Relating Spatial integration and Other Aspects of Immigrant integration using Australian data

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Abstract:

The integration of immigrants is necessary for the economic vitality, social solidarity, and cohesion amongst cultures in major receiving countries. Immigrant integration can be measured from multiple dimensions, including residential proximity to the majority population, upward socioeconomic mobility, proficiency in the local language, and becoming a citizen in the destination country. What the relationships are amongst these dimensions and how such relationships change under different migration and destination contexts have not reached a consensus amongst researchers. Different pieces of evidence are observed between earlier Anglo immigrants and new waves of non-Anglo immigrants in major destination countries, revolving around two competing theories: the conventional spatial assimilation theory and the segmented assimilation theory. Using the 2016 Australian Census data, the relationships between neighbourhood composition and other aspects of integration are examined for immigrants born in China, India, UK, and New Zealand to test the theories. Results from this paper generally support the conventional spatial assimilation theory with evidence from UK-born and New Zealand-born immigrants, and the segmented assimilation theory with evidence from China-born and India-born immigrants. There are also inter-birthplace variations not explained by immigrants' attributes or place of residence, which supports the segmented assimilation theory. However, evidence contradicting the two theories are identified such that upward socioeconomic mobility of immigrants may not necessarily link to increasing residential proximity to the Australia-born persons but upward

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spatial mobility into better-off neighbourhoods. The results on one hand have to do with Australia's skill selection of new immigrants. On the other hand, revisiting the definition and implications of assimilation and integration is much needed to understand different context of immigrant integration. The findings pose questions on what integration means and whether residential proximity to non-immigrants is enough in measuring immigrant spatial integration in a skilled migration country.

6.1 Introduction

Immigrant integration can be measured from multiple dimensions, including residential proximity to the majority population, upward socioeconomic mobility, acculturation, proficiency in the local language, and becoming a citizen in the destination country (Penninx, 2005; NASEM, 2015). What the relationships are amongst these dimensions and how such relationships change under different migration and destination scenarios, however, have not reached consensus among researchers: different pieces of evidence are found from earlier Anglo immigrants and new waves of non-Anglo immigrants in major destination countries (Massey, 1985; Massey & Denton, 1985; Portes & Zhou, 1993; Ager & Strang, 2008; NASEM, 2015; Guan, 2019).

The disagreements on relationships between different dimensions of immigrant integration revolve around two competing theories: the conventional spatial assimilation theory, and the segmented assimilation theory. The conventional theory was developed during a time when high migration from Europe to British colonies was observed (Park, 1950; Gordon, 1964). It posits immigrants' residential proximity to the host population as an outcome of socioeconomic advancement and acculturation (Massey, 1985; Massey & Denton, 1985; NASEM, 2015). Segmented assimilation theory was developed more recently when immigrants and their descendants were coming from diverse and non-Anglo backgrounds (Portes & Zhou, 1993; Jensen & Chitose, 1996). It posits decoupled residential, social, economic, and cultural distances between minority and majority groups depending on the context in the receiving country and group characteristics of immigrants (Portes & Zhou, 1993; Jensen & Chitose, 1996; South et al., 2005; Forrest et al., 2006). The biggest disagreement between the two strands of theories is whether immigrants and their descendants' upward socioeconomic mobility translate into spatial proximities with the majority population, reflecting the dynamics between immigrant groups and the host group (Portes & Zhou, 1993;

South et al., 2005; Edgar, 2014). The relationships between immigrant spatial and other dimensions of integration have been substantiated, challenged, and further developed or theorized by researchers in major destination countries (South et al., 2005; Forrest et al., 2006; Edgar, 2014; Wang et al., 2018c).

This paper tests the two competing theories by examining the relationships between spatial and other aspects of immigrant integration using the most recent census data from Australia. Since mid-1990s, immigration to Australia has changed substantially from European dominance and family reunion migration to Asian dominance and skilled migration (Raymer et al., 2018). The research focuses on analysing how neighbourhood compositions relate to immigrants' socioeconomic status, naturalization status, and English language proficiency. Comparisons are made between new immigrants born in China and India and immigrants born in more established origins the UK and New Zealand. Immigrant integration observed in major capital cities of Australia shows different intergenerational and inter-birthplace patterns compared to those revealed in the US literature (Forrest et al., 2006; Edgar, 2014; Wang et al., 2018c), including what's Forrest et al. (2006) framed as "*assimilation in slow motion*". How these happen at the national level, however, remains unclear. Different from previous Australian studies where the focus was on group-level attributes or certain capital cities (Coghlan, 2008; Edgar, 2014; Wang et al., 2018c; Guan, 2019, 2020), this paper uses individual-level nationally representative data to explore the relationship between immigrant spatial integration and other integration indicators of them.

Three hypotheses are tested. First, drawing on conventional spatial assimilation theories, patterns of immigrants' spatial distribution and residential choices are expected to be in line with their other characteristics for immigrants of traditional origins and from English-speaking countries. Thus, positive relationships are hypothesized between an immigrant's residential proximity to Australia-born persons and longer length of residence in Australia, having

Australian citizenship, being employed, and having high income if he/she was born in UK or New Zealand. Higher levels of socioeconomic and political integration are also expected to associate with immigrants living in better-off neighbourhoods. Second, considering the segmented assimilation theories, immigrants of non-traditional, non-major English-speaking origins (China and India) are expected to see less successful translation from high human capital and English proficiency to high residential proximity to Australia-born neighbours. It is also expected that they higher levels of socioeconomic, political, and linguistic integration are not necessarily linked to residency in better-off neigbourhoods. Third, as suggested in the segmented assimilation theory, the relationships between high human capital and residential patterns also depend on the birthplace of immigrants. Therefore, inter-birthplace variations in the relationships between residential proximity to Australia-born neighbours or better-off neighbourhoods and other indicators of integraton are expected to be observed between the four immigrant populations examined.

This research adds new evidence to the current integration literature from a major destination country with very different compositions of immigrants compared to the United States where conventional spatial assimilation and segmented assimilation literature were initially theorized and developed. It also provides new insights into the incorporation of overseas-born population in Australia, where both the origin and the type of immigrant have substantially changed over the last few decades.

