OLDER PEOPLE AND THE INTERNET: 'NOT ALL OLD PEOPLE ARE THE SAME!' — AN ANALYSIS OF CENSUS DATA ON INTERNET ACCESS AT THE MICRO LEVEL IN AN URBAN OLDER POPULATION IN SOUTH AUSTRALIA

MS PAM COUTTS **(Refereed)**

University of Adelaide

Introduction

The change in policy focus from basic (i.e. dial up) Internet infrastructure to broadband network provision may lead one to assume that all is done as far as basic Internet provision is concerned especially for people in urban areas. However the assumption that with the achievement of basic Internet network provision every one will take advantage of the service is questioned in this paper.

The most recent Census data (ABS 2006) shows that in some demographics, such as older urban populations, still only a minority of households with people aged over 55 years of age are connecting to the Internet and in the absence of in-depth analysis of this demographic phenomena known as the Age Digital Divide assumptions are made that it must be 'because they are old'. However, the nature and distribution of the minority of older people who are Internet users, and the remaining majority who do not, may suggest that it is not so much what age people are but where they live that may determine whether they embrace the Internet.

This paper analyses small area data from the 2006 census to identify differences in Internet access across the older and low Internet adopting population of the Charles Sturt Local Government Area (LGA) in western Adelaide, the major population centre in South Australia. It identifies distinct clusters in the target population associated with variations in household Internet access and examines to what degree the socio-economic variables associated with these clusters explain the variations in Internet access including the extent of broadband take up. It explores the hypothesis that to research low Internet adoption in a population it may be more effective to examine local communities which because they have simular socio economic and cultural characteristics tend to locate together and share simular values and resources.

This research represents work in progress which is part of a three year research project entitled 'New Information and Communications Technologies (ICTs) and Older People: Practice; Problems; Potential' to increase understanding about the use and non use of the Internet and Mobile phones by older Australians to better inform policy makers about the barriers and enablers for addressing the Age Digital Divide.

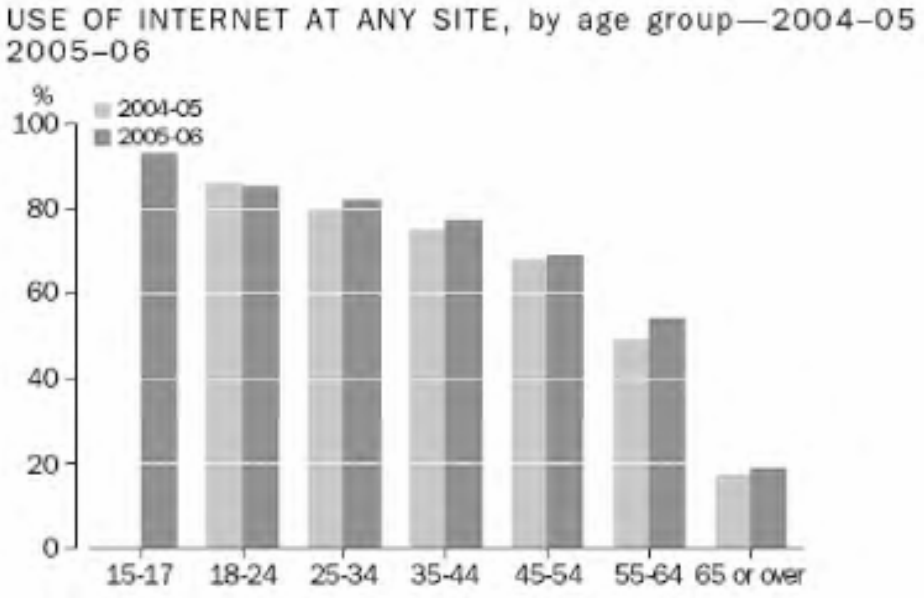
Substantiation

The analysis of demographic patterns and trends by the Australian Bureau of Census (ABS) is generally conducted on aggregated data at the macro scale usually based on Statistical Division (SD) or Statistical Local Area (SLA) (ABS 2006 Directory of Terms). Whilst data at this scale this reveals valuable information about gross demographic variations especially across regional or national populations it masks the diversity within those populations, such as the variations in Internet access levels within the older population in this study. This paper examines the data collected and collated by the Australian Bureau of Statistics in the 2006

census at the Census Collection District (CCD) geopolitical unit scale that represents approximately 200 households [ABS 2006]. Census collection districts are the smallest geographic data unit[1] published by the ABS but analysis is rarely conducted at this micro scale. This paper suggests that CCDs can be used to 'drill down' into the data to identify sub populations whose defining characteristics may add to understanding gross patterns observed in aggregated data as well as provide a basis for further investigation using other research methods.

ABS census data shows that in 2006 [ABS 2006b] only 18% of people in the Australian population over 65 years of age have Internet access compared to a rate of 70 % in the population below 55years of age . This disparity, known as the Age Digital Divide, is highlighted in the research literature [Foskey 2001]. As Australia experiences a rapidly advancing ageing population [Hugo 2006] the older population cohort will be an increasingly significant demographic, as it is in all developed economies. Making provision for the growing proportion of an older and increasingly dependent (as more people are living longer) population with a reducing proportion of the population that is of working age to support them is a major concern for government policy makers. This policy imperative is compounded by other demographic changes such as loss of close familial and casual supports due to changes in family roles and structure and increased mobility in the community generally.

