

# Social exclusion: the roles of mobility and bridging social capital in regional Australia

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## Keywords

Mobility; regions; social capital; social inclusion; wellbeing.

## Classification codes:

R41; R48; R58.

## ABSTRACT

Mobility is a fundamental requirement for well-functioning regions and for the wellbeing of their residents (and visitors). The paper first examines the role of mobility in promoting social inclusion of regional residents. Discussing the groups of regional people most likely to be at risk of social exclusion, because of poor mobility opportunities, the paper highlights pre-school children as a new focus for policy and research attention. It then highlights the importance of building bridging social capital to reduce risks of social exclusion in a regional setting, showing that, while regional people at high risk of social exclusion may achieve relatively high trip making (mobility), they may still have problems taking trips that build their bridging social capital. Public transport services can play a supportive role here, with indicative service levels outlined. To better meet regional mobility needs and achieve more effective use of mobility-supporting resources (e.g. vehicles, people), the paper proposes a central integrating role for Regional Accessibility Committees.

## 1. Introduction

Transport policy and planning conversations commonly include extensive discussion on mobility/accessibility priorities for cities, yet towns and regions often receive less attention. This is so, despite about one in five Australians living in low density cities and towns of between 30,000 and 85,000, smaller towns, rural or remote settlements, with much higher proportions in Europe. For example, Meijers et al. (2016) note that over half of the EU 15 urban population lives in small and medium-sized towns and cities of 5,000-100,000 population.

Mobility/accessibility as it relates to people in smaller towns and their hinterlands, in a low density regional setting, is the focus of this paper. It explores how mobility can foster social inclusion in a low density regional setting, drawing largely on our Australian case study findings set out herein. The scope of the paper excludes remote areas, which have their own particular challenges that deserve separate attention.

Australia's population growth rate has been high over the past decade (~ 1.65 per cent per annum). Table 1 shows that growth rates have tended to decrease with increased regional remoteness, with Major Cities becoming increasingly dominant. Inner Regional areas often benefit in population growth terms from their proximity to Major Cities.

Remoteness Area	Population change 1996-2006 (000)	2006 Population (000)	2016p Population (000)	Increase 2006-2016 (000)	Compound growth rate 2006-16 % p.a.
Major Cities	2069.2	14209.1	17159.0	2949.9	1.87
Inner Regional	330.2	3828.0	4357.6	529.6	1.3
Outer Regional	9.3	1927.1	2090.6	163.5	0.85
Remote + Very Remote	-17.9	486.8	521.7	34.9	0.83
<b>AUSTRALIA</b>	<b>2390.8</b>	<b>20451.0</b>	<b>24128.9</b>	<b>3677.9</b>	<b>1.65</b>

Sources: Derived from RAI (2015a), Table 2.3 and ABS (2017), Table 1.

**Table 1: Regional population numbers and growth in Australia by remoteness index**

Population ageing will be a major demographic challenge for Australian regions in coming years, with numbers aged 65 years or older expected to double nationally (RAI 2015a). This will be a particular challenge for what the Regional Australian Institute (RAI 2015b) calls Heartland Regions and Connected Lifestyle Regions, which have relatively high proportions of seniors, particularly those aged 65-74. The Institute notes, however, that *there is a strong pattern of migration of people in their 80s and 70s from regional to capital cities* (RAI 2015b, p. 91). At the other end of the age scale, relatively high young dependency rates (children under 15 years) also tend to characterise Australia's regions. Outmigration of young adults is another notable regional demographic trend, being adverse for regional development potential (and also tending to increase the *share* of the regional population that is aged over 50).

Discussion of the population groups most likely to be at risk of social exclusion due to relatively poor mobility opportunities, in both urban and regional settings, typically lists older people, youth, people with a disability, people with language difficulties (e.g. recent arrivals), those on low incomes and those with little or no car access, with women and single parents also sometimes included (Clifton and Lucas 2004, Currie and Delbosc 2011)). The higher proportions of older people and the young in Australian regions suggests, *ceteris paribus*, relatively greater transport disadvantage there than in metropolitan areas.

The National Institute of Economic and Industry Research (NIEIR 2009) has examined access to services in Australia, estimating representative distances a resident of metropolitan Australia, other urban Australia and rural/township Australia, would need to travel to access a core range of essential services, defined as: Education (from child care and pre-school through the various levels of schooling to TAFE and Universities); Health (the range of services from general practitioners through local hospitals to major hospitals, medical specialists and allied health services such as dentistry and optometry); and Welfare and related services (including Centrelink (welfare payments), aged and other residential care, and police services). NIEIR estimated that a typical rural resident would have to travel over 30 kilometres a day to access essential services which a typical metropolitan resident can

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reach by travelling an average of just 1.4 kilometres a day. The tyranny of rural/regional distance is immediately apparent, with distances for residents of some regions obviously being much greater.

Against this background, section 2 sets out some definitions of key concepts on mobility and social exclusion and then summarises key regional research in the area, revealing a sparse evidence base. Section 3 summarises findings from three Australian regional mobility case studies in which the authors have been closely involved and includes some new regional analysis on connections between mobility, social capital and risk of social exclusion. Sections 4 and 5 include discussion and set out the paper's conclusions.

## 2. Regional mobility and social inclusion/exclusion

### 2.1 Some concepts and definitions

The focus of this paper is with how mobility/accessibility impacts a person's risk of social exclusion in a regional Australian setting. The broad literature base on which this builds is characterised by a host of concepts that may readily confuse or even mislead a reader. Our shorthand definitions of key concepts follow.

**Mobility** = the capacity to move around by any means, including walking, cycling, private vehicles, public transport and other mobility devices. Mobility is a pre-requisite for being able to undertake activities anywhere other than where a person is currently located.

**Accessibility** = the ability to get to activities or opportunities, such as work, education, playing sport, visiting friends, etc.

