Persistence of Social Exclusion among Older People in Australia:

What are the protecting factors?

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ABSTRACT
The existing literature on social exclusion among older people, though relatively limited, suggests that disadvantage among the elderly is cumulative in nature. Some aspects of disadvantage starting at early life stages have long-term consequences. As such, older people with disadvantages may be subject to higher risks of persistent social exclusion. This paper aims to improve understanding of the persistence of social exclusion among senior Australians in three ways. Firstly, the incidence of social exclusion among older people is analysed using selected indicators. Secondly, the paper examines whether an older person experiencing social exclusion at one time is more likely to experience it again (persistence). Thirdly, it investigates what factors may be protecting older people from persistent social exclusion. The analysis is conducted using the first eight waves of the Household, Income and Labour Dynamics in Australia (HILDA) Survey (2001–2008). The sample of the elderly is disaggregated into a younger group (55-64 years at wave 1) and an older group (65+ years). Notwithstanding a low incidence of social exclusion (especially in multiple dimensions), the analysis indicates a relatively high persistence of exclusion: among less than 10 per cent of the sample of older people who experienced social exclusion in the previous year, about 45 per cent of that smaller group experienced the same situation in the following year. Further, the paper suggests that higher education and income, as well as better health conditions and previous employment experiences, are important protective factors from social exclusion for older people.

KEY WORDS persistence of social exclusion, panel data estimation, protective factors

Introduction

Recently, social exclusion has emerged as a key feature in the analysis of disadvantage in

developed countries. While it was introduced for the first time by Frenchman Rene Lenoir

(1974), this concept spread throughout Europe in the 1980's and was increasingly incorporated

formally into country policy frameworks (Hayes, Gray and Edwards 2008). Social exclusion is

commonly defined as *"…a complex and multi-dimensional process. It involves the lack or denial*

of resources, rights, goods and services and the inability to participate in the normal

relationships and activities available to the majority of people in a society, whether in economic,

social, cultural, or political arenas. It affects both the quality of life of individuals and the equity and cohesion of society as a whole" (Levitas *et al*. 2007: 86). The then United Kingdom (UK) Social Exclusion Unit Office of the then Deputy Prime Minister (2006: 18) provides a shorter definition whereby social exclusion is *"characterised by deprivation and the lack of access to social networks, activities, and services that results in a poor quality of life".*

To be socially excluded will often mean different things to different individuals. The United Nations (2007) has argued that age is one factor that is related to social exclusion. Nevertheless, the discussion surrounding social exclusion often focuses on working-age adults, and is rarely examined for older people. However, researchers, particularly in the UK, have developed conceptual frameworks specifically for this group. Notable in this regard is work undertaken by the UK Social Inclusion Unit (see Phillipson and Scharf 2004 and UK Social Exclusion Unit Office of the Deputy Prime Minister 2006).

In Australia, the central policy interest in social exclusion has been formalised through the creation of the Social Inclusion Unit (SIU), established in December 2007 under the Department of the Prime Minister and Cabinet (PM&C). However, in Australia there has been little research into the social exclusion of older people (Naughtin 2008). Some Australian researchers have examined social exclusion for children in a spatial setting (see for example McNamara *et al*. 2009 and Tanton *et al*. 2010). Adopting a life course approach, Scharf, Phillipson and Smith (2005) and Naughtin (2008) argue that disadvantage has cumulative characteristics, with some aspects of disadvantage starting early in the life cycle and having long term consequences. Thus, it is not surprising that social exclusion among older people may also persist.

The aim of this paper is to analyse whether persistence of social exclusion among older people exists in Australia with a focus on three elements. Firstly, it investigates the incidence of social exclusion among older people in Australia using selected indicators drawing on previous international and Australian literature. Secondly, the paper considers whether an older person experiencing social exclusion at one time is more likely to experience it again another time. Finally, the investigation examines the factors protecting older people from experiencing social exclusion.

The investigation of the issue is based on longitudinal Household, Income and Labour Dynamics in Australia (HILDA) Survey data[2] and applies panel data estimation techniques. The structure of the paper in the initial phase will be to review the literature on social exclusion. This is followed by an examination of the data, variable construction and the methodology. The final two sections prior to the conclusion propose regression methodology and an analysis of the empirical results, respectively.

Literature review

Literature usually differentiates between dimension (outcomes) and drivers of social exclusion. The relationship between them is complex and sometimes outcomes may double up as drivers (see, for example, discussion in Bradshaw *et al*. 2004).

Dimension refers to the discrete measure axes along which incidence of social exclusion is manifest, and drivers usually refer to risk or conditions that may lead to social exclusion. The following discussion covers dimensions and drivers attached to the social exclusion of older people.