6.2 Background

6.2.1 Multiple dimensions of immigrant integration

Immigrant integration in the destination country can be measured and understood from multiple dimensions to focus on different aspects of their settlement process and outcomes. These generally include political dimensions, spatial dimensions, socioeconomic dimension, and sociocultural dimensions (Phalet & Swyngedouw, 2003; Penninx, 2005; NASEM, 2015; Clyne & Jupp, 2011). Other

dimensions of integration that are important but not discussed in this paper are: family integration, including patterns of intermarriage, childbearing, and family arrangements; civil integration, which considers community engagement; health of immigrants; the legal status of migrants, and host population's attitudes towards immigrants (NASEM, 2015). The majority of the immigrant integration literature centres on socioeconomic integration or considers it to be closely relevant to the other dimensions of integration.

The socioeconomic dimensions of integration encompass the inequality in education, employment, income, and occupation between immigrants and non-immigrants (South et al., 2005; Forrest et al., 2006; NASEM, 2015). Economic factors are still a prominent driver for international migration (Castles, de Hass & Miller, 2014; Goldin, Cameron & Balarajan, 2011). The economic potential of immigrants is also what the destination countries expect to utilize in addressing labour shortage and population declines (Smolicz, 1995 in Forrest et al., 2006). Reduction in socioeconomic distance between immigrants and non-immigrants is a key outcome of immigrant's efforts to overcome disadvantages in the destination society and being incorporated (Forrest et al., 2006; NASEM, 2015). The reduction can also be compared between immigrants and their descendants to assess socioeconomic integration across generations (Portes & Zhou, 1993; Edgar, 2014). The improvement in different aspects of socioeconomic integration, however, may not necessarily align with each other. For instance, Phalet and Swyngedouw (2003) found significant "*ethnic penalties*" for ethnic Italians, Turks and Moroccans in Belgium, particularly for the first generation, where higher education offers only limited protection against unemployment.

The political agent of integration mainly considers the naturalization of immigrants as the measure of success. Full citizenship of the host country is considered one of the "markers of integration" (NASEM, 2015). In some European countries, naturalization is seen "*a mechanism to encourage integration*" (p.33) rather than a sign of assimilation (Coleman, 2005).

Depending on which country people migrate to, there are obstacles one must overcome to acquire citizenship. This may include whether origin and receiving countries accept dual citizenship, length of residence requirements, evidence for good behaviour, interviews or tests, and ethnicity or nationality of parents (NASEM, 2015, Penninx, 2005; Coleman, 2005). Australia introduced citizenship tests in 2009 (Jupp, 2018). The percentage of foreign-born residents who have naturalized varies by country. For statistics between 1990 and 2016[2], the percentage was 39-49 per cent for the US, 83-86 per cent for Canada, 8.3 per cent for Denmark, 36.2 per cent for Norway and Sweden, 52 per cent for the Netherlands and UK, and 31-39 per cent for Australia (Fix et al., 2003; Coleman, 2005; NASEM, 2015; ABS, 2017c; Hou & Picot, 2020).

Obtaining citizenship in the destination country not only represents rational choices immigrants made to become part of the legal system and efforts they made overcoming various barriers, but also positively associates with better socioeconomic and health outcomes (NASEM, 2015). This includes higher education levels, better employment outcomes, safer and better-off neighbourhoods, and better health in later life (p.380).

A key aspect of sociocultural dimensions of integration is proficiency in the destination country's language (NASEM, 2015). The ability to use destination language may not be the essential element for immigrant's economic success in the receiving society, as many enclave businesses can thrive without frequent interactions with the majority community. The usage of destination language is, however, very important for one's social and cultural integration. It facilitates communication and interaction between different groups, as well as immigrant's employment and participation in mainstream society. Studies show that in major English-speaking destination countries, immigrants with good English proficiencies felt more accepted

[2] US data are for 1990-2013. Canada data are for 1996-2016. European data are for the 1990s. Australian data are for 2006-2016.

by the receiving communities (Andrade, 2009). Immigrants of non-English-speaking backgrounds are also rewarded for better English language proficiencies in securing full-time employment and better jobs (Blake et al., 2018; Roshid & Chowdhury, 2013; Bloom & Grenier, 1993).

Spatial dimensions of integration consider where immigrants live or move to, and how these compare to the host population (Massey, 1985; NASEM, 2015). The residential distance between immigrants and non-immigrants can be assessed and measured from five dimensions (Massey & Denton, 1988). These include: (i) the inequality of residential patterns between immigrants and non-immigrants; (ii) the exposure and isolation of immigrant to the majority population; (iii) the concentration of immigrants across space; (iv) the centralization of immigrants in city centres; and (v) the clustering of immigrants and enclaves across the city. Of the five, the inequality dimension received the most research interest (Coughlan, 2008b; Culter et al., 2008a, 2008b; Iceland & Scopolliti, 2008; Luk, 2009; Edgar, 2014; Lichter et al., 2015; Wang et al., 2018c; Guan, 2019). Commonly used measurements of spatial inequality between two populations are the Index of Dissimilarity, Gini Index, and Entropy Index. Forming these indexes is usually the population composition in each subnational geographic unit, for instance, percentage immigrant in a suburb or census tract. In these indexes, a more ethnically diverse neighbourhood generally signifies higher levels of spatial integration.

Where immigrants live is closely relevant to how well they integrate in the destination country socially, culturally, and economically. Two strands of theories try to describe and understand the relationships between spatial and other aspects of immigrant integration: the conventional spatial assimilation theory and the segmented assimilation theory. The biggest disagreement between the two strands of theories is whether immigrants' and their descendants' upward socioeconomic mobility translates into spatial proximities to non-immigrants (Portes & Zhou, 1993; South, Crowder & Chavez, 2005; Edgar, 2014).

Conventional spatial assimilation theory originates from classic sociological models of assimilation where immigrants adopt the lifestyle and cultural traits of the host society over time and across generations (Park, 1950; Gordon, 1964; South, Crowder & Chavez, 2005). The theory was developed during a time when high migration from Europe to British colonies was observed (Park 1950; Gordon 1964). It suggests that differences in residential patterns reflect social, economic, and cultural distances between immigrants and non-immigrants (Massey, 1985). Immigrants and non-immigrants distribute and move differently because reductions in their social, economic and cultural distances take time, even generations (Kuo & Roysircar, 2004; Frey & Liaw, 1999; South, Crowder & Chavez, 2005). The different aspects of immigrant's incorporation into the host society are functionally related, whereby spatial integration is the outcome of socioeconomic gains and acculturation, signalling a reduction in distances between immigrants and non-immigrants and increased levels of acceptance of immigrants (Newman, 1985; Massey, 1985; Massey & Denton, 1985; Phalet & Swyngedouw, 2003; Castles, Haas & Miller, 2014; NASEM, 2015). For instance, in the presence of greater human and financial capital and English abilities, the experience of Latino migrants in the United States confirm the conventional spatial assimilation theory that migrants move into whiter neighbourhoods (South et al., 2005). In the other direction, residential proximity between immigrants and non-immigrants would also enhance other forms of integration, for instance through the shared neighbourhoods or community resources, cross-ethnic friendships, and intermarriage (South, Crowder & Chavez, 2005).