Figure 2.1: Distribution of Internet Access by Age



Source: ABS, 2006 House hold Survey

The Costello report by the Australian Productivity Commission [Costello 2004] highlighted this policy imperative concluding that given an increasing relative shortage of public resources in the future, alternative and complimentary ways needed to be found to provide cost effective support for this burgeoning ageing population to age in place.

Information and Communications Technologies (ICTs) have the potential to contribute to cost effective strategies for supporting an ageing population ageing in place — the policy and

1 Data in a smaller unit – a mesh block will not be issued until after the 2011 census.

practice of supporting older people to remain in the family home as they age rather than in congregate care. However given the relatively low take up, to date, of the one of the most significant ICTs – the Internet, amongst the older Australian population an effective policy strategy will require a more detailed understanding of why many older Australians are not connecting with using these technologies. The challenge of this research is how to gain a better understanding of the diversity of contexts which influence use and non use among older people in sufficient depth and breadth to identify barriers to, and enablers for, achieving widespread adoption of the Internet in this demographic.

The association between socio economic cultural status and Internet access in the general Australian population is well documented in the data analysis literature [Lloyd et al 2001, ABS 2006c] which describe a positive correlation between Internet access and the variables of lower age, higher socio economic status (ie income, employment type and status) as well as birthplace and first language of country of residence.

The ABS 2006 Summary report [ABS 2006c] mostly used broadband Internet access levels to discuss the relationship with socio-economic status. This reflects the current policy interest in broadband, as the 2006 census asked households about 'types Internet connection' rather than 'individual Internet 'usage' requested in the 2001 census but both comparisons reveal socio-economic stratification. However little detailed research has been done to examine these differentiators in relationship to Internet access and use specifically within older Australian populations. There is a tendency to assume that older Australians have low Internet use because they are old. Yet the generic literature on barriers to Internet use, both overseas and in Australian studies, identify Internet adoption pre-conditions associated with both vertical[2] stratification and horizontal differentiation[3] in populations.

The aim of this research, of which this paper is an initial methodological exploration is to explore the interaction and relative importance of both groups of factors in understanding the patterns of adoption, actual and potential, of new information and communications technologies in the older Australian population. Clearly there are limitations in using only the broad vertical stratum evident in the census data analysis but they can be used, as in this study, to identify population subgroups, concentrations or communities characterised by different combinations of socio economic variables as well as anomalies. These, it will be argued, have a strong spatial element in that people with a simular combination of socio-economic or cultural characteristics have a tendency to co-locate or localise and can be considered a community of interest in that they tend to share simular values, aspirations and lifestyles as a result of simular cultural or socio economic background. This may provide a basis for exploring in this population the horizontal differentiators identified in the generic research literature but which to date in Australia have been only explored in small qualitative case studies.

Rationale for Choosing Charles Sturt

The Charles Sturt LGA in Adelaide, South Australia was selected as a study population with a large suburban population of older people with relatively low levels of Internet Access. It is characterised by an ageing, generally stable population with a diversity of socio economic and cultural profiles. As a study population representative of the older Australian demographic, it

2 Vertical differentiators are the socio-economic factors.

3 The horizontal differentiators are the values, perceptions, skills, attitudes, life experiences, lifestyles related to the individual context which are hidden (buried in gross demographic data)* but nonetheless are significant contributing barriers to the take up of digital technologies in a population.

is well placed as it has the third oldest population profile in Adelaide which is a metropolitan centre in South Australia which has the lowest Internet connection levels[4] of the mainland states compared to the national level. It is an older population with a diverse social economic and cultural composition as well as a high rating on the Socio Economic (SEIFA) Index of Disadvantage as shown in Table 2.1 so is well placed as a study population for examining the relationship between these key variables and Internet access levels.

Table 2.1 – Urban municipalities in SA with the highest percentage of older people (>18%) and Index of Disadvantage

Urban Municipality	% of population >65 (2006)	SEIFA Index of Disadvantage (2001)
Charles Sturt	18.5%	979.12
West Torrens	20.9%	1,002.96
Norwood	18.2%	1,054.40
Holdfast Bay	22.0%	1,064.40
Walkerville	20.9%	1,108.40
Burnside	18.5%	1,114.40
South Australia	15.1%	Oldest in Australia
Australia	13.5%	