Dimensions of social exclusion

Researchers from the United Kingdom have pioneered discussion on incidence of multiple exclusions among older people. Thus, the discussion on this section relies heavily on this country's experience. The dimensions usually discussed in the literature include material resources, social relations, participation and sometimes health. For example, the then Social Exclusion Unit in the UK (Scharf, Phillipson and Smith 2005) undertook the Multiple Exclusion and Quality of Life amongst Excluded Older People in Disadvantaged Neighbourhoods study. Four types of exclusion are covered in the interview based study (material resources, social relations, civic participation and basic services). A later publication from the Unit (Barnes *et al*. 2006) constructs seven dimensions of social exclusion from the English Longitudinal Study of Ageing (ELSA), a large-scale survey of people aged 50 years or over living in the UK. The ELSA dimensions cover similar types of exclusion to those discussed earlier, including financial products and material consumption (which may be classified under material resources); social relationships, cultural and leisure activities (which may be classified under social relations); civic activities; and access to basic services. Barriers in terms of social relationship such as neighbourhood exclusion are also considered and measures whether the older person feels part of a certain area, whether they feel lonely living in a particular area and how often they feel this way. The importance of social relationship or participation as one dimension is also discussed by Theobald (2005) who investigates one specific dimension on social participation of the elderly by focusing on their old age care arrangements in five European countries (Austria, Belgium, Germany, Italy and Northern-Ireland).

Levitas *et al*. (2007: 10), who look at stages of life cycle including older people, include health and well-being as one of their social exclusion domains. These include substantial health

indicators (physical health and exercise, mental health, disability, life satisfaction and self-esteem/personal efficacy). Health, in fact, has been considered as a key factor in the ageing process. Health is viewed as an important factor for successful ageing in Canada (Shields and Martel 2006); a decisive determinant to undertaking daily functions or having a degree or autonomy in old age (Baltes and Mayer 1999; Tesch-Romer *et al.* 2003). Health is also adopted as one dimension of social exclusion by the UK Cabinet Office (see Becker and Boreham 2009). It is part of a series of projects examining people aged 60 years and over.

In addition to health, Levitas *et al.* (2007) Quality of Life dimensions of social exclusion also cover living environment (housing quality, homelessness, neighbourhood safety, neighbourhood satisfaction, and access to open space). Crime, harm and criminalisation are also incorporated and are further defined as objective safety/victimisation including the risk of abuse at home, subjective safety such as fear of crime at home and in neighbourhood, exposure to bullying and harassment and discrimination.

Drivers of social exclusion

Some international studies (Phillipson and Scharf 2004; Barnes *et al*. 2006; Becker and Boreham 2009) have classified some conditions that might cause or increase the likelihood of social exclusion, although their studies may not focus primarily on older people.

Bradshaw *et al*. (2004) has indicated that social exclusion has been caused by a mixture of demographic, labour market and policy factors. They identified low income, unemployment, education, ill health, housing and transport problems, social capital, neighbourhood and fear of crime as the drivers of social exclusion.

Barnes *et al*. (2006) have found that social exclusion tends to increase with age, with those 80 years and above being more prone to exclusion. Further, those who live alone or have no children have poor mental or physical health and no access to a private car or lack of access to public transport are more vulnerable. The older persons living in rental accommodation, having a low income and/or reliance on welfare and no access to a telephone are also more prone to experiencing social exclusion (and these may not only be limited to older people).

Becker and Boreham (2009), as part of a series of projects on "Understanding the risks of Social Exclusion across the life course", carried out a project which looked at people aged 60 years and over for the period 1997-2005and included an analysis of multiple risk factors. Becker and Boreham (2009) focus on what they refer to as "risk markers" of social exclusion for people and families. These multiple risk markers include an interaction between various drivers. For example, those who have access problems tend to be aged 80 years and older, have no qualifications and live alone. Those who have both health problems and poor access to services tend to be older people who have no qualifications and a limiting, longstanding illness. The project also found that low income is associated with old people who live alone or are unmarried, those who have very infrequent contact with others and low social support, and people who feel that they do not belong in the area where they live.

Theobald (2005) examines the link between age care providers and social engagement of older people in five European countries (Austria, Belgium, Germany, Italy and Northern-Ireland) and finds that different types of care have been used in these countries. For example, Austria, Germany and Belgium use a combination of family and professional age care, which tend to induce a high frequency of social contacts. In contrast, families are the key care providers for

older people in Italy; consequently, in the case of low support being received from family members, older people can be exposed to a higher risk of social exclusion.

From the literature it can be summarised that factors potentially associated with social exclusion include: age, income, health, gender, ethnicity, family type, housing tenure, education, and environment, such as place of residence. Differing combinations of these conditions can have greater or lesser effects on the relative level of social inclusion or exclusion experienced by older people. The drivers that increase the likelihood of social exclusion are considered risk factors, whereas the factors that are associated with lowering the likelihood of social exclusion are viewed as protective factors.

Australian studies

It has been mentioned earlier that only a few Australian studies discuss social exclusion. Most Australian studies focused on a general discussion of social exclusion and were not specific to older people (see for example, Australian Social Inclusion Board 2009a and 2009b and Scutella, Wilkins and Horn 2009). Scutella, Wilkins and Horn (2009) proposed a framework to measure poverty and social exclusion in Australia across all age groups that covers various domains of material resources, employment, education and skills, health and disability, social, community and personal safety. Additionally, McNamara *et al*. (2010) and Tanton *et al*. (2010) constructed a comprehensive index of social exclusion for children in Australia at a small area level.