Segmented assimilation theory was developed more recently when immigrants and their descendants in the US were coming from diverse and non-Anglo backgrounds (Portes & Zhou, 1993; Jensen & Chitose 1996). It differs from the conventional spatial assimilation theory by accentuating the multiple unequal segments of society and highlighting different experiences of immigrants' children. Immigrants integrated into different segments of the

society which have differentiated economic wellbeing. These later translate into different integration outcomes. Depending on the opportunities available to each segment, some immigrant groups may perform worse over time and across generations (Portes & Zhou, 1993; Zhou, 1997; Wang & Fan, 2012; Edgar, 2012). The theory was originally proposed for second generation immigrants, but the concept is equally meaningful when extended to first-generation immigrants of diverse socioeconomic, cultural and linguistic backgrounds (see. e.g. Wang et al., 2018c; Hirschman, 2011). Hirschman (2001) used the duration of residence in the host country for the first generation immigrants as a proxy of their "generation".

As a result of segmented assimilation, immigrants may experience decoupled levels of socioeconomic, cultural, and residential incorporation, depending on the context in the host country and group characteristics of immigrants (Portes & Zhou, 1993; Jensen & Chitose, 1996; Zhou, 1997; South, Crowder & Chavez, 2005; Forrest, Poulsen & Johnston, 2006). One possible outcome is that immigrants from more disadvantaged backgrounds may experience spatial segregation from the better-off groups but residential proximity to non-immigrant under-class persons (Portes & Zhou, 1993). Using the 1990 US Census, Frey and Liaw (1999) found Latinos and Asians did not become more dispersed with greater educational attainment and longer years of living in the States. Such education selectivity patterns are not consistent with the conventional spatial assimilation story but rather support a segmented assimilation one, except where relatively small numbers of second-generation Latinos and Asians who are college graduates have similar primary destinations with college graduate whites.

In examining the second-generation immigrants using the 1990 US Census, Jensen and Chitose (1996: p83) summarized three possible integration patterns "in which different groups experience either traditional assimilation and upward mobility, downward mobility by unsuccessfully competing in the mainstream economy, or upward mobility by living and working in ethnically homogeneous immigrant communities" (South et al., 2005). Immigrants

from non-traditional backgrounds experience higher spatial segregation. Of the 27 European countries examined in Lichter et al. (2020), immigrants from outside of Europe experienced more spatial segregation from natives than immigrants from other countries within Europe. In the US, Asian immigrants, compared to Hispanics, are found to have experienced less resistance relocating to middle-class or affluent ethnoburbs (Lichter et al., 2020). In Australia, Wang et al. (2018c) and Guan (2019, 2020) identified variations in spatial integration and segregation between different overseas-born groups, controlling for length of residence, socioeconomic levels, and profiles of metropolitan areas of residence. These variations in spatial assimilation processes between different minority groups support Zhou's (1997) argument that the interaction between group-level variables (race, place of residence) and individual-level characteristics (human capital, language abilities) determines the path of integration. In Australia, however, there is a lack of evidence from individual-level analysis.

Possible determinants for immigrants' integration pathways include both individual-level attributes (e.g. human and financial capital) and group characteristics (e.g. race and place of residence). Education and language abilities, access to ethnic resources and transnational opportunities, place of residence, age, length of residence in the destination country, place of birth and race, and family socioeconomic background are all suggested to influence immigrant integration (Massey & Denton, 1985; Zhou, 1997; Phalet & Swyngedouw, 2003; Forrest et al., 2006, 2009; Edgar, 2014). Other than forming sub-societies based on race or ethnicity, studies in the US also show that socioeconomic status and region of residence may also interplay in determining the subculture (Gordon, 1968). Thus, the differences between immigrants and various socioeconomic groups should also be considered.

6.2.2 The immigrant population in Australia

Australia is a country built on immigration. It became the colony of Britain in 1788 and became an independent nation in 1901 (Jupp, 2001; Richards, 2008). At the time of Federation,

Australia implemented the White Australia policy, intending to exclude and expel Asian migrants, including Chinese. Through the 20th century, immigrants from Britain have formed the largest overseas-born group, followed by persons from Northwest continental Europe and Southern Europe, especially Italians and Greeks after the Second World War (Jupp, 2001; ABS, 2017d). The race-based White Australia policy was abolished in mid-1970s following decades of debates around populating the country for economic and military purposes and responding to the pressure accommodating Vietnam War refugees (Richards, 2008). Since then, migration from China, India, Vietnam, and the Philippines started to increase (Jupp, 2001; ABS, 2017d). More recently, Australia has shifted from a country facilitating family reunion and humanitarian migrants to a destination recruiting new arrivals based on education, professional occupation, and skills (Hugo, 2004). For all permanent visa recipients who arrived in Australia between 2010 and November 2019, 56 per cent received a skilled visa and 41 per cent a family visa (ABS, 2020d). A large proportion of new immigrants now come from Asia, with China and India being the top two origins (Raymer et al., 2018; ABS, 2020a). New migrants are usually equipped with a higher education background and good English skills.

Australia today has over one-quarter of its population born overseas and over half with at least one parent born overseas (ABS, 2017d). It represents one of the highest shares of foreign-born population in the world (UN, 2019a, 2019b). In mid-2019, the top four largest overseas-born populations in Australia are persons born in England, China, India, and New Zealand (ABS, 2020a). They each account for 3.9, 2.7, 2.6, and 2.2 per cent of Australia's resident population, respectively.

The relationship between Australia and New Zealand has been close and the two countries have signed the Trans-Tasman Travel Agreement to facilitate their citizens to freely travel, study, work, and reside in the other country without restrictions (Parliament of Australia, 2016). As a result, the level of international migration between Australia and New Zealand has

been very high, with the direction of net gain and loss depending on the economic cycles of the two parties. However, New Zealand citizens who arrived Australia after 2001 do not have the full benefits of migrants, including access to the Australian social security system, without applying for and meeting skill or family migration visa requirements (Department of Social Services, 2019b). The New Zealand-born population was the second largest overseas-born group between late-1980s and 2017, when immigrants from China became the 2nd largest group (ABS, 1995, 2020a).