**Social capital** = 'Social capital consists of networks of social relations which are characterised by norms of trust and reciprocity' (Stone 2001 p.4). Stone *et al.* (2003) identify three types of social capital:

*Bonding social capital* describes closed networks, such as the family and perhaps work. Bonding generates closer, denser ties.

*Bridging social capital* spreads resources between networks, allowing people to access multiple networks and therefore resources and opportunities.

*Linking SC* is created through networks with those in authority or who have power and who are useful for obtaining resources. They are commonly institutional connections.

Bridging and linking social capital are commonly considered together.

**Community Strengthening** = occurs where a sense of neighbourhood develops between individuals, families and organizations. It happens when people become actively engaged in the community. They feel socially connected, may become volunteers or leaders, and a sense of community pride is established (Vinson 2004).

**Transport disadvantage** = perhaps the most confused concept of this group, with different researchers having different conceptions of transport disadvantage (TD). As Currie and Delbosc (2011) point out, some analysts talk of TD in terms of (for example) characteristics of the transport system and urban form which make it difficult for people to undertake transport for the purpose of engaging in activities, while others focus instead on the characteristics of the groups of people who are considered most likely to have difficulties with transport (groups such as older people, youth, etc, as listed in Section 1). In their own research, Currie and Delbosc (2011) add another way of looking at transport disadvantage,

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based on self-reported sub-scales of perceived difficulty people have in undertaking transport. Our definition is simple: transport disadvantage occurs where people experience a shortage of transport options which restricts their mobility and hence their access to goods, services and relationships.

**Social exclusion** = Refers to individuals or groups of individuals at risk of not being able to participate in mainstream society.

**Wellbeing** = This term commonly refers to notions of happiness, life satisfaction, fulfillment and human flourishing (Sen 2000, Vella-Brodrick and Stanley 2013).

## 2.2 Key literature on regional mobility and social inclusion/exclusion

Most of the literature on connections between mobility and social exclusion is urban-based. The following summary includes some of that evidence base which is relevant to regions, adding some regional-specific evidence.

Hine and colleagues undertook research on transport and social exclusion in regional areas in the UK from the 2000s, finding considerable accessibility difficulties for groups at risk of social exclusion, compounded by an absence of, or poor quality, public transport (Mackey and Hine 2004; Kamruzzaman and Hine 2011 ). The results indicate that individuals from rural areas with a higher level of accessibility are more integrated within their local community. Differences were found between different groups within an area (e.g. non-car owning individuals who were more reliant on walking, and low-income individuals who made trips of a shorter distance).

In policy terms, the focus on connections between transport and social exclusion, and responses thereto, probably began in earnest with the work of the UK Social Exclusion Unit (SEU 2003). Links were drawn between the exclusion of people who do not have access to a car, and their needs for education, employment, access to health and other services and to food shops, as well as to sporting, leisure and cultural activities. Findings from the SEU's transport study were organized into five groups of barriers which need to be addressed in order to improve transport-based accessibility to key services considered by the SEU authors to be central to social inclusion. These are:

1. The availability and physical accessibility of transport
2. The cost of transport
3. Services are located in inaccessible places
4. Safety and security – fear of crime
5. Travel horizons – people on low incomes were found to be less willing to travel to access work than those on higher incomes.

The SEU argued, *inter alia*, that to remove these barriers, and reduce social exclusion through transport improvements, there is a need to understand how people access key activities and link this with planning to improve such accessibility (accessibility planning), as well as undertaking key strategic policy initiatives, such as:

- reviewing regulations governing the provision of bus services. This is particularly relevant in the UK context, where bus de-regulation outside London took place in 1985-86. Bus patronage outside London was 37% lower in 2015-16 than it had been

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in 1985-86, whereas it increased by 105% in London, where there was no deregulation (DfT 2015)

- integration of transport planning into planning for services provision (e.g. education), to enhance accessibility
- a range of initiatives to make transport more accessible, such as reducing cost and addressing the fear of crime associated with public transport
- the formation of partnerships between transport providers, local authorities and local service providers, such as education and health, to work on transport solutions.

To a large degree, the work on transport and social exclusion at that time was a conversation about accessibility in a narrow sense, about the need for people to obtain goods and services and get to work, school, recreation, etc. There was no systematic attempt to go further and examine how reducing transport disadvantage, and social exclusion related thereto, can impact on the wellbeing of those who benefit from transport improvements, nor to the subsequent benefits to society. The European Mobilate project changed this by examining connections between transport, the built environment and a number of personal characteristics and beliefs on the quality of life (wellbeing) of older people (Mollenkopf et al. 2005). Their research found rural older people in the five European countries examined were particularly disadvantaged in relation to mobility, requiring 'immediate intervention' (Mollenkopf et al. 2005, p.293).

The language of social exclusion has not been part of US transport conversations, but as Rosenbloom (2007) points out, US legislation about Civil Rights (1964), Environmental Justice and Americans with Disabilities (1990), all bear social inclusion footprints, with transport elements.

Much early Australian research on mobility and social exclusion is found in Currie et al. (2007). Currie (2007), for example, draws attention to the reliance on car travel in rural and regional areas and the associated dependence of young people on others for many transport needs, in conflict with their increasing desire for independence as they grow to adulthood. He emphasizes the important role that public transport can play in meeting travel needs and needs for independence of young people. He also notes the reduced trip making of young rural people, compared to those in larger regional towns, and expresses particular concerns about their access to education and employment opportunities. Stanley and Stanley (2004, 2007) suggest that, in Victoria's Warrnambool region, young people coming from families with low incomes and living on farms were perhaps the most transport disadvantaged population cohort in that region.