The Australian Social Inclusion Board (2009b:5) in its publication which sets out the Australian Government's vision and strategy for current and future social inclusion proposed drivers of social exclusion which covers "*poverty, low income and income inequality; lack of access to the*

job market; poor educational outcomes; poor health and wellbeing; lack of access to social

supports and networks; exclusion from services and discrimination."

Furthermore, some have discussed the issue of social exclusion by examining stages of the life

cycle (see for example Headey 2005). Headey's (2005) stages of life cycle range from childhood,

late teenage and early adult years, prime working age and family formation, pre-retirement

period and retirement. One particular domain of social exclusion can be more important than

others as level of capability and functioning of people are different across stages of life cycle.

With this, it is possible to identify which domain of social exclusion is more likely to be

experienced in a particular stage of the life cycle. As Scutella, Wilkins and Horn (2009) argue,

employment is clearly important to working age, while non-employment is not an appropriate

indicator of social exclusion for children or the elderly.

Moreover, Saunders, Naidoo and Griffiths (2007) have examined some key groups who are

considered vulnerable to social exclusion, including single older people (those aged 65 and

over). Saunders, Naidoo and Griffiths (2007: 75) examined three domains of exclusion:

disengagement, service exclusion and economic exclusion. The forms of disengagement includes

no regular social contact with other people, no participation in community activities and could

not pay one's way when out with friends. Service exclusion is defined as no access to a local

doctor or hospital, no access to a bank or building society and inability to make electricity,

water, gas and telephone payments. The third domain, economic exclusion, refers to not having

$500 in emergency savings and having not spent $100 on a special treat in the last year. They

find deprivation declines across the three broad age categories (i.e., under 30, 30-64, and 65 and

over), and older couples have the lowest level of deprivation among all family types examined.

Persistence of social exclusion

Social exclusion can happen in a dynamic setting or on multiple occasions. Multiple occasions of social exclusion tend to indicate a more disadvantaged condition. Social exclusion can occur at one particular time and persist or be repeated another time, even within one stage of the life cycle. The availability of longitudinal data has allowed social exclusion to be measured for longer periods of time. Table 1 provides a summary of the literature that has discussed recurrence of social exclusion.

(Table 1 about here)

As indicated in Table 1, there are various ways researchers define persistence of social exclusion. For instance, Scutella, Wilkins and Horn (2009: 29) proposed a continuum of exclusion: from not excluded to chronically excluded. Essentially, persistence could be defined as experiencing exclusion of multiple dimensions of disadvantage at multiple times. To measure persistence of social exclusion, the following steps are required:

1. To identify relevant dimensions and key indicators

2. To set up a threshold on how many indicators of disadvantage are necessary for defining exclusion in each dimension

3. To choose a threshold for how many dimensions of exclusion are used as a measure of comprehensive social exclusion in a particular time

4. To set up a threshold for persistence of social exclusion (social exclusion in multiple times).

Data, variable construction and methodology

The dataset used for this research is the HILDA Survey, which contains a representative sample of the Australian population. HILDA is a longitudinal survey conducted annually since 2001, and

the current research is based on the first eight waves (2001-2008). The working sample of this research consists of 2,162 individuals aged 55 years or older in 2001 who participated in all the eight waves of the survey (a balanced panel). Fifty four per cent are female. In some analyses the sample is disaggregated into a younger cohort (55–64 years at wave 1, n=1,102) and an older group (65 years and over at wave 1, n=1,060) to see if the pattern of exclusion differs across different cohorts.

Key dimensions and indicators of social exclusion (steps 1, 2 and 3)

Key indicators were selected to reflect social exclusion in four key dimensions: material resources; economic and social participation; social support; and community engagement. Dimensions such as access to services were not covered due to data limitations. For the purpose of this research, health status has been chosen as a driver rather than an indicator of social exclusion as health is more related to the cause of social exclusion.

The key dimensions and indicators are specified as follows:

Exclusion in material resources was identified by the presence of *any* of the following indicators:

- Could not pay electricity, gas or telephone bills on time

- Could not pay the mortgage or rent on time

- Asked for financial help from friends or family

- Pawned or sold something

- Was unable to heat home

- Went without meals

- Asked for help from welfare/community organisations

- Could not raise $2,000 in emergency.

Exclusion in economic and social participation was identified as *all* of the following indicators being true:

- Not worked for wage or salary

- Not worked in own business

- Not enrolled in a full-time course

- Not enrolled in a part-time course

- Not an active club member

- Contact with friends/relatives once a month or less

- Not volunteering.

Exclusion in social support was defined as *five or more* of the following indicators being true:

- I don't have anyone that I can confide in (agree)

- There is someone who can always cheer me up when I'm down (disagree)

- I seem to have a lot of friends (disagree)

- I have no one to lean on in times of trouble (agree)

- I often need help from other people but can't get it (agree)

- I enjoy the time I spend with the people who are important to me (disagree)

- People don't come to visit me as often as I would like (agree)

- When I need someone to help me out, I can usually find someone (disagree)

- When something's on my mind, just talking with the people I know can make me feel better (disagree)

- I often feel very lonely (agree).

Exclusion in community engagement was identified as true in *any* of the following indicators:

- Dissatisfaction—feeling part of your local community

- Dissatisfaction—the neighbourhood in which you live

- Dissatisfaction—how safe you feel.