Australia has a long-established migration selection system recruiting offshore skilled migration and enabling temporary migrants to become permanent residents and to naturalize (Khoo et al., 2008; Chiou, 2017). The country has relatively generous requirements for naturalization, which include a minimum length of residence requirement and attending a citizenship knowledge and value test. There is also a basic English language skills requirement at the citizenship test (Department of Home Affairs, 2020e). Children of Australian citizens are eligible for Australian citizenship by descent even when born overseas (Department of Home Affairs, 2020f).

The spatial distribution of the Australian population is heavily concentrated towards metropolitan areas. The distribution of overseas-born population in Australia is more unbalanced between urban and rural areas compared to the Australia-born population. This usually links to economic and employment opportunities in cities. In the 2016 Census, 57 per cent of the Australia-born population and 80 per cent of the overseas-born population lived in the five major capital cities (ABS, 2017c). The growth of immigrant population and cultural diversity is not even across Australia. Border control statistics show that among the five major capital cities: Sydney and Melbourne are equally attractive to international arrivals from Asia and the United Kingdom; Brisbane attracts more New Zealand-born persons and non-China-born North-East Asians; Perth attracts immigrants of European origins; and Adelaide receives

more international arrivals from China and India (Raymer, Bai & Liu, 2020). There are increasingly more Asian immigrants arriving outside Sydney and Melbourne, but the shares remain relatively low. There are increasingly more Asian immigrants arriving outside Sydney and Melbourne, but the shares remain relatively low.

Research has shown positive relationships between longer residence in Australia and closer residential proximity with the Australia-born persons for European immigrants (Guan, 2019). For immigrants from China and India, however, there is a clear difference in population spatial distribution between skilled migration cohorts and non-skilled migration cohorts (Guan, 2019, 2020). Similar positive relationships are observed amongst post-2001 student and skilled migrants from China and India.

To address the overrepresentation of immigrants in major capital cities and to boost regional population and economic growth, federal and state governments have introduced state nomination and regional sponsored migration schemes to encourage immigrants migrating to regional Australia (Hugo, 2011). Regional areas in Australia are usually locations outside major cities with restricted accessibility of goods, services and opportunities for social interactions (Hugo, 2011; ABS, 2018b). The last change of designated regional areas was made in 2019 where the government redefined all areas outside Sydney, Melbourne and Brisbane as regional areas eligible for state-sponsored visas (Department of Home Affairs, 2020b). There is usually a residency requirement before and after the sponsored visa granted (Hugo, 2011), and this affects the redistribution of the immigrant population across Australia.

6.3 Data and Method

6.3.1 Australian Census Datasets

Two Australian Census datasets are used in this chapter. The full 2016 Australian Census data are sourced from ABS TableBuilder (ABS, 2017c). TableBuilder is an online platform allowing crosstabulation of multiple census variables. The total 2016 Census population is 23.4

million (*Table 6.1*). The 5 per cent Australian Census Sample Files (CSF) for the 2016 Census (CSF16) are sourced from ABS DataLab (Parker, 2017). DataLab CSF files contain detailed anonymous individual records for persons living in 5 per cent of all private and non-private dwellings (ABS, 2019a). Using systematic sampling techniques, CSF16 reports 1.2 million individual-level national representative samples. After dropping overseas visitors, persons younger than 15 years old, and residents of Other Territories from CSF16, the number of observations reduces to 828,619 individual records (*Table 6.1*).

Immigrants are defined by place of birth. The four largest overseas-born origins in the 2016 Census are UK[3], New Zealand, China[4], and India. The population sizes of the four immigrant groups in the full census are 1.1 million, 518 thousand, 510 thousand and 455 thousand, respectively. Sample sizes for the four immigrant groups in CSF16 are 50,541 for persons born in the UK, 21,197 for persons born in New Zealand, 23,486 for persons born in China, and 19,847 for persons born in India (*Table 6.1*). Both TableBuilder and CSF16 provide a range of self-reported variables on an individual's residential, political, socioeconomic, linguistic, and demographic attributes. Variables used in this paper are listed in *Table 6.2* with variable names and labels.

The residential patterns of immigrants are captured using current usual residence variables. States or territories of usual residence at the time of the census (*STATE*) is reported. SA2 of usual resident at the time of the census (*SA2*) is reported and used to link full census statistics to CSF16 records.

[3] This category includes Channel Islands and Isle of Man, which accounted for 0.35 per cent of the total UK category in 2016 Australian Census.
[4] Australian census documents birthplace separately for persons born in mainland China, Hong Kong Special Administrative Region, Macao Special Administrative Region, and Taiwan. This paper only models immigrants born in mainland China.

Table 6.1 Population sizes and Sample sizes of 2016 Australian Census data

Source	**Birthplace**	**2016 Census**
Census	Total	23,401,892
	United Kingdom^	1,087,758
	New Zealand	518,462
	China	509,558
	India	455,385
	Other overseas	5,215,197
	Australia	15,615,532
5 per cent CSF		
	Total	1,186,982
	with exclusions*	828,619
	United Kingdom	50,541
	New Zealand	21,197
	China	23,486
	India	19,847
	Other overseas	165,964
	Australia	547,584

^ including the Channel Islands and the Isle of Man

* overseas visitors, age<15, resident of the Other Territory are dropped

source: ABS (2017a, 2017c)

Table 6.2 Variable list

Type	Variable	Label	Data source
Residential Patterns	STATE	state or territory of current usual residence	CSF16
	SA2	Statistical Area Level 2 of current usual residence	CSF16, TableBuilder
	AUS_SHARE	% Australia-born residents in SA2 of residence	TableBuilder
	IRSAD	Index of Relative Socio-economic Advantage and Disadvantage, SA2 level	TableBuilder
	IRSD	Index of Relative Socio-economic Disadvantage, SA2 level	TableBuilder
	IER	Index of Economic Resources, SA2 level	TableBuilder
	IEO	Index of Education and Occupation, SA2 level	TableBuilder
Political integration	CITIZEN	citizenship	CSF16, TableBuilder
Socioeconomic characters	LABOUR	labour force status	CSF16, TableBuilder
	INCOME	weekly income in AUD (categorical)	CSF16, TableBuilder
	INCOME2	weekly income in AUD (dichotomous)	CSF16
	HOUR	hours worked per week	CSF16
	EDUCATION	highest non-school qualification completed	CSF16, TableBuilder
Linguistic character	ENGLISH	spoken English language proficiency	CSF16, TableBuilder
Control variables	STUDENT	current student status	CSF16
	AGE	age	CSF16
	SEX	sex	CSF16
	DURATION	duration of residence in Australia (continuous)	CSF16
	DURATION2	duration of residence in Australia (categorical)	CSF16, TableBuilder