Hensher (2007) looks at the important role of the car in meeting travel needs of older Australians, particularly in areas with low public transport availability, such as rural and regional areas. Browning and Sims (2007) also recognize the importance of the car in providing mobility and accessibility for older Australians and point to the growing significance of the over 85 cohort, whose numbers are increasing, with a requirement for suitable travel opportunities. Betts (2007) sees the growing importance of providing travel opportunities for older Australians in rural/regional settings, a need accentuated by declining populations and services in many communities, with an associated requirement for longer trips. He argues that this means inter-regional public transport service levels need to improve.

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Much of the small amount of research on rural transport and social exclusion has concentrated on older people. For example, an overview of rural transport in the UK found that 37% of older people living in rural areas in the Republic of Ireland have a need for transport that is not being met by public or private means, while in Northern Ireland, 71% of people regard lack of access to public transport as a key disadvantage for older people living in a rural community (Centre for Aging Research and Development in Ireland 2010). Mobility for older people in Japan living in more rural areas and new towns was recently explored (Chikaraishi et al. 2017), finding that lack of access to a car reduced the range of accessible options and number of trips taken. People were more dependent on lift-seeking, with those without such contacts experiencing greater isolation. Ignoring younger age groups experiencing social exclusion is an issue that has strong social justice implications, as well as a regional economic impact and, longer term, impacts on the wider society. This paper argues that examining ways in which young people, in particular, can be provided with improved regional mobility choices is one important way in which regional economic and social participation can be supported.

### **3. Some additional Australian mobility/social inclusion evidence**

#### **3.1 Three case study areas**

The authors have undertaken studies on mobility and social exclusion in a number of regions in south-east Australia over the past decade and a half. These were undertaken in:

- Warrnambool, located on the Victorian coast about 260 kilometres south-west of Melbourne and home to about 35,000 people, who live in one of the fastest growing regional areas of Victoria.
- Western Victoria, where 25 small settlements were studied, some losing population and
- South Australia (SA), where three regions were studied (the Riverland, Mount Gambier and Port Pirie Regions), regional populations ranging from 30,000 to 50,000 and the largest single town having a population of 25,000.

All areas had higher population concentrations in the older and younger age groups than their respective States. Accessibility of regional services was seen to be deteriorating in parts of some regions, with services moving away from small towns, transport costs being shifted to the consumer. Considerable hidden transport disadvantage was identified. Interviews with those thought likely to be at risk of mobility-related social exclusion revealed common patterns in the three studies.

**Regional town route bus users** (where such services exist) tend to see they have no travel alternative, two-thirds in Warrnambool (for example) having no car available and some others not possessing a drivers' licence. Bus users often travel alone and the travel experience itself can be an important part of social inclusion.

**Young people** can be both independent and dependent in terms of travel needs. Independence comes from being able to walk or cycle for many trips, with weekends notable. Dependence comes from reliance on parents/others for car travel, especially during the week and particularly for those living outside urban settlements. Particular problems were found in

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relation to youth access to alternative educational programs, work and entertainment, with rural youth seen as facing the greatest relative transport disadvantage. The South Australian case studies, being the latest, raised particular concerns about access of regional young children to pre-school, a matter to which we return later in this Section.

**Tertiary residential students living on campus** in the larger regional centres without a car, tended to face transport difficulties. Reliance on others for travel was common and was seen by some as a source of concern. Female international students faced particular problems, being least likely to ask others for lifts.

**Seniors** are a significant and growing part of regional populations in the study areas. Car use is high and those with car availability tend to have good accessibility. However, the strong car culture among many seniors is associated with neglect of planning for personal mobility requirements in later years. Road safety issues may result.

Many **people with a disability** have never been part of the car culture and have organized their mobility requirements around using alternatives, including public transport, community transport, walking, friends'/families' vehicles and taxis. Those with a disability living outside urban areas face particular mobility problems.

**Those on low incomes** tend to be relatively more reliant on public transport, being less able to afford other non-active mobility options. Those living in areas with concentrations of socio-economic disadvantage, and particularly young single mothers, were a group at relatively high risk of social exclusion.

The **regional Indigenous community** in Warrnambool had its own buses that were well utilized. The need for such vehicles was indicative of transport disadvantage faced by many in this community, who felt uncomfortable using route buses, often due to racist remarks. Many in the Indigenous community experienced multiple sources of transport disadvantage, especially those living just outside urban boundaries.

The regional case studies all found that *community transport services*<sup>1</sup> are usually orientated towards older people and those with a disability, while the needs of younger people and those struggling on a low income, such as sole parents, are significantly less well catered for. Similarly, the critical role of leisure activity, and the associated social contact, was often overlooked. It is through these contacts that not only individual social inclusion and wellbeing is created, but also community strength and social capital are built, leading to a better resourced and a stronger community.

All three study areas found many unmet travel needs and, at the same, time, the existence of many underutilized resources that may have provided an opportunity to meet some of these unmet needs. Personal transport is essentially about meeting accessibility needs and fostering social inclusion (SEU 2003). However, institutional arrangements for service delivery tend to occur along different (silo-based) lines, based around services and modes. This mismatch largely explains the anomaly of unmet travel needs existing alongside no or

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<sup>1</sup> These are transport services mainly provided by welfare agencies and local government for their clients.

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few public transport services and underused transport vehicles. No entity, government or otherwise, is responsible for accessibility *per se* in Australian regions.

Following the work of the SEU (2003), the UK has implemented an “accessibility planning” approach, based (in their case) essentially on giving local government ownership of accessibility problems. By this approach, clear responsibility was assigned for dealing with issues raised by transport disadvantage/social exclusion. The major recommendation from the three Australian case studies was to establish a multi-stakeholder Regional Accessibility Committee (RAC) to undertake regional accessibility needs assessment, propose improvement priorities and contribute to more co-ordinated regional resource use in meeting mobility/access needs. The RAC idea draws on UK accessibility planning ideas, with the notable difference that no value judgment is placed on the type of activity a person wishes to undertake. Emphasis has also been placed in our Australian approach on facilitating mobility to improve bridging social capital, for reasons elaborated in section 3.2.