This paper focuses on social exclusion in multiple dimensions, which indicates a more disadvantaged group and is of particular policy interest.

Definition and measurement of persistence (step 4)

Persistence of social exclusion can be viewed in different ways, for instance,

(1) older people experiencing exclusion again if they experienced exclusion in the previous year, or

(2) older people who experienced exclusion over the most time observed, that is, five or more years over the eight years in the sample.

In addition, persistence of exclusion can be examined in each of the four dimensions, or in multiple (at least two) dimensions.

In the descriptive analysis below, results are reported for both measures. However, in multiple regression analysis, results are mainly reported for the first measure utilising a dynamic model. In both cases, the focus is on the persistence of exclusion in multiple dimensions, which tends to indicate a more disadvantaged situation. If not otherwise specified, social exclusion refers to exclusion in multiple dimensions later on in this paper.

As can be seen in Appendix 1 (responding person longitudinal weights applied), only 9.8 per cent of the older people experienced social exclusion in multiple dimensions at a point in time, suggesting a low incidence of social exclusion among older Australians. However, the persistence perspective is not so rosy, as discussed in the next section.

Descriptive statistics of persistence

Table 2 below shows the persistence of social exclusion in selected dimensions. Column A shows the proportion or incidence of people experiencing exclusion if they experienced exclusion in the previous year. Column B provides an alternative measure of persistence, which shows the proportion of older people who experienced exclusion in five or more years over the eight years in the sample.

The persistence of exclusion varies across dimensions and sub-samples. Exclusion in material resources and participation is relatively more persistent over two consecutive years than exclusion in the other two dimensions. Interestingly, exclusion among the older sub-sample (mostly over the age eligible for the government Age Pension) is relatively less persistent on all measures except participation, possibly indicating the positive role of the Age Pension and related benefits provided by the government. Higher persistence of exclusion on the participation dimension for the older sub-sample may reflect lower attachment to the workforce for those aged over 65 years, which is not fully substituted by higher participation in social activities.

The last row of Table 2 indicates a relatively high persistence of exclusion among people who experienced exclusion in multiple dimensions, a more disadvantaged group in the sample. Among those who experienced exclusion in multiple dimensions in one year, about 45 per cent reported the same situation again in the following year. Alternatively, while only about 10 per cent of the sample experienced exclusion in multiple dimensions, half of this group did so for five or more years over the eight years of observations.

(Table 2 about here)

Regression methodology

This paper uses a dynamic panel logit model following Poggi (2007). The dependent variable is the presence of social exclusion at a particular time. Panel data analysis is applied not only to incorporate unobserved heterogeneity across older people but also to control omitted time variant variable bias (captured in the wave dummies).

The logit model is chosen and the dependent variable is set up in a discrete format. It is equal to one if an old person experiences exclusion in multiple dimensions and zero otherwise. The sample contains 8 waves of data (balanced panel), observing from t=1 to t=8. The conditional probability that social exclusion happens can be written as follows:

$$P(y_{it} = 1 | y_{it-1},...., y_{io}, z_{i,} c_i) = \phi(z_{it}\gamma + \beta y_{io} + \rho y_{it-1} + c_i) \qquad (1)$$

Where the functional form of ϕ is a logistic distribution, the dependent variable y_{it} is a condition which specifies whether a particular old person is socially excluded at time t. γ, β and ρ are the parameters to be estimated. z_i and z_{it} are, respectively, vector of time-constant and time-varying explanatory variables and c_i is the individual fixed effect (Poggi 2007: 64).

The dynamic relationship exists as there is a presence of lag of the dependent variable which serves as the explanatory variable. Thus, social exclusion in year t is determined by the lag of the social exclusion in year t-1. If $\rho > 0$, this will mean that experiencing social exclusion in year t-1 will increase the likelihood of experiencing exclusion at time t. The initial value of the social exclusion status at t-0 (wave 1) is also included. If $\beta > 0$ this indicates that experiencing social exclusion in year t-0 will increase the likelihood of experiencing exclusion at time t.

As illustrated in Figure 1, social exclusion in year t is also determined by the following drivers or factors: demographic factors (age, gender and country of birth), educational attainment, housing tenure (home ownership), labour force participation history, income, disability status, living arrangement, carer status and location. To allow for a non-linear relationship between social exclusion and age, a quadratic function of age is used. Proportion of time not working since finished full-time education is included to reflect labour force participation history. Carer status refers to whether being responsible for caring for disabled people, other elderly or children. The model also includes two location variables: (i) State and, (ii) SEIFA 2001 Index of relative socio-economic advantage/disadvantage (SEIFA index). SEIFA index shows the socio-economic condition attached to the place of residence. It is categorised in quintiles, and the lowest quintile refers to the most disadvantaged areas. Please note that at this stage the analysis is focused on personal characteristics of older persons rather than government interventions.

(Figure 1 about here)

Empirical results

The estimation is conducted in stages (see Appendix 2 for full estimation results). The base model, Model 1, only includes social exclusion status at wave 1 (initial exclusion status) and exclusion at the previous wave (lagged exclusion status); extra control variables are added in Models 2 and 3; Model 4 includes all explanatory variables specified in Figure 1 and is estimated using the entire sample as well as separately using the two sub-samples (young and older cohorts).