The residential proximity between immigrants and non-immigrants is calibrated using neighbourhood population compositions, available from the full census in TableBuilder. Neighbourhood population composition is measured using the percentage of Australia-born residents in each SA2. A variable *AUS_SHARE* is created representing this percentage for everyone in CSF16, where an individual's current SA2 of residence in CSF16 is linked to SA2 population composition in full 2016 Census. SA2 is a geographic area representing socially and economically interacted communities with populations ranging between 3,000 to 25,000 persons (ABS, 2016b). SA2 is also the smallest geographic unit in the CSF16 dataset. In most cases, SA2s are equivalent to suburbs in cities, functional areas outside cities, and statistically meaningful regions in remote and sparsely populated areas. There are 2,310 SA2s across Australia in the full 2016 Census (ABS, 2016b) and 2,202 unique SA2s in the cleaned CSF16 dataset.

Neighbourhood-level socioeconomic composition is measured using the relative advantage and disadvantage socioeconomic status indicators SEIFA for each SA2[5]. SEIFA is an area-based measure produced by ABS, representing an "averaged" socioeconomic profile of its residents. The indexes are weighted and calculated using Principal Component Analysis with census variables on socioeconomic characteristics of individual residents (ABS, 2018a). All SA2s across Australia are grouped into ten SEIFA deciles to reflect the relative socioeconomic advantage and disadvantage of their residents.

There are four SEIFA indexes in 2016 Census TableBuilder: *IRSAD*, *IRSD*, *IER*, and *IEO* (ABS, 2018a). The four SEIFA indexes describe slightly different aspects of an area's socioeconomic characteristics. A full list of variables used to calculate the four SEIFA indexes are presented in the ABS (2018c: Table 4.2, Table 4.4, Table 4.6 & Table 4.8). Correlation

[5] SEIFA indexes can be calculated on different geographic levels (ABS 2018a). For the purpose of this paper, SA2 is chosen as the geographic level of analysis for it aligns with geography used in *AUS_SHARE* and it captures suburb-level information in metropolitan areas.

coefficients for the four indexes are presented in *Table 6.3* separately for persons born in Australia and persons born overseas. As shown in the table, IRSAD are highly correlated with IRSD for both Australia-born and overseas-born residents, but only highly correlated with IEO for overseas-born residents. IER is moderately correlated with IRSAD and IER for the Australia-born persons but not for the overseas-born persons. A weak and negative correlation is observed between IER and IRSAD for overseas-born persons. Selected based on this correlation matrix, IRSAD and IER are used to assess neighbourhood socioeconomics advantage and disadvantage in this paper.

Table 6.3 Correlation Coefficients between each pair of SEIFA indexes: by place of birth

	Australia-born				**Overseas-born**			
	IRSAD	**IRSD**	**IER**	**IEO**	**IRSAD**	**IRSD**	**IER**	**IEO**
IRSAD		0.9782	0.5232	0.5556		0.8426	-0.0474	0.9166
IRSD			0.6600	0.5905			0.0392	0.8016
IER				0.2994				0.0509
IEO								

Note: *correlation coefficients are calculated from the proportion of population in each SEIFA decile*

IRSAD covers a wide range of socioeconomic advantages and disadvantages for residents in the SA2, including several education variables. Higher education is seen linked to higher potentials for future socioeconomic advantage. Considering Australia's selection of skilled migrants based on tertiary and professional qualifications, it is expected that immigrants with high human capital contribute to high *IRSAD* deciles for their SA2 of residence. *IER* captures solely the financial aspects of socioeconomic advantage and disadvantage with variables income, car ownership, rent price, disadvantaged family formation and household arrangement, and unemployment.

The political aspect of immigrants' incorporation is represented by the citizenship variable *CITIZEN*. It is a dichotomous variable with two groups: having Australian citizenship and not having Australian citizenship. Australia allows dual citizenship. Of the four major origin countries, the UK and New Zealand allow dual citizenship while China and India do not. Note that though less common, it is possible to be born in Australia without Australian citizenship.

The socioeconomic characteristics of immigrants are captured in variables on labour force status (*LABOUR*), weekly income (*INCOME*), hours worked per week (*HOUR*), and the highest post-school qualification (*EDUCATION*). *INCOME* is the original categorical variable in CFS16 with 15 income intervals. Australia's median weekly income was 930 Australian dollars in the 2015-2016 financial year (ABS, 2019d). This value is used to transform *INCOME* into a dichotomised variable *INCOME2*. Weekly working hours quantifies the intensity of employment activities. The highest post-school qualification captures one's level of educational attainment. It is not necessarily an Australian qualification.

Australia is an English-speaking country. The spoken English language proficiency variable *ENGLISH* is used to capture the linguistic integration of immigrants. *ENGLISH* is derived from census questions asking whether a person speaks a language other than English at home and, if so, how well they speak English.

A set of demographic variables are considered, including age (*AGE*), sex (*SEX*), duration of residence in Australia (*DURATION*), and student status (*STUDENT*). Duration of stay (*DURATION*) is derived from the census question in which year did the person first arrive in Australia. It is a continuous variable and can be transformed into a categorical variable (*DURATION2*) with five-year length-of-residence intervals. Current student status is included to capture student migrants, given there is no visa information in the full census.

6.3.2 Methods

To investigate relationships between immigrants' residential proximity to the Australia-born persons and their other integration indicators, Ordinary Least Squares regression models are estimated. Relationships between the percentage of Australia-born neighbours (*AUS_SHARE*) and political, socioeconomic, and linguistic variables are established with CSF16, controlling for demographic and state of residence variables. Separate models are built for persons born in UK, New Zealand, China, and India using the following equation:

$$AUS\_SHARE = \beta_0 + \beta_1 CITIZEN + \beta_2 LABOUR + \beta_3 HOUR + \beta_4 INCOME2 (+ \beta_5 ENGLISH) + \beta_6 EDUCATION + \beta_7 STUDENT + \beta_8 AGE + \beta_9 SEX + \beta_{10} DURATION + \beta_{11} STATE + \varepsilon, \quad (Equation\ 1)$$

where *ENGLISH* is only included for persons born in China and India. State or territory of usual residence in 2016 (*STATE*) is used in models predicting *AUS_SHARE*. The categorical format of income (*INCOME*) and duration (*DURATION2*) variables are used in alternative models to see how the relative size of Australia-born neighbours changes along the income ladder and with increasing length of residence in Australia.

