per individual) was \$412.30. For this reason, and given the similarity between the two amounts it was considered that lowest income quintile for Queensland (2004) of \$396.16 would be a convenient figure to take as an indication of average productivity in the excluded group. Similarly for the at risk group our median estimate of \$598.90 was relatively close to the second lowest income quintile for Queensland (2004) of \$616.26.

⁷⁵ Valued in \$2004, also note that these are productivity gains for the economy as a whole and are not necessarily gains to the individual who may suffer from tax traps as a result of moving into a higher income bracket.

⁷⁶ Note it is necessary to be aware of possible double counting, because the tax is levied on the gross income which is also the unit of calculation for the GNP.

receive social security payments but that all of their income is derived from that source; of the at risk group, 68% receive some their income from social security payments but that this amounts to no more than 50% of their current income⁷⁷.

On this basis the reduction in social security payments per annum would approximate \$562 Million from the current excluded group \$1.04 Billion from the current at-risk group.

6.9 Savings in the Health Sector

Despite the fact that health related variables did not rank among the most significant factors predicting social exclusion or risk of social exclusion, changes in health characteristics were shown to be significant in changing the probabilities of being assigned to each group. In addition, a consideration of the characteristics of each group shows marked differences between the excluded (63%), the at-risk group (45%) and the not at-risk group (17%) in terms of having a life affecting health problem or disability. Therefore it is highly likely that these former two groups do impose health costs, particularly public health costs above which would be the case if their socio economic status improved⁷⁸.

Estimates of the additional costs they impose are difficult to calculate. The average Queensland per person public health expenditure in 2005/06 was \$1519.00⁷⁹. These costs are spread over a number of categories including acute inpatient services (49%), public health services (6%) integrated mental health services (9%) health maintenance services (12%) and non-inpatient services (24%) and different average costs attached to each of these services. For example, Queensland Health estimate that total cost per acute patient (including depreciation) for 2004/05 was \$2989.00 and the average cost per weighted separation per patient was between \$3505.00 and \$2653.00 depending upon which group of public hospitals were used in the calculations⁸⁰.

⁷⁷ Based on means tests and additional income earning restrictions (for example of Disability Service Pensions recipients)

⁷⁸ We know that health costs make up a higher proportion of the budget of lower socio-economic groups but they spend less, in absolute terms, on health related services than higher income groups. This creates a quandary. In terms of pure expenditure terms, assuming the same level of treatment, moving people up the socio-economic scale may mean and increase in health expenditure. However, it would also mean (possibly) less use of public health services and longer productive working lives.

⁷⁹ These are based on total expenditures of funds drawn from Commonwealth (\$2.017 billion), State (\$3.536 Billion) and own sourced revenue (\$375 million).

⁸⁰ The higher cost hospital peer group included Cairns Base Hospital, Gold Coast, Nambour General, Princess Alexandra, Royal Brisbane and Women's, Royal Children's, The Prince Charles and the Townsville Hospital while

We also know that the excluded group are four times as likely to suffer from a disability or health problem than the non-excluded group and the at-risk group are 2.6 times as likely, but we do not know the proportions per type of services. Although it might be thought that the distribution of use by the excluded groups would be more likely to be in acute inpatient services. Table 5.3 examines additional health costs under two scenarios.

Table 5.3 Comparisons of Average Individual Health Costs per Group

Patient type	Average cost of acute in patient services (\$)	Average Annual operating cost* (\$)
Non-excluded	2162.8	1157.2
At-risk	5623.4	3008.77
Socially excluded	8651.3	4628.9
Per person addition to average cost (at risk)	3460.6	3471.6
Per person addition to average cost (excluded)	6488.5	4466.2

The data in table 5.3 indicate that under either measure of cost there are substantial per unit cost differences between the non-excluded and the at-risk and excluded groups. However, it is better to use the operating costs net of capital expenditure as this type of expenditure is quasi-fixed and would need (in the most part) to be developed for the population in general rather than being specific to the two disadvantaged groups under consideration. On this basis the additional operating costs required in Queensland Public Health because our two groups display different hospital use patterns than the majority (non-excluded group) are approximately \$798 Million per annum for the excluded group and approximately \$565 Million for the at-risk group. Placed in the context of the annual operating expenditures for Public hospitals these extra costs add 23% additional costs. In other words, if all persons in Queensland displayed the same average health characteristics (with regard public health use) then operating costs at Queensland hospitals would be reduced by 23 % per annum⁸¹.