Table 3 reports the corresponding odds ratios of Model 4, estimated respectively using all the sample, the younger cohort and the older cohort. An odds ratio larger than 1 indicates a positive relationship between the independent variable in question and the likelihood of experiencing social exclusion (dependent variable), and an odds ratio smaller than 1 indicates a negative relationship. The factor may be considered as a risk factor for experiencing social exclusion in the former case, and a protective factor from social exclusion in the latter case.

(Table 3 about here)

State dependence and persistence of social exclusion

As shown in Appendix 2, both the coefficients of the lagged exclusion and the initial exclusion status are consistently large in size and statistically significant, no matter which other factors are controlled for.

The first column of Table 3 shows that among all the older people in the sample, experiencing social exclusion at wave 1 increases the odds of experiencing exclusion again later by approximately 30 times, suggesting a strong state dependence of social exclusion; and the odds of recurrence of exclusion nearly doubles if social exclusion was experienced in the previous year, revealing a significant persistence of social exclusion among this group.

The other two columns of Table 3 reaffirm the existence of state dependence and persistence of social exclusion among both the younger and the older cohorts. In addition, the estimated figures regarding the state dependence and persistence of exclusion are both larger for the younger cohort (Column 2 of Table 3) than for the older one (Column 3 of Table 3).

Risk factors for social exclusion

The results reported in the first column of Table 3 suggest that among all the older people in the sample, the following factors are associated with significantly higher risks of social exclusion: living with children only, caring for others with a disability or elderly, own disability, poor educational attainment, less engagement in employment since finishing full-time education, and living in the most disadvantaged areas. The results also show that older people who were born in non Main English Speaking countries may be more disadvantaged than others. [3]

However, comparing the results of the first column of Table 3 with those of the other two columns reveals that except for the risk factors of born in non Main English Speaking Countries, own disability, and caring for others with disability or elderly, which are shared by both cohorts, other factors only dominate among one cohort. For instance, less engagement in employment in the past, and living in socio-economically most disadvantaged areas are significant risk factors only for the younger cohort, whereas living with children only is significant only for the older cohort. Education effects also differ by cohorts.

Protective factors from social exclusion

For all the older people in the sample as a whole, the following factors are associated with significantly lower risks of social exclusion: female, living with partner only, having a bachelor degree or above, level of education, homeownership, better health, more time in employment since leaving full-time education, higher income, and living in socio-economically most advantaged areas.

When the two cohorts are analysed separately, income, education and health appear to be common protective factors. However, female, living with partner only, homeownership, and

better socio-economic circumstances as indicated by the SEIFA index are mainly protective for the younger cohort; for the older cohort, they do not matter much.

Age shows different effects for the two cohorts of older people. When the younger cohort (aged 55-64 years in 2001) is used (see results of Column 2 in Table 3), the risk of social exclusion appears to be U-shaped in age (minimising around age 62). For the older cohort (aged 65 years or older in 2001), in contrast, the risk of exclusion does not significantly vary with age. However, when the whole sample is used for estimation, a U-shaped relation is also observed between the risk of social exclusion and age (minimising around age 78).

Interestingly, the odd ratios of the dummy variables for the waves suggest that there is no clear pattern to indicate if social exclusion increases or decreases over time.

In addition, similar to Poggi's (2007, pp. 65) findings, it is found that even when the regressions have taken into account the explanatory variable, the estimated sigma_a > 1. This means that there is still some unobserved heterogeneity that cannot be explained by the explanatory variables. Perhaps this reflects the fact that some non-personal or location characteristics may affect social exclusion but are not controlled for in the model, for example, policy intervention variables such as the Age Pension.

Conclusion

The existing literature on social exclusion among older people, though relatively limited, suggests that disadvantage among the elderly is cumulative in nature. As such, disadvantaged older people may be subject to higher risk of persistent social exclusion.

This paper aimed to improve the understanding of the persistence of social exclusion among senior Australians using a nationally representative survey and focusing particularly on the potential factors protecting older people from experiencing persistent social exclusion.

The descriptive analysis showed that only a small proportion of older people were socially excluded in multiple dimensions at a point in time (less than 10 per cent), however, among this small fraction of people, about 45 per cent experienced social exclusion in multiple dimensions again in the following year.

The results of multiple regressions also confirmed a high persistence of social exclusion in multiple dimensions – exclusion in the previous year significantly increases the likelihood of experiencing exclusion in the current year. Interestingly, the younger cohort, that is, people aged 55-64 years in 2001, showed a higher persistence of social exclusion in multiple dimensions compared to the older cohort (aged 65 years or over at wave 1). This contradicts expectations, given that participation tends to be lower as people age. The results may have complex reasons, and policy intervention targeting older people on low income may have some role to play; however, as the Age Pension and related benefits in Australia are widely available based on means tests, it is difficult to isolate the effects of Age Pension and in-kind benefits from the impact of age and financial disadvantage. Further exploration is warranted.