Summary statistics of these variables are presented in *Table 6.4*. For continuous variables, means and standard deviations are reported in panel A. For categorical variables, the number of observations and percentage shares are reported in panel B. Panel C reports the alternative formats of income and duration variables. The dependent variable *AUS_SHARE* is asterisked. On average, immigrants born in the UK live in areas with 67 per cent of Australia-born neighbours. Immigrants born in New Zealand live in areas with 65 per cent of Australia-born neighbours. China-born immigrants have 50 per cent of their neighbours born in Australia. India-born immigrants have 54 per cent of their neighbours born in Australia.

Table 6.4. Summary statistics by place of birth: CSF16 dataset

A. continuous variables

	United Kingdom		New Zealand		China		India	
Variable	**Mean (Std. Dev.)**	**Obs.**	**Mean (Std. Dev.)**	**Obs.**	**Mean (Std. Dev.)**	**Obs.**	**Mean (Std. Dev.)**	**Obs.**
*AUS_SHARE**	67.23 (11.74)	50,541	65.36 (12.31)	21,197	49.79 (14.80)	23,486	53.90 (14.73)	19,847
HOUR	20.25 (21.35)	50,241	26.03 (21.98)	20,968	15.38 (19.07)	23,263	24.30 (18.87)	19,540
AGE	54.71 (17.71)	50,541	44.48 (16.41)	21,197	38.81 (17.17)	23,486	37.81 (13.80)	19,847
DURATION	33.35 (19.50)	49,370	21.10 (14.30)	20,597	11.07 (10.72)	22,579	10.57 (11.26)	19,341

B. categorical variables

		United Kingdom		New Zealand		China		India	
Variable	**Categories**		**Obs.**	**%**	**Obs.**	**%**	**Obs.**	**%**	**Obs.**
CITIZEN	*Australian citizen (Ref.)*	69.80	49,670	33.78	20,824	36.90	23,279	49.08	19,647
	non-Australian citizen	30.20		66.22		63.10		50.92	
LABOUR	*employed (Ref.)*	57.25	50,356	70.51	21,092	46.88	23,438	71.72	19,757
	unemployed	2.87		5.20		6.14		5.94	
	not in the labour force	39.89		24.30		46.98		22.34	
INCOME2	*1,000 and above (Ref.)*	39.79	49,397	41.35	20,794	21.64	23,308	49.76	19,583
	below 1,000	60.21		58.65		78.36		50.24	
ENGLISH	Only speaks English at home					2.33	23,416	14.94	19,750
	very well (Ref.)					23.01		58.55	
	well					43.98		22.27	
	not well					22.31		3.23	
	not at all					8.37		1.17	
EDUCATION	postgraduate qualification	8.87	50,541	5.82	21,197	19.04	23,486	32.77	19,847
	Bachelor degree (Ref.)	18.05		12.94		26.63		28.62	
	(advanced) diploma	12.18		10.87		8.92		11.82	
	certificate	22.16		23.02		3.39		5.77	
	no post-school qualifications	38.74		47.35		42.02		21.02	
STUDENT	*not attending (Ref.)*	93.55	50,087	90.66	21,028	68.04	23,431	83.32	19,747

	current student (full-time or part-time)	6.45		9.34		31.96		16.68	
SEX	*male (Ref.)*	51.47	50,541	50.39	21,197	43.44	23,486	54.37	19,847
	female	48.53		49.61		56.56		45.63	
STATE	*NSW (Ref.)*	24.93	50,541	23.01	21,197	45.72	23,486	31.34	19,847
	VIC	19.66		17.59		32.03		37.34	
	QLD	19.18		39.06		9.12		11.06	
	SA	10.41		2.53		4.76		5.87	
	WA	21.75		15.13		4.99		10.89	
	TAS	2.11		0.91		0.65		0.41	
	NT	0.68		0.83		0.22		0.70	
	ACT	1.27		0.95		2.51		2.38	

c. categorical variables used in alternative models

		United Kingdom		**New Zealand**		**China**		**India**	
Variable	**Categories**	**%**	**Obs.**	**%**	**Obs.**	**%**	**Obs.**	**%**	**Obs.**
INCOME	negative income	0.35	49,397	0.47	20,794	1.26	23,308	0.41	19,583
	nil income	6.16		8.72		31.06		16.53	
	$1-$149	3.15		3.15		4.92		2.79	
	$150-$299	6.61		5.83		7.35		4.58	
	$300-$399	10.44		6.91		7.10		5.25	
	$400-$499	10.02		6.31		5.78		5.80	
	$500-$649	8.40		6.91		6.93		6.48	
	$650-$799	7.01		9.31		6.65		8.40	
	$800-$999 (Ref)	8.07		11.04		7.30		10.47	
	$1,000-$1,249	9.00		11.54		7.41		10.78	
	$1,250-$1,499	6.68		7.67		4.24		7.13	
	$1,500-$1,749	6.20		6.34		3.39		6.55	
	$1,750-$1,999	4.48		4.45		2.36		4.43	
	$2,000-$2,999	7.69		7.07		3.03		7.03	
	$3,000 and more	5.73		4.29		1.21		3.37	

	0-5 years, arrived 2011-2016 (Ref.)	9.57		15.20		38.13		35.41	
	6-10 years (arrived 2006-2010)	10.05		14.41		22.54		34.71	
	11-15 years (arrived 2001-2005)	7.50		11.93		13.65		11.26	
	16-20 years (arrived 1996-2000)	4.93		13.16		8.15		5.21	
	21-25 years (arrived 1991-1995)	3.98		6.58		5.45		3.83	
DURATION2	26-30 years (arrived 1986-1990)	6.77	49,370	12.26	20,597	7.85	22,579	2.79	19,341
	31-35 years (arrived 1981-1985)	6.03		7.80		1.49		1.51	
	36-40 years (arrived 1976-1980)	5.11		9.26		0.92		0.70	
	41-45 years (arrived 1971-1975)	10.41		3.61		0.39		1.86	
	46-50 years (arrived 1966-1970)	15.12		3.46		0.35		1.73	
	51 and more years (arrived 1965 and before)	20.54		2.33		1.09		0.99	

***** *dependent variables*

New Zealand-born and China-born immigrants have lower shares of Australian citizens compared to immigrants born in UK and India. On average, 70 per cent of immigrants born in the UK, 34 per cent of New Zealanders, 37 per cent of Chinese, and 49 per cent of Indians have Australian citizenship.