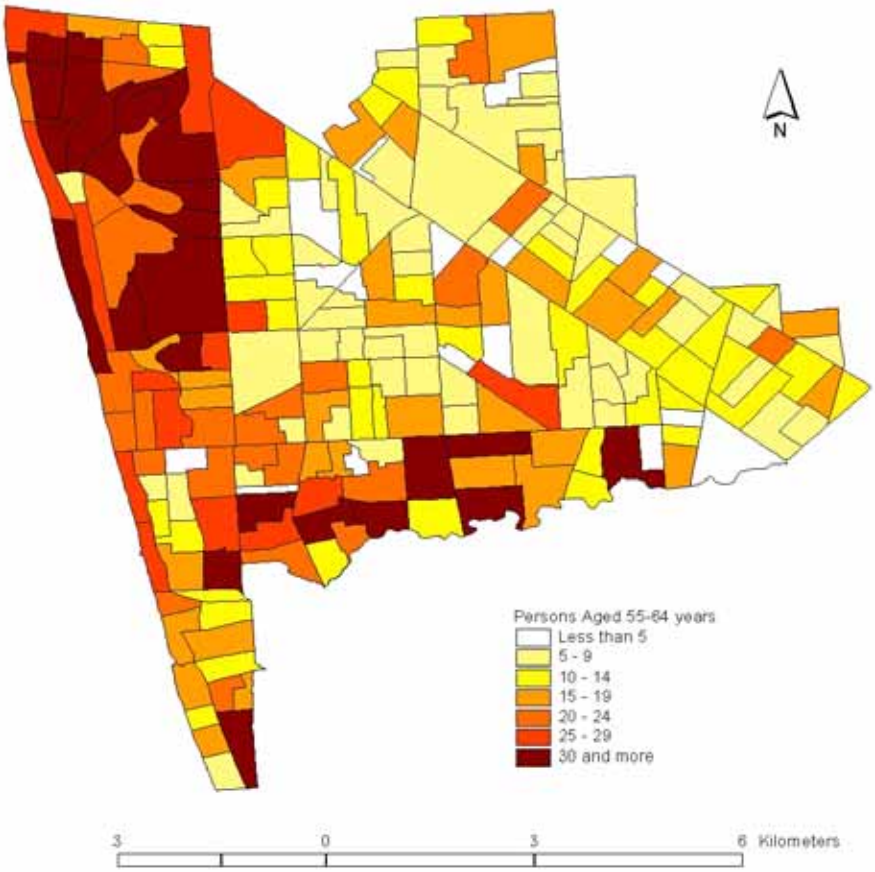
Source: Derived from figures from the 2001/2006 ABS Census

Methodology

This paper introduces the first of three research methods to be used in the research project, namely, the detailed analysis of census data at the micro scale of the Census Collection District which will be used for gaining an initial understanding of the diversity of the users and non users of the Internet in the study population as well as a basis for accessing this diversity for the survey and in-depth interview stage.

4 South Australia is 56.3% level compared to 61.3% level nationally.[ABS 2006].

Figure 4.1 Distribution of Household with people in the 55–64 Age Cohort in Charles Sturt



(Source: ABS: Community Profile 2006 Census [ABS 2006b])

Chloropleth maps [Rowland 2006] were compiled from the raw data in the ABS Community Profiles data base 2006 [ABS 2006] for each CCD to show the distribution patterns of the Charles Sturt LGA older population in three age cohorts 55–64 years of age shown in Figure 4.1 above, 64 – 74 years of age and 75 and over years of age. Internet access levels for each of the age cohorts of which Figure 4.2 is an example and the distributions five key socio-economic cultural variables, of which Figures 5.1 and 5.2 are examples, were mapped.

The three age cohorts — 55–64 years old, 65–74 years old and 75 years and over — were selected because they have distinctly different generational life experiences in relation to the chronology of the development and use of digital technologies which have implications for both the vertically stratified variables and horizontal differentiators. These age cohorts are also the subgroups of the older population identified in the studies that have been done on Internet use in older populations in Australia and overseas as having broadly differing patterns of Internet take-up and use. [OXIS 2007, Senior Watch 2002, Fox 2004, Heuston 2002] The studies classify these age cohorts as the young old, older old and old old. The small population aged 85 years and over, the very old, are not separated in this study due to limited data and the involvement of other contextual factors like age related disability, which are not considered in here.

Both low and high densities of Internet access were of interest in this research. More is known about older people who are users of the Internet as they are more accessible so the few mainly

overseas, quantitative studies [OXIS 2007, Senior Watch 2002, Fox 2004, Heuston 2002] have used online surveys as a main collection method. However, questions of selectivity with online surveys aside, much more information is required particularly within the Australian context as this group can provide valuable information on the enabling contexts for Internet adoption required for strategic policy making. The clusters of the older population who have low Internet access rates were particularly of interest as far less is known about them because they are far less accessible especially on a large scale and they will inform the other side of the Internet adoption policy equation — the barriers to Internet use.

The key socio economic and cultural variables selected were gross annual average income, (both household with persons over 55 years of age), education (represented by qualification levels, employment type, employment level), born overseas and proficiency in speaking English. Income, educational background and employment type are the most significant determinants of vertical stratification identified in the both the generic literature discussing barriers to communications technology use and quantitative and qualitative studies of users and non-users. The Australian Bureau of Statistics in its summary analysis 'Patterns of Internet Use in Australia' [ABS 2006a] identifies 'Overseas or country of residence as birth place' and Proficiency in Spoken English as significant in the Australian context.

The interrogation of the data was conducted initially by visualisation [Rowland 2006] in which the distribution patterns shown on the maps were visually appraised to locate concentrations of differing densities. Clusters [Rowland 2006] or geographic areas which were concentrations representative of distinctive age, Internet Access and socio-economic, cultural profiles in Charles Sturt LGA were identified as shown in Figure 4.2 The raw data was then interrogated to verify the selection of the five clusters as shown in Table 5.2. Clusters were selected on the basis of having high proportions of households with persons aged between 55 and 64, 65 and 74 and 75 and over, with either high or low levels of Internet access[5] and with high or low percentage measures of each of the key socio economic and cultural variables as summarised in Table 5.2. There were between 15 and 17 CCDs in each cluster and therefore representing each a population of about 3,000 households[6].