The regression analysis also indicates that personal characteristics, location factors, and initial social exclusion status of individuals matter. In particular, the analysis shows higher education and income, as well as better health and previous employment experiences are important protective factors for the older people. These factors are interrelated and interact with each other, and their effects are cumulative over time. Unfortunately, as a result, none of the factors other than income can be addressed in the short term, and intervention in a single aspect can hardly be effective. Early intervention over life course would assist to reduce persistent social exclusion among older people. Improving education, employment and health would be preferable.

Note that, as indicated above, this paper has not taken into account government interventions such as the provision of Age Pension and other government benefits, which are expected to contribute to reducing the likelihood of social exclusion among the older people. The issue is left for future study. In addition, given the complexity of measuring social exclusion and the different patterns of incidence and persistence of exclusion across age cohorts, more efforts are required to further develop an age-related social exclusion framework to reflect different life circumstances across stages of life cycle and to improve the data collection of relevant contents for future analysis.

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Table 1. Thresholds of social exclusion and dynamic of social exclusion

	Scutella, Wilkins and Horn (2009)	Tomaszewski and Barnes (2008)	Poggi (2007)
Thresholds of social exclusion and dynamic of social exclusion	**Not excluded** No dimension of exclusion at any point in time	**No social detachment** For those who did not experience any detachment over the period	
	At risk of exclusion One or few dimensions of disadvantage at one point in time		**Excluded** For those deprived of two or more relevant functionings.
	Marginally excluded One or few dimensions of exclusion at various points in time	**Temporary social detachment** For older people who experienced social detachment in one of the three waves	
	At risk of chronic exclusion A number of dimensions of disadvantage in various points in time		
	Chronically excluded Multiple dimensions of disadvantage and persistently excluded	**Persistent social detachment** For older people who experienced social detachment in two or three of the three waves.	**Persistence** Subsequent years Or Experience number of spells in terms of social exclusion : one, two, three or more

Source: Authors' summary

Table 2. Persistence of social exclusion

Dimension	Measure A *Proportion excluded among those who experienced exclusion the previous year*			Measure B *Proportion excluded in five or more years*		
	Younger	Older	Total	Younger	Older	Total
Material resources	60.13	44.94	53.29	11.12	7.46	9.29
Participation	52.60	58.07	55.89	3.35	5.46	4.39
Social support	37.31	33.39	35.40	3.56	2.52	3.05
Community engagement	49.49	45.69	47.56	7.30	7.87	7.58
Exclusion in two or more dimensions	50.29	39.60	45.07	5.75	4.23	5.00

Note: Based on balanced panel of HILDA Release 8.0, Waves 1 to 8 (2001–2008). Weighted with responding person longitudinal weights.

Table 3. Regression results and odds ratios

	All Model 4 Odds ratio		Sample 1 Model 4 Odds ratio		Sample 2 Model 4 Odds ratio	
Persistence						
SE wave 1	30.124	***	34.976	***	24.317	***
SE at last wave	1.904	***	2.605	***	1.473	**
Age						
Age	0.796	**	0.168	***	0.845	
Age sq	1.001	**	1.014	***	1.001	
Gender (omitted male)						
Female	0.583	***	0.474	**	0.851	
Living arrangement (omitted living alone)						
Living with partner only	0.734	**	0.582	**	0.992	
Living with children only	1.617	**	0.944		2.796	**
Living with partner and children	1.052		0.796		1.473	
Country of birth (omitted born in Australia)						
COB: Main English Speaking Countries (MESC)	1.002		1.014		1.062	
COB: other countries	1.798	***	1.645	**	1.889	**
Education (omitted bachelor degree and above)						
Diploma or certificate	1.481	*	1.175		2.004	*
Year 12	2.177	**	2.578	**	1.947	
Year 11 or below	1.894	**	1.392		2.753	**
Carer status (omitted not caring for others)						
Caring for others with disability or elderly	1.884	**	1.723	*	2.137	**
Housing tenure (omitted other tenures)						
Home owner or currently paying off mortgage	0.737	**	0.603	**	0.866	
Health status (omitted having long term health condition, disability or impairment)						
Not having any long term health condition, disability or impairment	0.688	***	0.577	***	0.789	**
Labour market history						
Proportion of time not working	1.181	**	1.311	**	0.966	
Income						
Equivalised household disposable income (in real term in $2001)	0.746	***	0.701	***	0.812	*
SEIFA (omitted lowest quintile)						
SEIFA second quintile	0.726	**	0.612	**	0.849	
SEIFA third quintile	0.806		0.912		0.710	
SEIFA fourth quintile	0.735	*	0.755		0.732	
SEIFA fifth quintile	0.639	**	0.483	**	0.818	
State (omitted New South Wales)						
Victoria	0.937		0.954		0.926	
Queensland	0.957		1.088		0.778	
South Australia	1.102		1.403		0.836	
Western Australia	1.318		1.640	*	1.066	
Tasmania	1.870	*	1.507		1.968	*
Northern Territory and ACT	0.653		0.732		0.488	