A RAC has been established in Warrnambool for about five years now, together with ConnectU, its service delivery arm. ConnectU provides people with access to a central hub for transport services, assistance and information. Users of the service include individuals who are unable to access public transport and those who are having difficulty finding a means of travelling to and from their destinations. ConnectU organises volunteer drivers to provide door-to-door transport for passengers to activities. The service often extends beyond vehicle transportation (e.g. it may assist passengers from the car and into a medical clinic for their appointment or familiarise passengers with public transport by accompanying them on their public transport trip). While the research assessing the need for a transport hub in Warrnambool (Stanley and Stanley 2012) found that there were many under-utilised vehicles, which could be used to transport people, achieving shared use of these vehicles has become a significant barrier to the operation of ConnectU, a barrier that needs to be removed.

A review of ConnectU undertaken in 2014 (Wines et al. 2014) found that, excluding intangible benefits, benefits to volunteers and the wider community, the service had a benefit/cost ratio of 2.8. Small improvements in the wellbeing of passengers and their attachment to community were measured, even given the limited use of the service by many passengers. South Australia is about to set up a demonstration RAC in Port Pirie Region.

The south-east Australian case studies also proposed improvements in:

1. public transport service frequency, coverage and service span, for both town services and between such towns and the regional centre, a matter to which we return in Section 6
2. better marketing of public transport services
3. regulatory reform, to increase the flexibility with which services can be provided – more flexible use of spare seats on dedicated school buses is a particular focus, where little progress has been achieved. Relevant access criteria could include: access to further education opportunities; adults attending meetings at a school; access to employment opportunities; low income households/no car availability; and, medical and health needs.



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Concerns were raised in SA, in particular, about the safety of children travelling on a school bus with others, if access to spare seating capacity on dedicated school bus services is opened to a wider range of people. However, there is little evidence to support this extent of concern, whereas there are benefits to be gained from a mixed passenger group. While it cannot be conclusively said that no child will ever be abused or assaulted while travelling on a school bus, should some spare seats on the service be extended to some others of the travelling public, the risk is very low, no greater than anywhere else and less than the risk children face from assault by relatives and other intimates (AIFS 2016; Gallagher et al. 2008; Stanley and Goddard 2002). Indeed, there are suggestions that adults on the bus may provide some protection to children (Sainio et al. 2010), particularly from the more common and potentially highly damaging behaviour in relation to bullying, which can pose a serious risk to mental health (Fluke 2016). The presence of other adults on a bus is likely to reduce the incidence of bullying, particularly where the community and bus drivers are made more aware of the signs of bullying and abuse and effective ways to intervene (Hawkins et al. 2001). It would be of benefit for the bus driver to be given education on grooming behavior of abuse perpetrators and signs of bullying behavior.

The most recent work in SA has drawn attention to the issue of relatively low levels of child development present in parts of some SA regional areas. The Australian Early Development Census (Australian Government 2016) examined the percentage of children on school entry who have reached developmental milestones on physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, and communication skills and general knowledge. The Australian average sits at 11.1% of children having two or more developmental delays on reaching school age. Of considerable concern are a couple of areas in the Regions studied that have a much higher proportion of children with developmental delays, with these proportions increasing. From 2009 to 2015, for example, the percentage of children with developmental delays on two or more indicators about doubled in some areas.

Findings from two major international assessments of student learning show that educational disadvantage is a bigger problem in Australia than in many comparable countries and has not improved over the past 15 years (Perry 2017). Delayed early development leads to either poorer outcomes in terms of health and/or employment for adults, or more difficult and costly later interventions to change this trajectory. *The sooner a child receives access to healthcare, intellectual and social stimulation, and guidance from loving and attentive adults, the more likely that child will grow up to be happy, healthy and productive* (The Smith Family 2010, p.6).

Investigation needs to identify why these developmental outcomes are occurring. There are strong suggestions that part of the problem may be reduced access to early childhood education services. For example, Maternal and Child Health Nurses in S.A. spoke of their concern that some infants could not access pre-school. Evidence of transport difficulties was also noted in the school bus policy where, in most situations, pre-schoolers were not permitted to travel on the school bus, or their parents were not permitted to travel with them. It was also suggested that housing costs were a contributory factor, families moving from larger urban areas to cheaper housing in rural areas that lack transport choices. This is an

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important and, we believe, new issue for regional transport disadvantage - very young children have not been on the transport disadvantage radar to any significant extent to date.

### **3.2 Mobility and more socially excluded people**

The authors were active contributors to an Australian Research Council supported project, *Investigating Transport Disadvantage, Social Exclusion and Wellbeing in Metropolitan, Regional and Rural Victoria*. This project has been widely reported, so the method is not repeated here (Currie 2011; Stanley et al. 2010; Stanley et al. 2011a, b; 2012; Stanley and Hensher 2011; Vella-Brodrick and Stanley 2013). The research showed significant associations between trip making, social capital, household income and a person's risk of social exclusion, with that risk in turn being significantly associated with wellbeing. Sense of community was also a significant contributor to wellbeing. For the purposes of the present paper, additional analysis was undertaken on the regional survey data collected in that project.

The project gathered information from a self-completed Victorian government travel questionnaire from April 2007 to June 2008. A number of respondents to this travel survey aged 15 years and over were then given the opportunity to opt in to an additional comprehensive home-interview, which gathered detailed information on factors such as demographics and household composition, social exclusion risk factors, social capital and connectedness to community, subjective well-being, psychological well-being, personality, transport usage and transport difficulties. Explanation of how these variables were measured is set out in Stanley et al. (2011a; 2012) but comment is provided here on the bridging social capital variable, because this is used later in this Section for valuation purposes. A supplementary survey targeted people likely to be highly socially disadvantaged. In total, 235 regional respondents participated in these surveys, the regional surveying being undertaken in Victoria's Latrobe Region (about 160 kms east of Melbourne's Central Business District).