Finally much of the available ABS CCD raw census data for 2006 is based on number of households that necessitates some explanation. The data included congregate accommodation but as 95% of the older population (those 55 years and over) in Charles Sturt live in private dwellings [ABS 2006b] there is an extremely small representation of people in nursing homes and other congregate accommodation and therefore insufficient to need adjustment of the figures. As there was almost uniform distribution of the number of people per household across the five clusters a multiplier of 2.5 was used for an actual population figure. The 2006 census also recorded data on households with connection to the Internet by broadband shown in Table 5.1 as a % of those households with any Internet access.

Five clusters [Rowland 2006] or geographic areas that were concentrations representative of distinctive age, Internet Access and socio-economic, cultural profiles in Charles Sturt LGA older population are identified in Figure 4.2.

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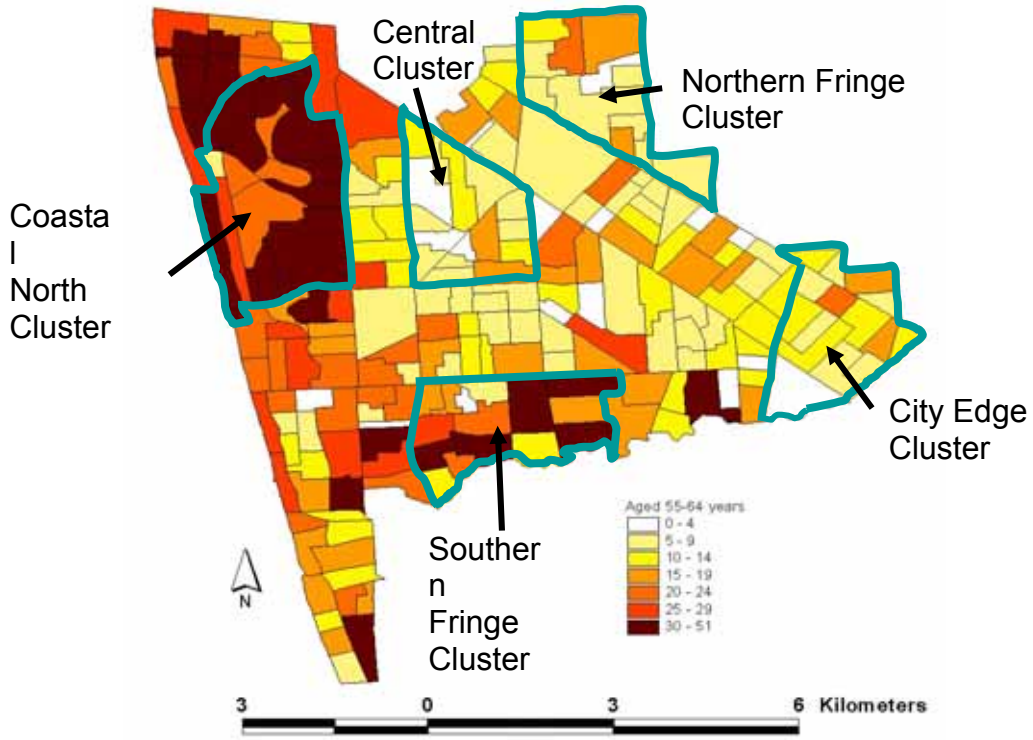
5 Some clarification of the terms used by the ABS in the census data and those used in the literature on Internet adoption are required. The meanings of terms 'connection', 'use' 'access' in this study as with the ABS analysis studies [ABS 2006] the term 'access' is used to represent having the potential to use the Internet by being connected.

6 Each CCD consists of approximately 200 households.

Figure 4.2 Household Internet Access in the 55– 64 Age Cohort Identifying the Five Demographic Clusters



(Source: ABS: Community Profile 2006 Census [ABS 2006b])

For the purpose of conducting an in-depth analysis, Internet access including the use of broadband in the 5 clusters is then examined including the interrelationships between Internet access and age, socio-economic and cultural variables.

Results and Observations

Examination of the distribution maps revealed a high level of spatial concentration in the Charles Sturt LGA older population in relation to different Internet access levels, associated with differing older age cohorts, socio-economic and cultural status. The concentrations or clusters identified representing both this diversity and spatial and conformity were the Coastal North, Southern Fringe, Central, Northern Fringe and City Edge clusters and are shown on Figure 4.2. In this section these observations are supported first by a description of the distribution pattern of the variables across the LGA and then by examination of the relationship of Internet access to the socio-economic and cultural variables and the fixed variable in each of the individual clusters. The overall pattern was of a very markedly decrease in Internet access and socio economic status away from the coast across the LGA eastwards and particularly northwards and a relative ageing of the population in the same direction.