Table 3. Continued

	All Model 4 Odds ratio		Sample 1 Model 4 Odds ratio		Sample 2 Model 4 Odds ratio	
Wave (omitted Wave 1)						
Wave 2	0.928		1.219		0.739	
Wave 3	0.690	**	0.763		0.614	**
Wave 4	0.827		0.994		0.660	**
Wave 5	0.719	**	0.642	*	0.686	*
Wave 6	0.595	***	0.552	**	0.507	**
Wave 7	0.637	**	0.503	**	0.558	**
Wave 8	0.711	**	0.477	**	0.632	**
Sigma_a						

Note: Based on balanced panel of HILDA Release 8.0, Waves 1 to 8 (2001–2008). ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.
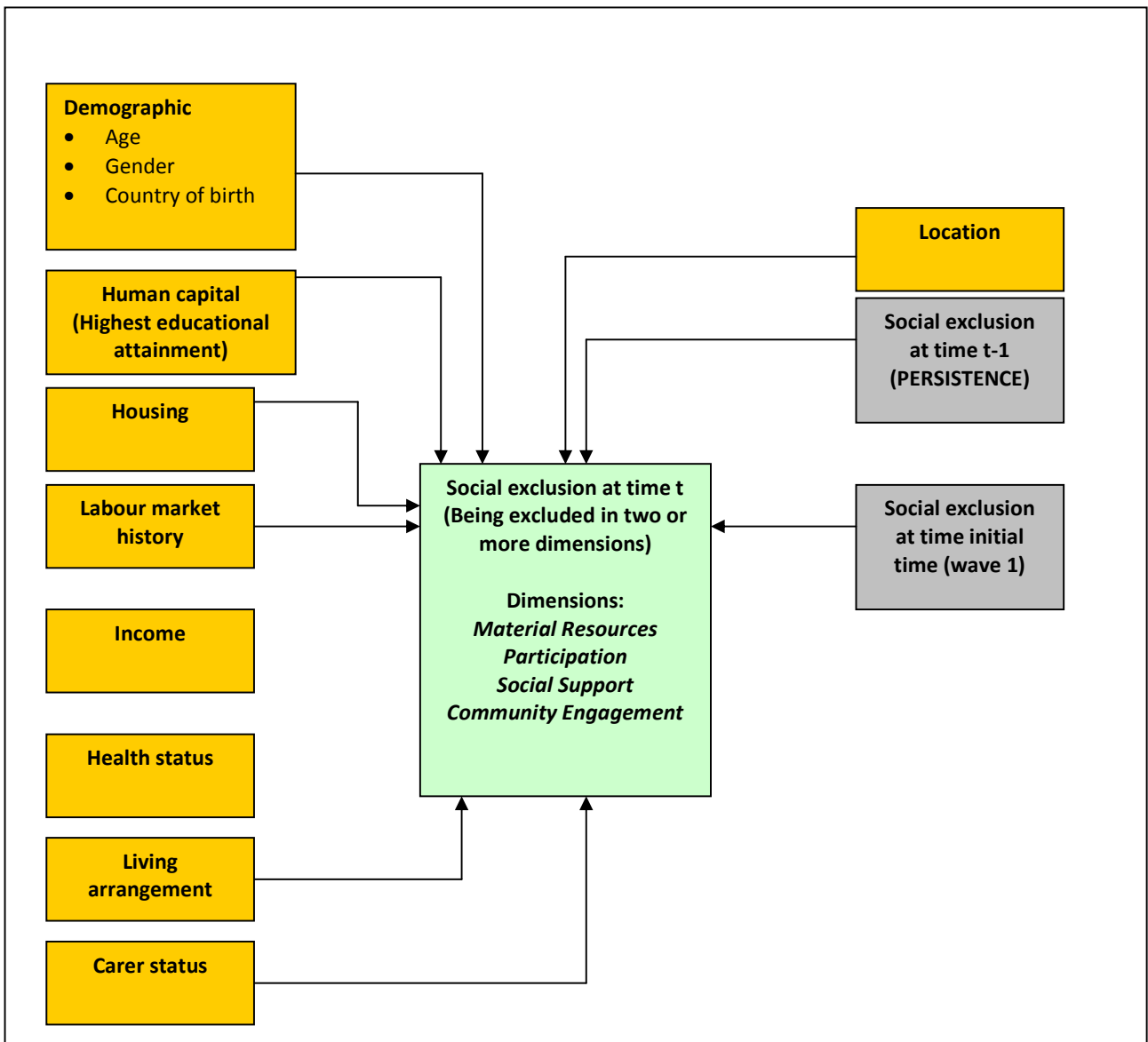
Source: Author's summary

Figure 1. Drivers of persistence of social exclusion

(Appendix 1 about here)