Chian-born and UK-born immigrants have lower shares of labour force participants compared to immigrants born in New Zealand and India. On average, UK-born and China-born immigrants also work less hours a week than persons born in New Zealand and India. The differences are likely attributed to age structure and student status. The UK-born immigrants have a much higher mean age (55 years old) compared to the other three immigrant populations. A large proportion of China-born and India-born immigrants are currently students (see the *STUDENT* variable).

The dichotomous variable *INCOME2* has two values: weekly income equal to or higher than 1,000 AUD, and weekly income below 1,000 AUD. On average, 40 per cent of UK-born, 41 per cent of New Zealand-born, 22 per cent of China-born, and 50 per cent of India-born immigrants earn no less than 1,000 AUD per week. The original CSF16 income variable *INCOME* is a categorical variable with 15 values (*Table 6.4* panel c). The modes of weekly income are 300-399 Australian dollars (AUD) for immigrants born in the UK, 1,000-1,249 AUD for immigrants born in New Zealand, and zero for immigrants born in China and India. This categorical variable is used in alternative models when testing the relationship between income ladders and spatial patterns. All other variables in alternative models are the same as specified in *Equation 1*.

English language proficiency variable *ENGLISH* has five values. This variable is excluded from models for UK-born and New Zealand-born persons because there are too few observations whose spoken English is not well or below. For China-born persons, 2 per cent of the respondents only speak English at home, 23 per cent speak English very well, 44 per cent

speak well, 22 per cent do not speak well, and 8 per cent do not speak English at all. For Indians, 15 per cent of the respondents only speak English at home, 59 per cent speak English very well, 22 per cent speak well, 3 per cent do not speak well, and 1 per cent do not speak English at all. Those speaking English very well are the reference group.

The highest post-school qualification variable *EDUCATION* is a categorical variable. Bachelor's degree is the reference group, accounting for 18 per cent of the UK-born population, 13 per cent of the New Zealand-born population, 27 per cent of the China-born population, and 29 per cent of the India-born population. The other four education groups are postgraduate qualifications, diploma qualifications, certificate level qualifications, and no post-school qualifications. Of them, diploma represents higher level vocational qualifications which are available in both higher education and vocational education and training. Certificate level qualifications are entry- and lower-level vocational qualifications. 9 per cent of persons born in the UK, 6 per cent of New Zealanders, 19 per cent of Chinese, and 33 per cent of Indians have finished a postgraduate qualification. The high shares of tertiary qualification amongst Chinese and Indian are likely results of large numbers of skilled migrants and international students. Students from China and India accounted for 38 and 18 per cent of international student enrolment in Australia's tertiary institutes in 2018 (Ferguson & Sherrell, 2019). With 22 per cent of university students (ABS, 2018a), China-born immigrants tend to complete their tertiary education in Australia. On the contrary, Indians tend to have their tertiary qualifications completed before coming to Australia: data from 2010-2019 Characteristics of Recent Migrants Surveys (ABS, 2020a) confirms that a substantially high percentage of recent India-born immigrants have their highest non-school qualifications completed overseas.

Current student status variable *STUDENT* is a dichotomous variable. There are 6 per cent current students in the UK-born population, 9 per cent in New Zealand-born population, 32 per cent in China-born population, and 17 per cent in India-born population. Current

students include both full-time and part-time students. The high shares of current students among the China-born and India-born groups partly explain the high shares of Chinese and Indians without post-school qualifications in the *EDUCATION* variable.

AGE is a continuous variable centring on 55 years old for persons born in the UK, 44 years old for persons born in New Zealand, 39 years old for persons born in China, and 38 years old for persons born in India. There are more females than males from China, and more males than females from UK, New Zealand, and India.

The variable on length of stay in Australia *DURATION* is originally a continuous variable in CSF16. On average, immigrants born in UK, New Zealand, China, and India have lived in Australia for 33, 21, 11 and 11 years, respectively. In the categorical variable *DURATION2*, lengths of stay in Australia are grouped into 11 categories. The categorical variable *DURATION2* is used in alternative models when testing the non-linear relationship between immigrants' lengths of stay and spatial patterns. All other variables in alternative models are the same as specified in *Equations 1-3*.

State or territory of current usual residence *STATE* is a categorical variable with eight values representing the eight states and territories across Australia. The four overseas-born populations show different distribution patterns. There are more UK-born persons living in NSW and WA. New Zealand-born persons are highly concentrated in QLD and NSW. China-born persons are highly concentrated in NSW and VIC. India-born persons are highly concentrated in VIC and NSW. *STATE1* and *STATE5* both have the same categories as *STATE* and show similar distribution patterns for the four overseas-born populations. For all categorical variables in *Table 6.4*, dummy variables are created to perform regression analysis.

To examine how immigrants' other characteristics relate to the relative socioeconomic levels of their neighbourhoods, the full 2016 Census data are used to cross-tabulate immigrants' labour force status, education level, English, and year of arrival with SEIFA deciles.

Accounting for the birthplace of immigrants, SEIFA deciles are tabulated separately for persons born in UK, New Zealand, China, India, and Australia.

6.4 Relationships between spatial and other variables

6.4.1 Predicting neighbourhood population compositions

The percentage of Australian-born in one's residential neighbourhood is predicted using *Equation 1*. OLS regression outputs are presented in *Figure 6.3*. Points represent regression coefficients for each independent variable examined. Colours represent persons born in UK, New Zealand, China, and India. Error bars are 95 per cent confidence intervals for each coefficient point estimate.

For persons born in UK, China, and India, not having Australian citizenship compared to having Australian citizenship decreases the share of Australia-born neighbours in one's SA2 of residence by 0.54 [95% confidence interval 0.31, 0.76], 0.71 [0.19, 1.23], and 1.68 [1.21, 2.16] per cent, respectively. These associations strongly support the conventional spatial assimilation theory. For persons born in New Zealand, however, the relationship between citizenship and neighbourhood population composition is the opposite. Not having Australian citizenship compared to having Australian citizenship increases the share of Australia-born neighbours in New Zealanders' area of residence by 0.39 [0.005, 0.78] per cent. Such different directions of association may have to do with employment and other rights granted in the Tran-Tasman Travel Agreement, as well as the geographic, economic and cultural connections between New Zealand and Australia. As a result, having Australian citizenship is not an indicator of residential proximity to the host population for New Zealanders.