The distribution of the older population across the LGA

The general pattern of distribution of the older population in Charles Sturt LGA is distinguished by a concentration of older people of all ages but particularly the young old along the coast and to some extent in the southern areas with a decreasing proportion of older people but of increasing age towards the centre, north and east. As shown in Figure 4.1 the 55–64 year old age cohort is highly concentrated in the coastal zone especially in the northern

part and to a lesser extent in southern western edge of the LGA whilst in the remainder of the municipality it is much lower and fairly evenly dispersed with the lowest incidence being in the east along the city edge. The 65–74 year old age cohort is much more evenly dispersed though there is higher density in the western half of the southern fringe. The 75 years and over age cohort is also more evenly dispersed but with a noticeable concentration in the central part of the LGA and with a density higher than that of the 55 to 64 age cohort in the coastal area.

Internet access levels distribution across the LGA older population

As shown in Figure 4.2 of the older population in Charles Sturt, those who have Internet access are highly concentrated in the coastal northern area and along the southern fringe and to a lesser extent in the southern part of the coastal zone whilst the remainder of the municipality has generally low Internet access levels. This pattern is associated with the predominance of the 55–64-age cohort that has high levels of Internet access in these areas. A simular spatial distribution pattern is observed, though at a much lower level of Internet access, in the 65–74 age group and with a slightly higher concentration in the central area with the lowest levels in this age group being in the northern suburbs whilst the older age group 75 and over have generally very low levels of Internet access dispersed across the municipality with slightly higher percentage accessing the Internet in the coastal north.

Observations about the five clusters

The **coastal cluster** has the highest percentage of older people in the municipality, the youngest older population and the lowest density of old old. The coastal north cluster is where overwhelmingly those older people in the LGA who have Internet access including those with broad band access are concentrated and in all of the older age cohorts with densities much higher than the LGA average and many times higher than that in most of the other clusters. It is the cluster with the only significant levels of Internet access in the old old age cohort so the target area for further investigating this age cohort national average. It has a large percentage of its young old still in the work force, and is predominantly an older population of relatively high incomes and employment status, tertiary qualified and with English as their first language

The Coastal North in the western part of the LGA with 17 CCDs occupies the suburbs of West Lakes Shore, West lakes and Tennyson. It has a coastal location which gives it an environmental quality of life advantage which gives it high land values and therefore attracts a population which has a high socio economic profile across all of the older age cohorts with a predominance of young old and English speaking born in Australia. It has both long established suburbs and areas of new housing especially around artificial waterways of West Lakes that offer high value lakeside frontage.

The **Southern Cluster** is dominated by the older old demographic those between 65 and 74 years of age as it has the highest % of older old, much higher than the LGA average for this cohort and the lowest % of young old and old old. The southern cluster has the second highest density of Internet access in all age cohorts for all types of Internet connection with a slightly higher percentage of older old Internet users so potentially a site for further investigation in this age co-hort. The Southern fringe cluster is part of the southern perimeter of the LGA is located along the Torrens River and occupies part of the suburbs of Fulham Gardens, all of Kidman Park and part of Flinders Park with a many young old residents but also a significant long established population of mainly English speaking Australian born or long established overseas born generally proficient in English who are in the older old and old old age cohorts and therefore a high percentage of retired persons. It has a generally medium high socio

economic profile but not as high and much more mixed than the coastal cluster. This pattern is replicated in the Internet access distribution but most noticeably the more numerically prevalent households with the older old age cohort (65–74 years of age) have lower than the coastal cluster but who like the coastal cluster are the only significant users of the Internet in this age cohort in the LGA.

The **Central Cluster** is the area in Charles Sturt LGA with the oldest population as it has the highest % of old, old which is higher than the Charles Sturt average. The central cluster has medium to low access levels with very low access levels for the young old age cohort but the second highest levels (although still low) for the 64 to 75 age cohort and is the lowest of all the cluster populations for rates of broadband access. The Central cluster is located in the north western part of the central area of the LGA and occupies the suburbs of Hendon, Albert park and Woodville West. This cluster has a mixed but generally medium low socio-economic profile with a significant long established ageing population both Australian and overseas born less proficient in English as mainly 1950s and 1960s migrants from southern and eastern Europe and a high proportion of lone person households. The cluster has some differentiated rates of Internet access but is characterised as generally medium low which is reflected in the ageing of the population socio-economic status and cultural origins of the population.

The **Northern Fringe** has a low percentage older people and which tends to be over 75 years of age — old old. The northern fringe has overwhelmingly an older population which does not access the Internet as it has very low levels of Internet access for all types of connections but a higher percentage of young old who have broad band access – an anomaly requiring further investigation The northern fringe cluster occupied by the suburbs of Pennington, Athol Park and part of Woodville North is to the north of the northernmost significant road artery in the western half of Adelaide Torrens road which tends to act as a socio economic boundary. It has a generally low to very low socio economic profile-the lowest in the LGA with a high proportion of lone person households, significant number of recent arrivals and a high percentage of the population from South East Asia with older age cohorts dominated by people from south and eastern Europe with low English proficiency reflected in both these cultural age groups.

The **City Edge** has a medium to low percentage of older people and who tend to be the young old and has slightly higher Internet access levels than the central and northern cluster. The city edge cluster has the advantage of proximity to the Adelaide CBD and is a area undergoing urban renewal so has a mixed socio-economic cultural composition resulting in a medium to low average across the cluster. The mixed composition which is reflected in its generally medium to low Internet access rates with considerable variations from suburb to suburb thus Hindmarsh an old established area has a very low measures in all the variables and Internet usage whilst Brompton and Renown Park, the latter with new upmarket housing developments have higher levels. It generally has a high percentage of lone households some of whom would be retirees.