6.10 A Cautionary Note

Care should be taken in considering potential health and other cost savings if the levels of social exclusion and disadvantage could be reduced. Health systems are set up under the assumption

the lower cost peer group included Bundaberg Base, Caboolture, Hervey Bay, Ipswich, Logan, Mackay Base, Maryborough, Queen Elizabeth II Jubilee, Redcliffe, Redland, Rockhampton Base and Toowoomba.

⁸¹ Whether these savings would be passed back in tax cuts or simply used to upgrade health services is unknown. In either case public welfare would increase.

that, potentially, all persons in society will need their services. It is also recognised that some groups such as young children and the elderly may need proportionately more health funding than others. In other words, part of the social contract is that society responds to different needs within the community. For example, students take a disproportionate share of education funding, sports fans gain greater welfare from the use of public money for stadiums because they are much more likely to use them. The issue here is not that people with health problems make use of the health services but rather that they make disproportionate use because of a combination of other factors that have been collectively described as social exclusion and which could be reduced by carefully targeted policies⁸².

7.0 Conclusions

As a result of the modelling (the use of a multi-dimensional SEID index) the Queensland population was divided into three groups:

- ***Non excluded*** - 83%-85% of the population that could be regarded as self-sustaining and not requiring specific policies, although a surprisingly high percentage 17% are suffering housing stress due to high repayments, high rents, over crowding or lack of neighbourhood amenity;
- ***At-risk of exclusion*** – 8.5- 10% having a high exclusion score on the index which featured housing stress, labour market stress, inadequate education capabilities, above average health problems, financial strain and neighbourhood issues- estimated as including 305,000 persons (including dependents); and
- ***Excluded*** - 6%-7% with the highest SEID index.

Of the excluded persons 95% experience housing stress, over 90% experience labour market stress, 90% are early school leavers or have schooling issues, 65% have a significant disability or health issue, 65% have credit or financial issues. Surprisingly, only 43% access social security/government services. Further characteristics of excluded persons are that 62% are 45+ years of age, 26% are 16-24 years of age and 62 % are female.

⁸² The other factor is that of the direction of causation. Are people excluded because of health problems or does the exclusion produce or add to health problems? The answer is, of course, both. However, by improving health outcomes we simultaneously treat both the symptoms and consequences of social exclusion.

Similarly in the at-risk category 83% experienced housing stress, 80% experienced labour market stress, 74% have low educational achievement, 55% are early school leavers, 47% have a significant disability or health issues and 47% experience major financial or credit problems. In addition 61% are female, 58% are aged 45+, 29% are aged 16-64 and 70% access social security.

In summary, the excluded are essentially disconnected from the various service systems and are characterised by homelessness or irregular accommodation and health (physical and intellectual) problems. These persons face multiple barriers to improving their circumstances and require specific multi-dimensional intervention.

Those at-risk of social exclusion are more likely to be social security dependent. This group is likely to be younger (29%) but still likely to include a large number of 45+ persons, many of whom will be on disability benefits.

In terms of costs, the following estimates of avoidable loss (costs) per annum were derived:

- productivity \$1.5 Billion (excluded) and \$3.3 Billion (at-risk);
- tax loss (\$994 Million and \$2.13 Billion);
- social security savings (\$562 Million and \$1.04 Billion) and
- avoidable health costs (\$798 Million and \$565 Million).

In terms of individual health costs it was estimated that the cost of one excluded person (based on average operating costs, including borrowings, of health services in Public Hospitals) was \$3471.7 above the average for the non-excluded (\$1157.2) and for one at-risk person it was \$2314.4 above the average for the non-excluded.

The analysis indicates that it would be both socially and economically responsible to support policies to reduce full or near exclusion, with research showing that policies designed to reduce housing stress, labour market problems, education and training, health and financial capabilities are the most likely to be successful.

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