As explained in Stanley et al. (2012), a common way of measuring a person's social capital is to ask questions about frequency of contact with a range of significant others on a broad frequency of interaction basis. The time periods used in such frequency questions are not equal in length, which means the social capital measures should be treated as a series of categorical variables. In terms of valuing changes in social capital, however, this approach is technically accurate but information poor; useful values of social capital cannot be derived from such dummy variables.

Stanley et al. (2012) included an analysis in which it made the strong assumption that frequency of interaction can be treated as a continuous variable (rated from 1-6 on each variable), and that frequencies of contact with particular groups can be added to give an indication of strength of bonding social capital and bridging social capital respectively. In terms of bridging social capital, the particular groups of contacts included were *work colleagues* and *people associated with groups in your community (e.g., church, sporting, clubs, school, self-help or voluntary groups)*. For a person who responds to each category of network, the range of possible values for bridging social capital under this set of assumptions is from 2 to 12. As noted in Stanley et al. (2012):

*The resulting values only have meaning in the particular situation where the strong assumptions are thought to be a reasonable representation of reality. This will be rare. However, they at least provide a point of departure for discussing possible values and emphasising the potential importance of pursuing better measurement methods and related valuations (p. 3598-99).*

Table 2 summarises characteristics of respondents to the two regional surveys, who were not selected to be representative of the wider community so much as to be representative of persons across a wide range of social exclusion risk levels. The most striking differences between the two regional samples are that respondents to the special survey were much younger, with a lower level of education and were much more likely to be unemployed and born in Australia.

<b>Characteristic</b>	<b>Original Sample (N= 148)</b>	<b>Special Survey (N=87)</b>
<b>EMPLOYMENT</b>		
Full-time	23	3
Part-time	11	6
Casual	3	4
Retired	40	2
Study	7	17
Unemployed	6	50
Home duties	7	4
Other	3	1
<b>AGE</b>		
15-17	5	23
18-35	12	41
36-50	23	20
51-65	33	2
66+	28	1
Average age	55	29
<b>EDUCATION</b>		
Some primary school	1	-
Finished primary school	57	61
Finished secondary school	24	11
Diploma	42	13
Degree	14	2
Post-graduate degree	10	-
<b>COUNTRY OF BIRTH</b>		
Australia	122	83
English speaking country	15	3
Non-English speaking country	11	1

**Table 2: Respondent characteristics from Latrobe Regional Surveys (2008)**

Table 3 sets out some key descriptors of participants in the two samples in terms of numbers of social exclusion risk factors, with a maximum of five possible risk factors measured: income, employment, political activity, social support and participation (Stanley et al. 2011a, b). Mean performance scores on some key associated factors are also shown. Sample numbers are less in this table, the table only including respondents from whom a full set of responses was received. Special survey respondents, on average, failed twice as many exclusion risk thresholds as respondents to the original survey. They also had much lower levels of bridging social capital, household income and cars per adult in the household than respondents to the original regional survey, but made more trips per day than those original survey respondents.

Variables	Units	Original sample (N=141)	Special survey (N=69)	Combined sample (N=210)
Risk of social exclusion	Number of thresholds failed (5 possible)	1.04	2.10	1.38
Number of trips on travel day	Trips/day	3.55	4.65	3.91
Bridging social capital score	1-12 on a continuous scale*	7.27	6.01	6.86
Cars per adult in household	Number	1.06	0.59	0.90
Household annual income	\$'000 p.a. (2008 prices)	52.62	34.49	46.87

Note: \* Continuous scale derived from two 6 point rating scales (Stanley et al. 2012).

**Table 3: Descriptive statistics relating to risks of social exclusion for regional survey respondents (2008)**

Stanley et al. (2011a) showed that the number of trips taken by respondents to the original regional sample was significantly related to risk of social exclusion, the higher the risk of social exclusion the lower the number of daily trips, and that the implied value of an additional trip to a regional person at such risk was \$19.40 (2008 prices). That regional model replicated a model that had been previously estimated by the authors and colleagues for metropolitan Melbourne, to enable comparison of the implicit values of additional trips as between the two sample areas. It did not seek to explore additional variables that might have influenced risk of social exclusion in the regional setting.

Some further analysis was undertaken for the current paper. Initial simple linear regression modelling on the two regional sampling groups (not detailed herein) examined the association between number of trips on travel day and risk of social exclusion. The resulting models suggested that increasing the number of trips undertaken by members of each respective sample group would reduce their risk of social exclusion by 0.07 units per additional trip, against respective mean exclusion risk values of 1.04 and 2.10 (Table 3).

The 0.07 co-efficient was significant in the model for the original sample at the 5% level but was not in the special survey group model (significant at 15% level only). This is not surprising, given that respondents to the special survey undertook about 30% more daily

trips, on average, than respondents to the original survey (Table 3), the latter being (on average) at much lower risk of social exclusion. Given the older age profile of the original regional sample, this finding suggests that facilitating additional trips may be a more useful way of reducing risk of social exclusion among older regional/rural people than among younger groups.

Bridging social capital, car availability and household incomes were then added as independent variables to the modelling, being expected to contribute significantly to explaining risks of social exclusion. Table 4 sets out the separate resulting multiple regression models for the original regional survey sample group (N=141) and the special survey group (N=69), together with the model for the combined sample (N=210).