These observations have included relevant background descriptions for each of these clusters which further support the hypothesis that it is geographical location even at the neighbourhood or local or micro level which indirectly determines which are the Internet adopters in older populations as certain locations in urban areas have the natural or recreational amenity or accessibility that make them highly desirable locations to live in. Therefore proximity to the coast availability of open space for new housing development or reclaimed land for waterside locations as in west lakes as in the coastal north cluster and to some extent proximity to the river in the Southern Cluster attract the populations who can afford them – the higher socio economic population stratum and who are clearly the early

adopters of digital technologies in the older Australian populations. Similarly the accessibility to the metropolitan centre of Adelaide of the inner suburban-city edge cluster undergoing the early stages of urban renewal is attracting to these areas those who have the necessary resources or who highly value accessibility to the CBD.

So characteristically the city edge cluster as it undergoes demographic change has a somewhat mixed profile in its older population in relation to age, socio economic and cultural status and associated patterns of Internet access.

For their differing Internet access rates and socio-economic cultural characteristics these clusters as microcosms of older Australian urban populations in a generally low Internet adoption regional demographic warrant further investigation using other research methodologies. It is the intention of the next stage in the research which will be a survey of a stratified non probability sample of the population in each of these clusters to explore these relationships to gain a greater understanding of the patterns and contexts of use.

Tables 5.1 shows the analysis of the levels of household Internet access (including the % of broadband) for the five clusters and these levels are compared with the average for Charles Sturt, South Australia and Australia.

Table 5.1 Age and Household Internet Access Levels via broadband and other forms of connection in the 5 Clusters

	Charles Sturt LGA	Northern Coastal	Southern Fringe	Central	Northern Fringe	City Edge
No of households	40,870	3,274	3,117	3,149	2,688	2,756
% Aged >55 in cluster	44.3%	58.8%	53.1%	42.5%	40.9%	32%
55–64	36%	43%	37%	28%	35%	41%
65–74	28%	25%	34%	26%	25%	29%
75+	36%	32%	29%	46%	40%	30%
% Internet Access (bb: broadband)	51.0% (28% bb)	62.3% (53% bb)	53.1% (30% bb)	42.7% (4% bb)	36.8% (21% bb)	51.2% (29% bb)
55–64	54.0% (28% bb)	72.2% (54% bb)	56.5% (30% bb)	40.0% **(4% bb)**	35.5% (21% bb)	44.0% (25% bb)
65–74	30.4% (11% bb)	48.6% (38% bb)	33.1% (12% bb)	23.1% **(6%** bb)	14.2% **(6%** bb)	18.0% (10% bb)
75+	12.3% (4% bb)	20.0% (39% bb)	13.0% (5% bb)	8.2% **(7%** bb)	9.2% **(3%** bb)	7.6% **(4%** bb)

(based on ABS 2006 Household Connection to the Internet)

From Table 5.1 a number of observations can be made:

- The Coastal North cluster has a much greater % of Internet Access than Charles Sturt LGA as a whole particularly for the young old (ie 72% compared to 65% nationally) with 54% using broadband
- Both the Central and Northern Fringe clusters have the lowest Internet Access levels of the five clusters lower than the Charles Sturt LGA as a whole
- While the Northern Fringe has a greater % of the very old (ie >75) than the Central cluster (and lower Internet Access) it has a marked greater % of broadband use in the young old cohort
- The Southern Fringe and City Edge clusters have medium Internet access

What is clear from looking at the broadband take up in particular is that the Coastal North cluster has high Internet usage across all three age cohorts unlike the other clusters.

Table 5.2 shows the breakdown of the socio-economic data for the five clusters.

Table 5.2 – Summary of Socio-Economic Variables for the 5 Clusters

Charles Sturt: CD Clusters by Selected Demographic Variables, 2006
Source: ABS, 2006 Census

Cluster	Age	Coastal North	Southern Fringe	Central	Northern Fringe	City Edge
Income						
%HH Weekly Income $2500+		**15.3**	7.6	2.5	2.1	5.8
%HH Weekly Income <$500		18.3	25.1	32.2	**40.2**	32.7
% Individual Income <$250	55–64	35.0	49.3	60.3	**68.9**	58.5
	65–74	58.0	76.6	79.9	87.6	85.5
	75+	63.3	83.1	86.2	87.1	89.7
% Individual Income >$2,000	55–64	8.4	1.5	1.0	0.0	2.1
	65–74	2.7	0.7	0.7	0.0	0.9
	75+	0.7	0.0	0.0	0.6	0.0
Education						
% Degree or higher	55–64	**16.4**	9.2	5.8	5.3	10.9
	65–74	7.4	5.0	1.0	2.2	6.1
	75+	4.3	2.6	1.8	0.0	0.5
% No Qualification	55–64	48.2	57.5	60.6	62.4	53.7
	65–74	52.9	64.9	68.2	75.7	59.6
	75+	56.6	67.2	62.8	61.2	63.8
English Speaking						
% OS born		20.6	26.5	25.0	34.6	30.2
% Overseas born who speak English Not Well or Not At All		**7.1**	16.9	17.0	**30.3**	22.4