Appendix 1. Descriptive statistics of key variables in regressions

Key variables	Mean/proportion
Dependent variable	
SE at current wave	9.78 per cent
Incidence of social exclusion (SE):	
SE at wave 1	11.02 per cent
SE at the previous wave	9.53 per cent
Age	
Age (years)	69.26
Age sq	4864.98
Gender (omitted male)	
Female	53.94 per cent
Living arrangement (omitted living alone)	
Living with partner only	56.94 per cent
Living with children only	5.09 per cent
Living with partner and children	11.81 per cent
Country of birth (omitted born in Australia)	
COB: MESC	13.75 per cent
COB: other countries	17.45 per cent
Education (omitted bachelor degree and above)	
Diploma or certificate	28.43 per cent
Year 12	6.96 per cent
Year 11 or below	53.56 per cent
Carer status (omitted not caring for others)	
Caring for others with disability or elderly	3.26 per cent
Housing tenure (omitted other tenures)	
Home owner or currently paying off mortgage	83.25 per cent
Health status (omitted having long term health condition, disability or impairment)	
Not having any long term health condition, disability or impairment	54.20 per cent
Labour market history	
Proportion of time not working	29 per cent
Income	
Equivalised household disposable income (real term in 2001 $	24,242
State (omitted New South Wales)	
State: Victoria	26.82 per cent
State: Queensland	17.01 per cent
State: South Australia	7.93 per cent
State: Western Australia	8.56 per cent
State: Tasmania	2.30 per cent
State: Northern Territory and ACT	1.26 per cent

Note: Based on balanced panel of HILDA Release 8.0, Waves 1 to 8 (2001–2008). Standard deviation in brackets. Weighted with responding person longitudinal weights. SE is defined as social exclusion in multiple dimensions.

Appendix 2. Regression Results

	All								Sample 1		Sample 2	
	Model 1		Model 2		Model 3		Model 4		Model 4		Model 4	
Persistence												
SE wave 1	3.981	***	3.992	***	3.992	***	3.405	***	3.555	***	3.191	***
SE at previous wave	0.712	***	0.712	***	0.712	***	0.644	***	0.957	***	0.387	**
Age												
Age			-0.125		-0.126		-0.229	**	-1.782	***	-0.169	
Age sq			0.001		0.001		0.001	**	0.014	***	0.001	
Gender (omitted male)												
Female							-0.053		-0.539	***	-0.746	**	-0.161	
Living arrangement (omitted living alone)												
Living with partner only							-0.310	**	-0.542	**	-0.008	
Living with children only							0.480	**	-0.058		1.028	**
Living with partner and children							0.050		-0.228		0.387	
Country of birth (omitted born in Australia)												
COB: Main English Speaking Countries (MESC)							0.002		0.014		0.060	
COB: other countries							0.587	***	0.498	**	0.636	**
Education (omitted bachelor degree and above)												
Diploma or certificate							0.392	*	0.161		0.695	*
Year 12							0.778	**	0.947	**	0.666	
Year 11 or below							0.638	**	0.331		1.013	**
Carer status (omitted not caring for others)												
Caring for others with disability or elderly							0.633	**	0.544	*	0.759	**
Housing tenure (omitted other tenures)												
Home owner or currently paying off mortgage							-0.306	**	-0.505	**	-0.143	
Health status (omitted having long term health condition, disability or impairment)												
Not having any long term health condition, disability or impairment							-0.373	***	-0.549	***	-0.237	**

	(1)	(2)	(3)	(4)	(5)	(6)
Labour market history						
Proportion of time not working				0.166 **	0.271 **	-0.035
Income						
Equivalised household disposable income (in real term in $2001)				-0.293 ***	-0.356 ***	-0.208 *
SEIFA (omitted lowest quintile)						
SEIFA second quintile				-0.320 **	-0.492 **	-0.164
SEIFA third quintile				-0.216	-0.092	-0.343
SEIFA fourth quintile				-0.307 *	-0.281	-0.313
SEIFA fifth quintile				-0.447 **	-0.728 **	-0.201
State (omitted New South Wales)						
Victoria				-0.065	-0.047	-0.077
Queensland				-0.044	0.085	-0.251
South Australia				0.097	0.339	-0.180
Western Australia				0.276	0.495 *	0.064
Tasmania				0.626 *	0.410	0.677 *
Northern Territory and ACT				-0.427	-0.312	-0.717
Wave (omitted Wave 1)						
Wave 2	-0.138	-0.137	-0.137	-0.075	0.198	-0.303
Wave 3	-0.378 **	-0.377 **	-0.378 **	-0.371 **	-0.270	-0.488 **
Wave 4	-0.241 *	-0.242 *	-0.242 *	-0.190	-0.006	-0.416 **
Wave 5	-0.326 **	-0.331 **	-0.332 **	-0.330 **	-0.443 *	-0.376 *
Wave 6	-0.498 ***	-0.509 ***	-0.510 ***	-0.519 ***	-0.594 **	-0.679 **
Wave 7	-0.421 **	-0.441 **	-0.442 **	-0.451 **	-0.686 **	-0.584 **
Wave 8	-0.362 **	-0.392 **	-0.393 **	-0.340 **	-0.741 **	-0.458 **
Constant	-4.023 ***	0.093	0.138	7.841 **	55.573 ***	4.160
Sigma_u	1.761	1.768	1.767	1.592	1.610	1.482

Note: Based on balanced panel of HILDA Release 8.0, Waves 1 to 8 (2001–2008). ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

[3] For example, our calculation of the Australian Census data 2006 shows that the proportion of migrants who were born in other countries (non Main English speaking countries) and having educational level of bachelor degree and above and working in low skilled occupations were around 21 per cent while it was less than half of this figure for those who are born in Australia and in the Main English speaking countries