Variable	Original sample (N=141)	Special survey (N=69)	Combined samples (N=210)
Constant	2.541	3.431	3.012
Number of trips on travel day	-.017 (-.569)	.042 (.975)	.026 (1.100)
Sum of bridging social capital	-.108 (-4.169)*	-.126 (-3.326)*	-.126 (-5.765)*
Cars per adult in household	-.164 (-1.211)	-.330 (-1.545)	-.364 (-3.194)*
Household income (\$000 annual; 2008 prices)	-.009 (-3.585)*	-.017 (-2.959)*	-.011 (-4.821)*
Adjusted R <sup>2</sup>	.280	.312	.373

Note: \* Significant at 1% level.

**Table 4: Modelling Latrobe regional risk of social exclusion: Dependent variable = Social exclusion risk thresholds failed**

Once the additional variables are included, number of trips on travel day ceases to be a significant contributory variable for the original sample. Bridging social capital and household income are both significant in all three of the regional models at the 1% level, the negative values showing that increasing bridging social capital and household income will reduce risk of social exclusion. The higher co-efficient values in the special survey model underline the importance of striving to build bridging social capital and household income to reduce exclusion levels among this group. This reflects the significant bridging capital and income deficits between the special survey group and the original regional sample group. Number of trips on travel day has a correlation co-efficient of 0.21 with bridging social capital (significant at the 1% level), suggesting that it supports bridging capital.

The number of cars per adult in the household is also significant in the combined model, increasing the number of cars/adult reducing risk of social exclusion, but it is not significant in the models for the two separate groups. Adding cars without adding income may only compound household budget problems for the most at-risk groups, so other ways of providing improved access need to be identified. This is likely to involve measures such as improved public transport service levels, car sharing or use of vehicles provided through programs like ConnectU.

The Australian Research Council survey asked respondents about activities they cannot do because of transport difficulties. In the regional samples, these difficulties mainly apply to the special survey respondents, who are generally at higher risk of social exclusion than the

original regional survey respondents. Even though the more at-risk regional special survey respondents typically undertook more daily trips than the original regional survey respondents (Table 3), they were also much more likely to report activities they could not do because of transport problems. The original regional survey group (N=148) only elicited 30 replies to this question (~1 per 5 respondents), an indicator that average mobility-related exclusion risks for this group are relatively low.

Conversely, and even though they averaged more trips a day, the special sample group came up with 74 activities that could not be done because of poor transport (~5 per 6 respondents). The same types of activity appear as those not able to be done because of poor transport as were cited by the original sample survey respondents, but with higher frequency: *enjoyment* (15), *sporting/leisure* (14) and *visiting friends and relatives* (12). Of some concern, given the large number of the special survey group who were unemployed, 13 respondents identified *work* as an activity they could not do because of poor transport, with another 8 reporting getting to an *interview for jobs*.

While the special sample undertook trips, they had relatively low social inclusion. Given that the sample has large numbers of youth, younger people and people with a low income, much of their travel is likely to be active travel or travel by public transport. Table 5 confirms this: those at higher risk of social exclusion make relatively fewer trips as car drivers and more trips by active transport or PT.

Risk level	Sample size	All car driver trips	All car passenger trips	All PT passenger trips (50% or more PT trips)	All walk/cycle trips (50% or more walk/cycle trips)
0-1 risk factors	110	40.9%	10.0%	1.8% (3.6%)	6.4% (19.1%)
2 risk factors	44	34.1%	15.6%	6.8% (13.6%)	18.2% (20.5%)
3 or more risk factors	45	20.0%	4.4%	11.1% (24.4%)	8.9% (26.7%)
<b>Full sample</b>	<b>199</b>	<b>34.7%</b>	<b>10.1%</b>	<b>5.0% (9.5%)</b>	<b>9.5% (21.1%)</b>

**Table 5: Method of travel, by risk of social exclusion**

This finding should not be unexpected as youth, testing their growing independence from family, commonly seek bonding social capital from their peers. Youth and younger people are more likely to engage in active transport, walking and cycling and using other mobility devices, such as skate boards, facilitating trip making. Those with a low income who are risk of social exclusion also build their bonding social capital to maintain their wellbeing. As found in the Warrnambool study and reported elsewhere, (Currie et al. 2009) those at risk of social exclusion are also very good at lift giving and car sharing. However, while bonding social capital is highly important for youth, it is bridging social capital that is more important for facilitating broader societal social inclusion. The availability of transport for these groups to undertake particular activities associated with bridging social capital, outside social contact with their peers, neighbour and family groups, is particularly important and may require some

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longer trips, such as for work. Thus, in the absence of a car, public transport becomes very important as a means of linking people to opportunities to become more embedded in society, reducing personal and social costs.

The equations set out in Table 4 enable the implicit value of regional bridging social capital to be estimated for both sample groups and for the combined sample, since bridging social capital and household income (annual) are both significant explanatory variables in each model. As noted earlier in this section, this involves strong assumptions about continuity of the bridging social capital variable but estimating implicit values does provide a broad sense of the importance of bridging capital, using the everyday measuring stick of money.

The implicit value of bridging social capital is derived by dividing the co-efficient for bridging social capital in Table 4 by that for household income (in \$000), which results in an annual value of \$12,000 for the original sample, \$7,400 for the special survey sample and \$11,450 for the combined sample. All values are in 2008 prices and are substantial and close enough to the metropolitan Melbourne value estimated in Stanley et al. (2012) to provide comfort. In other words, increasing the value of bridging social capital (as measured) of a person in the combined regional sample by one unit is roughly equivalent to giving that person an additional \$11,450 p.a. income.

It is notable that the mean score for bridging social capital levels among respondents to the special survey was 6.01, some 1.26 units less than the level for respondents to the original regional survey. If policy measures were able to lift respondents to the special survey up to the average bridging social capital score of the original regional survey respondents, the implication is that the value per respondent would be worth about 1.26 times \$11,450, or about \$14,430, which is equivalent to around 80% of the household income gap between the two groups (using the combined sample value for social capital). This underlines the importance of seeking to build bridging social capital among people at risk of social exclusion. These findings suggest that public transport can play an important role here.