Charles Sturt: CD Clusters by Selected Demographic Variables, 2006 **Source: ABS, 2006 Census**						
Cluster	**Age**	**Coastal North**	**Southern Fringe**	**Central**	**Northern Fringe**	**City Edge**
Employment type						
% Not in Wokforce	55–64	40.3	48.6	52.1	59.3	53.1
	65–74	84.5	90.1	94.4	93.3	87.1
	75+	96.1	97.6	99.3	100.0	99.4
% Managers/Professionals	55–64	**45.4**	29.2	24.9	20.1	31.4
	65–74	38.0	27.6	36.4	0.0	20.0
	75+	40.9	0.0	0.0	100.0	57.1
% Labourers	55–64	6.0	13.8	15.8	**20.9**	20.8
	65–74	5.8	6.9	18.2	0.0	20.0
	75+	31.8	0.0	0.0	0.0	42.9

(based on ABS 2006 Data on Household Connection to the Internet)

From Table 5.2 a number of observations can be made in relation to the Internet Access figures given in Table 5.1 for the 5 clusters:

- The Coastal North cluster which has the highest Internet Access levels clearly has the highest income levels, education attainment and Managers/Professionals as shown in numerous studies linking Internet Access to these socio-economic variables. Figure 5.2 for the Coastal North cluster starkly shows the lowest % of non English speaking residents
- The Northern Fringe and the Central clusters have all the characteristics of low income, low educational attainment, high % of labourers associated with the lowest Internet Access levels. The Northern Fringe in particular has the highest % of overseas born residents who do not speak English well
- The Southern Fringe and City Edge clusters are more mixed in their socio-economic variables.

Inspection of the maps provided by the ABS on the different countries of migration that concentrate in the various clusters does suggest that a possible explanation of the high broadband penetration in the Northern Fringe is related to the value placed on contact over the Internet with family overseas.

The maps shown in Figures 5.1 and 5.2, which are based on CCD data show the distribution of high income in the older population and the population born overseas (in non English speaking countries) respectively. These examples are included in this paper to demonstrate the high correlation observable by even a cursory comparison of the mapped data, between age cohort, Internet access levels and socio economic variables as space in this paper does not allow inclusion of a total of fifteen distribution maps examined.

The distribution of high income in the young old age cohort in Figure 5.1 shows the concentration in the Coastal fringe where Internet use is the greatest and higher than the national average.

Figure 5.1 Charles Sturt LGA: Distribution of % of households with incomes greater than $1,000 per week for the 55–64 year olds

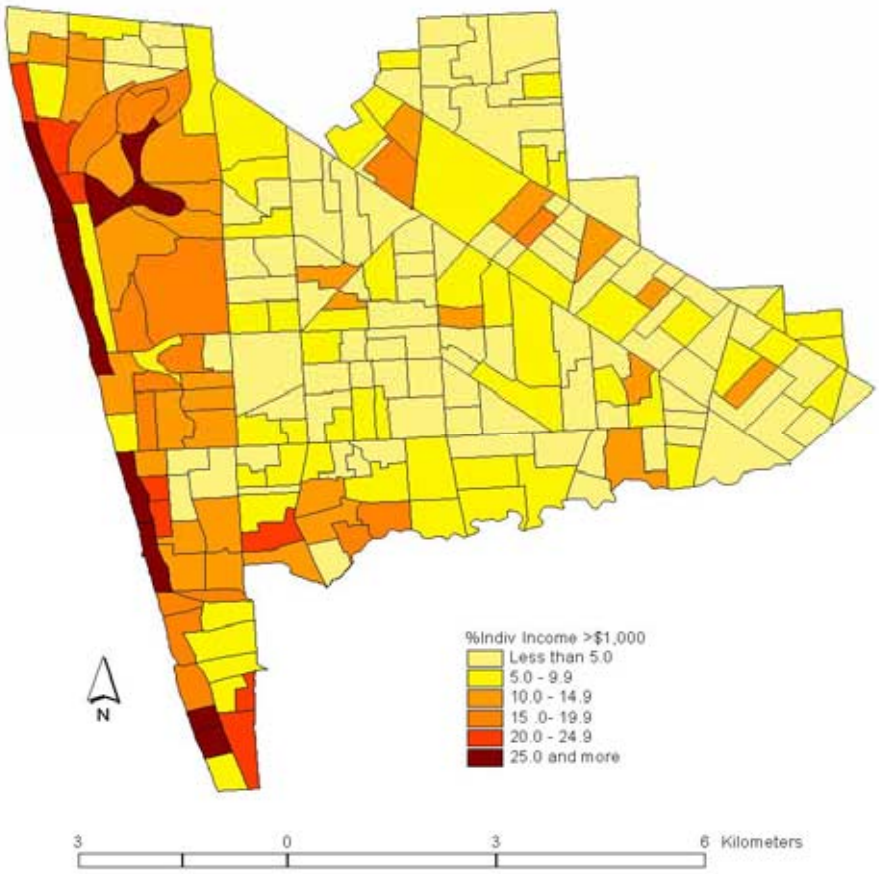
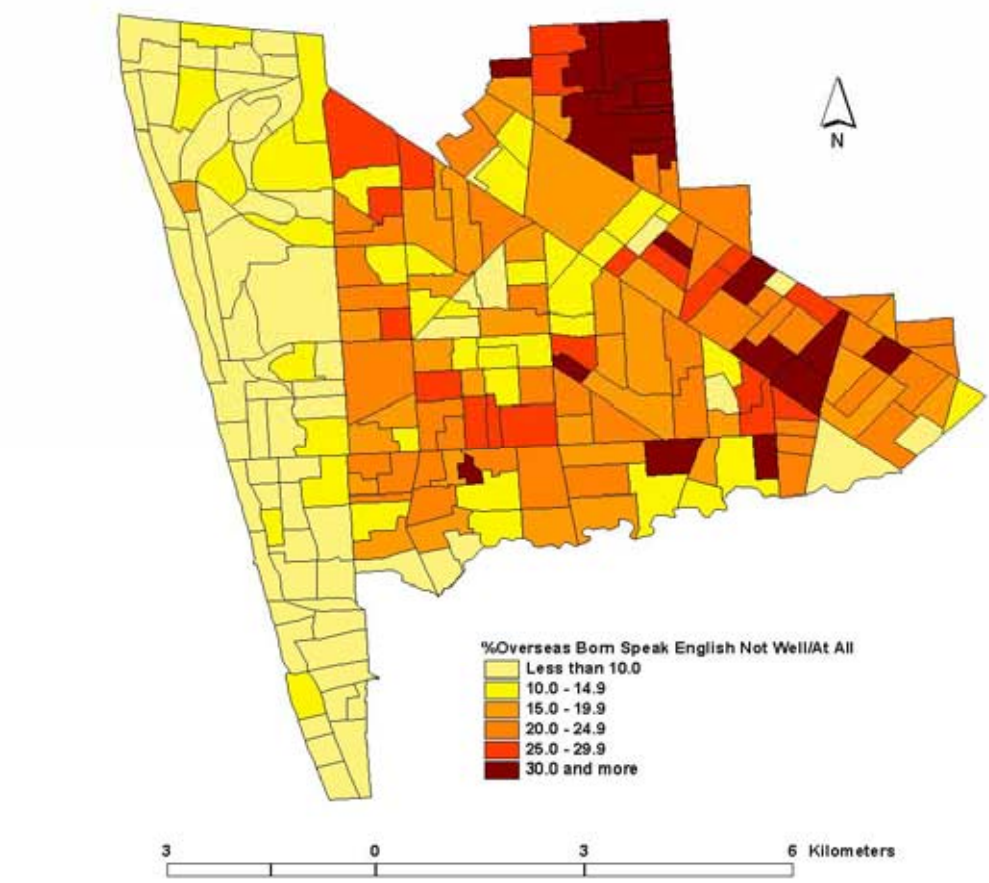


Figure 5.2 shows the distribution of the 'Total Persons Born Overseas Who Speak English Not Well or Not at All' which is indicative of Internet access levels in some communities. The areas where people do not speak English well or at all such the Northern Fringe have low Internet Access rates and conversely those who speak English well as in the Coastal region have high Internet.

Figure 5.2 Charles Sturt LGA: Distribution of % of total persons overseas born who Speak English Not Well or Not at All



Conclusions

The conclusion from this initial phase of the research is that whilst Internet access levels in this older population are low as consistently reported there is very considerable variation within this older population with some sectors having higher levels than the national average even though the level for this broad region is relatively low.

More specifically from this analysis of the ABS data for Charles Sturt at CCD level initial conclusions are:

- These variations in access are more highly correlated with socio economic and cultural status than with age
- These variations are also highly correlated with geographical location and therefore there is a spatial dimension to low adoption of Internet access in older populations and is constitutes an intra urban divide as distinct from the rural urban divide
- Within an urban area access to the Internet including broad band access is ubiquitous there are huge disparities in take up of the Internet per se which suggests current policy focus on broadband infrastructure could exacerbate the age digital divide
- Disparities in broadband access, apart from anomalies such as in a recently arrived population, suggest simular socio-economic cultural alignment may prolong resolution of the age digital divide

- Examination of demographic data at the micro level as in this study population, reveals a pattern of differentiation which can form a basis for surveying difficult to access populations like a large population cohort that can not be reached by online.
- Higher access in the 55 to 65 years of age cohort is supported by the data analysis literature and small qualitative studies

The hypothesis is therefore supported by the analysis of the ABS Census data in this study population that Internet access is more determined by socio-economic cultural factors than older age. Furthermore, Internet access has a spatial dimension, as populations with socio-economic cultural commonalities tend to co-locate. This small area data analysis has identified the diversity in a low Internet adopting population which provides a basis for exploring the complexity of both context and practice within a population of older Australians.

Acknowledgements

The author would like to acknowledge the financial support and input from the City of Charles Sturt and funding support from the Australian Government through the ARC Linkages scheme, the guidance of Professor Graeme Hugo in the Discipline of Geographical and Environmental Studies of the University of Adelaide. The assistance in computer analysis and map compilation from Ms Margaret Young and the ICT industry advice from Professor Reg Coutts are gratefully acknowledged.

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