#### **4. Discussion**

The main implications that we draw from this new regional analysis are as follows:

1. If you are a regional resident at relatively low risk of social exclusion, you are likely to have relatively good bridging social capital, come from a household where income levels are relatively high and have relatively few transport problems, mainly because car availability will be relatively good. Older people may be more vulnerable among these general descriptors and may need support achieving access to desired activities
2. Conversely, if you are a regional resident at relatively high risk of social exclusion, you are likely to have relatively poor bridging social capital, come from a household where income levels are relatively low and be more likely to experience activities you cannot undertake because of transport problems. Trip making per se may be still undertaken but being able to travel to the activities you wish to undertake when you wish to undertake them, including getting to work or a job interview, is more likely to be a problem, with adverse consequences for building important bridging social capital. Younger people are likely to be relatively more prominent among these

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cohorts. Providing affordable travel opportunities that meet trip making demands, especially those that facilitate inclusion in the broader community, and which facilitate greater capacity for independence and social mobility (getting on in life, as distinct from getting by), is important for these people.

A strong case is building in this transport research. People living in regions with poor mobility/accessibility opportunities are at increased risk of social exclusion and diminished personal wellbeing, right through the age groups. This is likely to have flow-on consequences in areas such as lower education retention, lower employment levels, with the risk of higher substance abuse and higher crime rates in younger youth and adults, with a risk of poorer mental health and increased medical costs, and such like, across the board, matters that are important but not measured in this present paper. The analysis shows that reducing regional mobility-related social exclusion will improve regional social wellbeing and health and is likely to increase personal capabilities and economic participation in the younger age-groups. Building bridging social capital is an important way to reduce exclusion risk and mobility supports this process. The provision of PT and associated coordinated and flexible mobility options, such as can facilitated by a RAC, are important for realizing bridging capital.

Based on the findings of this paper, benchmarking PT route bus service standards in Australian regional towns might be something like the following:

**Town population 3,000--6,000:** Hourly 'public transport' type service: Monday to Friday 8.00am to 5.00pm start of last run; Saturday morning 8am to 12pm. Use school buses (including spare seats thereon) or community buses as far as possible, vehicle sizing depending on load expectations, and using volunteer drivers, if feasible, would help to contain costs. This may create issues with disability access, so availability of a vehicle with wheelchair access is important. These services should be timetabled but with a dial-up (on-demand) opportunity, if this only requires a small route deviation (implying a little slack in the timetable).

**Town population ~6,000--15,000:** Hourly regular PT route service: Monday to Friday 7am to 7pm start of last run; 8am to 4pm Saturday; 9am to 2pm Sunday. Use low floor route buses complemented by school buses and community transport vehicles, including volunteer drivers, for some runs, if needed and feasible, with all vehicles accessible.

**Town population ~20,000>:** Hourly PT service, with 2 or so additional services in both the am and pm peaks; Monday to Friday 7am to 9pm, or later, start of last run; Saturday hourly headway 8am to 6pm; Sunday 9am to 4pm. All services operated by low floor route buses. The additional peak services could perhaps be provided by community transport or school buses in the pm peak.

The ultimate test of whether such service levels are defensible will be whether they generate sufficient patronage to prove their worth. The \$19.40 value of an additional regional trip, calculated by Stanley et al. (2011a), from the original regional data set as used herein, can be updated to shed light on this matter, resulting in a figure of \$23.57 (updated by the increase in Victorian Average Weekly Ordinary Time Earnings from 2008-16<sup>2</sup>). The model in

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<sup>2</sup> <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6302.0May%202012?OpenDocument>

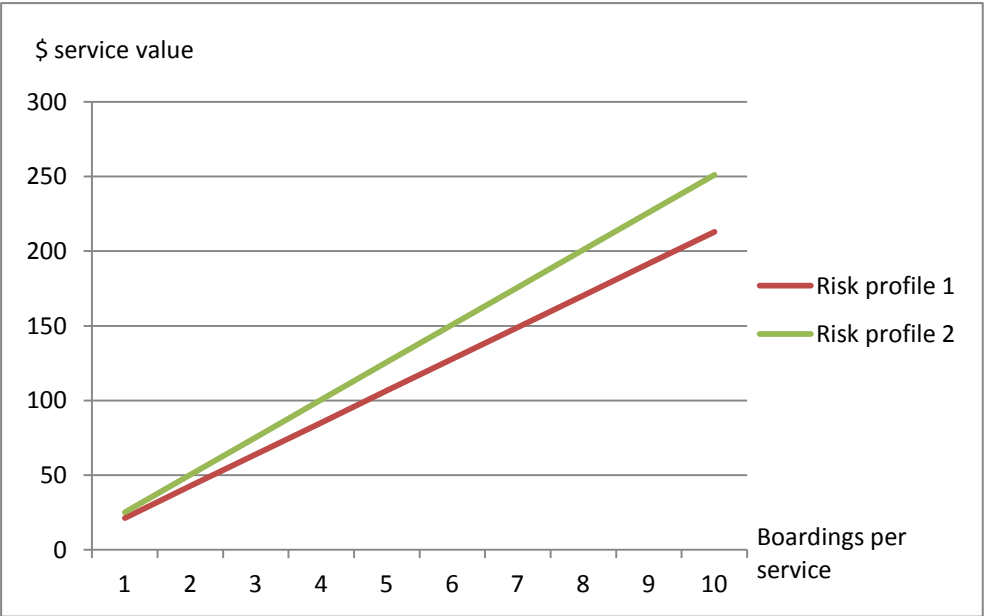


Stanley et al. (2011a) implies higher values to persons from lower income households, with a 2016 value of \$35.96 being applicable to a person whose household income aligns with that of a typical household from the special survey sample.

Figure 1 shows two regional town route bus service benefit curves. Risk profile 1 assumes that the patronage mix on the service is one third with characteristics like respondents to the original regional sample (value \$23.57/trip), one third with characteristics like those from the special survey group (\$35.96/trip), with the remaining one third of users being persons at no risk of social exclusion (nominal \$5 trip value).

Our experience is that the client group for regional town route bus services is more at risk of social exclusion than this, so Figure 2 shows a second benefit curve, Risk profile 2 assumes: 25% of users are like the original survey respondents; 50% are like special survey respondents; and 25% are at no exclusion risk.

Figure 2 shows the implied value of a bus service at increasing boarding rates per service for the respective risk profiles. If a regional town route bus service costs about \$120 an hour to provide, the boarding rate needed to break-even in terms of user benefits is about 5 passengers per hour, given the high value of a trip to a person at risk of social exclusion. The lower the exclusion risk of passengers, the higher the implicit service boarding rate that is required to break even in terms of user benefits. Such services would recover only a small proportion of their direct service cost, in financial terms, but are of significant social value, to both users at risk of exclusion and the wider society in terms of savings in flow-on costs, such as crime, unemployment, adverse health outcomes, etc.



**Figure 1: Implicit value of regional town route bus service, by boarding levels and patronage exclusion risk level (2016 prices).**

Appropriate intra-regional public transport service frequencies will depend on the spatial distribution of population and activities in a region. However, towns of more than 2,000 should have multiple return services to the largest regional town on a daily basis, to support

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regional integration, social inclusion and economic opportunity, provided this does not involve a one-way trip of more than about an hour. As town size increases, so should service frequency, towns of perhaps 4,000-5,000 having a two hourly headway return service to the (larger) regional centre (depending partly on distance/travel time). Spare seats on dedicated school buses, or other existing community transport or other services, may again be able to provide some of these travel opportunities, provide this is done in an integrated way. Demonstration studies, as are about to commence in South Australia, will provide valuable insights into target frequencies.

Importantly, in terms of new findings, this paper finds that barriers around mobility contribute to a lack of personal opportunities from a very early age. Children who are not able to get the benefit of early socialisation in a pre-school setting, especially those children from families experiencing a range of disadvantages, are more likely to struggle keeping up with their education. They may leave school or disengage from school and on-going educational options and thus employment options, with substantial societal costs resulting. Examination of the regional special needs group showed that youth, while mixing with their peers, may lose self-esteem and also experience a lack of purpose in life. While they are mobile, their activities more commonly involve interaction with peers, the bridging activities that connect them with societal opportunities (education, work, a broader network of contacts) being less available. This finding was shown, in earlier analysis of the urban sample of the Australian Research Council findings, to risk the development of negative emotions where socially excluded people may develop a belief of loss of control over the direction of their lives (Stanley et al. 2010). There was also found to be a significant association between a belief of lack of personal control and poor bridging social capital, which supports the findings reported in this regional study.

## **6. Conclusions**

The paper reinforces the importance of mobility for regional social inclusion. Importantly, it draws attention to the important role played by bridging social capital, which can be facilitated by PT, in reducing risk of regional social exclusion. It also highlights pre-school children as a priority for improved mobility opportunities, an additional to the usual list of people at risk of mobility-related social exclusion. Mobility is important in reducing exclusion risks, both directly and as an input in building bridging social capital.

In terms of directions for improving regional mobility outcomes in low density Australian regional settings, the paper proposes:

1. provision of 'social safety net' town route public transport services and intra-regional services, to improve access opportunities, with a particular focus on building bridging social capital for those at risk of social exclusion by having 'enough' services in terms of frequency and coverage, enabling people to rely on the service for their activities. Indicative figures suggest that, with Australian regional town route bus service users generally at relatively high risk of social exclusion from a lack of mobility opportunities, boarding rates of about 5 passengers per service hour is sufficient for a town service to break even in terms of user benefits, the exclusion risk profile of Australian regional services indicating high trip value from reducing exclusion risks

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2. enabling regional communities to have more control over planning and delivering regional transport improvement priorities that affect their wellbeing and that of their communities, through a mechanism like Regional Accessibility Committees. At regional level, this should involve adoption of what is becoming known in the UK as a 'total transport approach' to planning and delivering regional mobility services (UK House of Commons Transport Committee 2014).
  3. giving high priority to the mobility needs of regional young people, including a much greater focus on the needs of pre-schoolers.

The indicative target service levels for town and intra-regional services are higher than what Australian towns usually provide but are warranted by the high user value of services that support social inclusion, thus facilitating improved social and economic participation (see also Stanley and Hensher 2011). More creative means of service provision, involving a 'total transport' approach, should make achievement more feasible, by containing unit service costs.

Instead of thinking about individual modes, a more effective regional transport system needs to start with users needs and look at how best to combine resources that are already used, frequently ineffectively, to meet such needs, adding additional resources when needs demand. The two major barriers preventing successful implementation of a 'total transport' type approach, which we argue should be facilitated in an Australian setting through Regional Accessibility Committees, are (1) the incapacity of managing authorities (State and Territory Governments) to step outside silo thinking and (2) the parochial attitude of many current mobility service providers towards 'their assets', which have often been provided by government money or by donation with government tax support. Disrupting funding flows within an integrated regional mobility delivery approach is a way to deal with these barriers.

The aim should be to encourage independent mobility, drawing on a full range of offers, from special purpose transport to mainstream transport options, wherever possible. While buses are the back-bone of Australian regional public transport, they need to be a key part of a regionally integrated system that offers transport information, education and assistance and co-ordinates all forms of local transport to better meet regional mobility needs: route buses, spare seats on school buses, community transport, walking and cycling, share cars, taxis and uber type services, mobility scooters, wheelchairs, etc.

**Funding:** The original research, including the data collection, was supported by an Australian Research Council Grant.

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