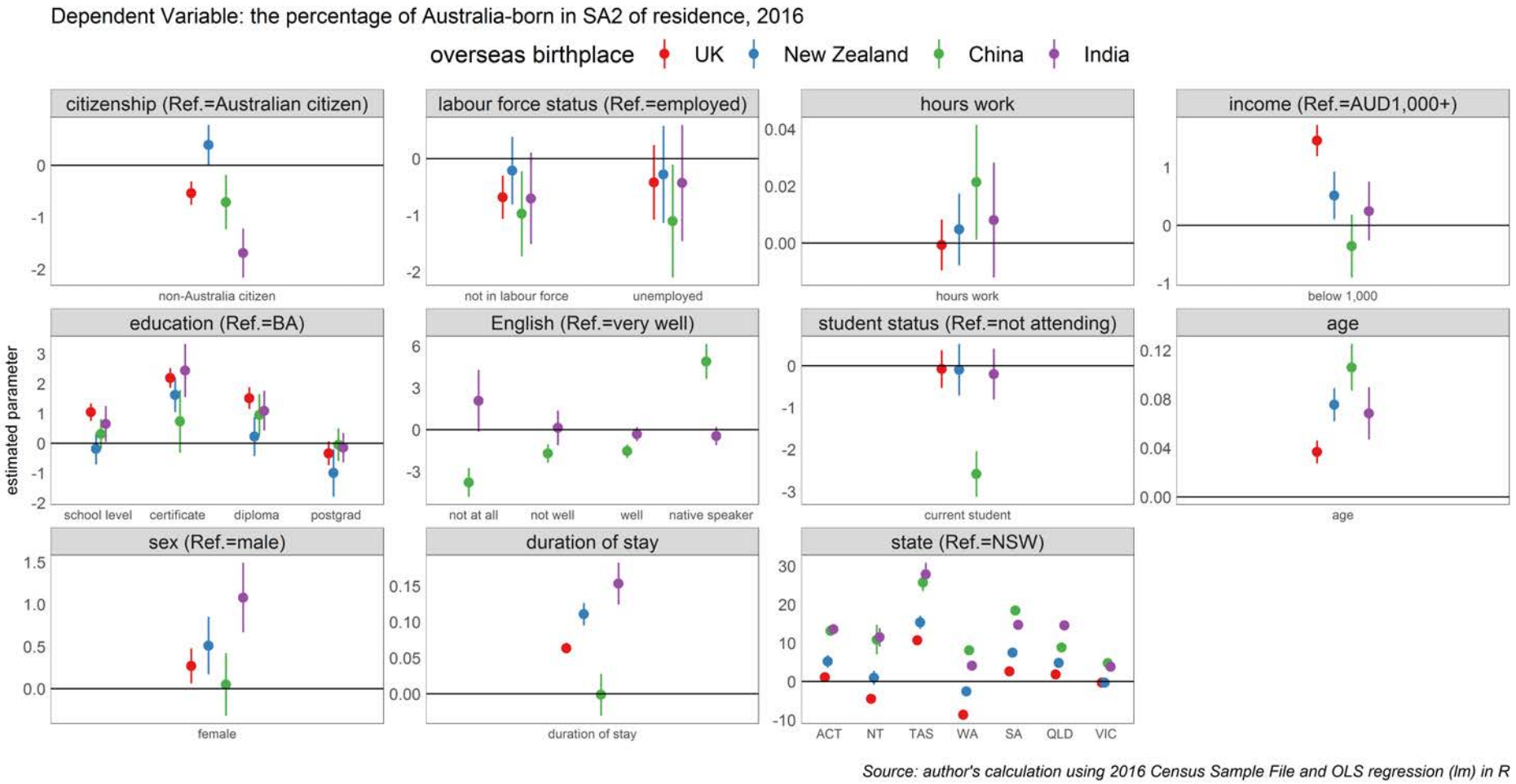


Figure 6.3 relationship between SA2 level population composition (the percentage of Australia-born residents) and other variables, 2016

Consider the three employment-related variables. Not in the labour force or unemployed are negatively correlated with the percentage of Australia-born for all four birthplaces, but only significant for persons born in UK (the unemployment variable is not significant) and China. Longer working hour is positively associated with the percentage of Australia-born neighbours for persons born in China, New Zealand, and India. The association, however, is only statistically significant for persons born in China: one additional hour working per week is associated with 0.02 [0.001, 0.04] per cent more Australia-born neighbours in one's SA2s of residence. Lower income is positively associated with a higher percentage of Australia-born neighbours for persons born in UK, New Zealand, and India. This relationship is statistically significant for persons born in UK and New Zealand: earning less than 1,000 Australian dollars per week compared to earning more than this threshold is associated with 1.5 [1.2, 1.7] per cent and 0.5 [0.1, 0.9] per cent more Australia-born neighbours in their SA2s of residence, respectively. Such direction of association does not support the first hypothesis derived from conventional spatial assimilation theory where higher income is expected to predict higher residential proximity with the host population. The China-born persons shows a negative but statistically insignificant correlation between higher income and more Australia-born neighbours, which follows what is suggested by the conventional spatial assimilation literature.

To further test the income effect, instead of using the binary variable *INCOME2*, alternative models are built using the categorical income variable *INCOME*. The coefficients for *INCOME* are presented in *Figure 6.4* after accounting for all other non-income variables in the original model. Compared to those earning 800-999 Australian dollars per week, lower income levels are generally associated with higher percentages of Australia-born neighbours for immigrants from all four overseas-born groups. The relationship between income and neighbourhood population composition diverges in the higher income groups for persons of

different birthplaces. For UK immigrants, higher income levels are associated with lower percentages of Australia-born neighbours. For Chinese, however, higher income levels are associated with higher percentages of Australia-born neighbours. Similar to the Chinese, "U" shape associations between income and residential proximity to Australia-born persons are found for immigrants born in India and New Zealand. India-born in the second highest income group ($2000-$2999) and New Zealand-born in the highest income group ($3000+) tend to have fewer Australia-born neighbours, though these relationships are not significant statistically. It worth to note that the associations for India-born in almost all income categories and for New Zealand-born in high income categories are not significant.

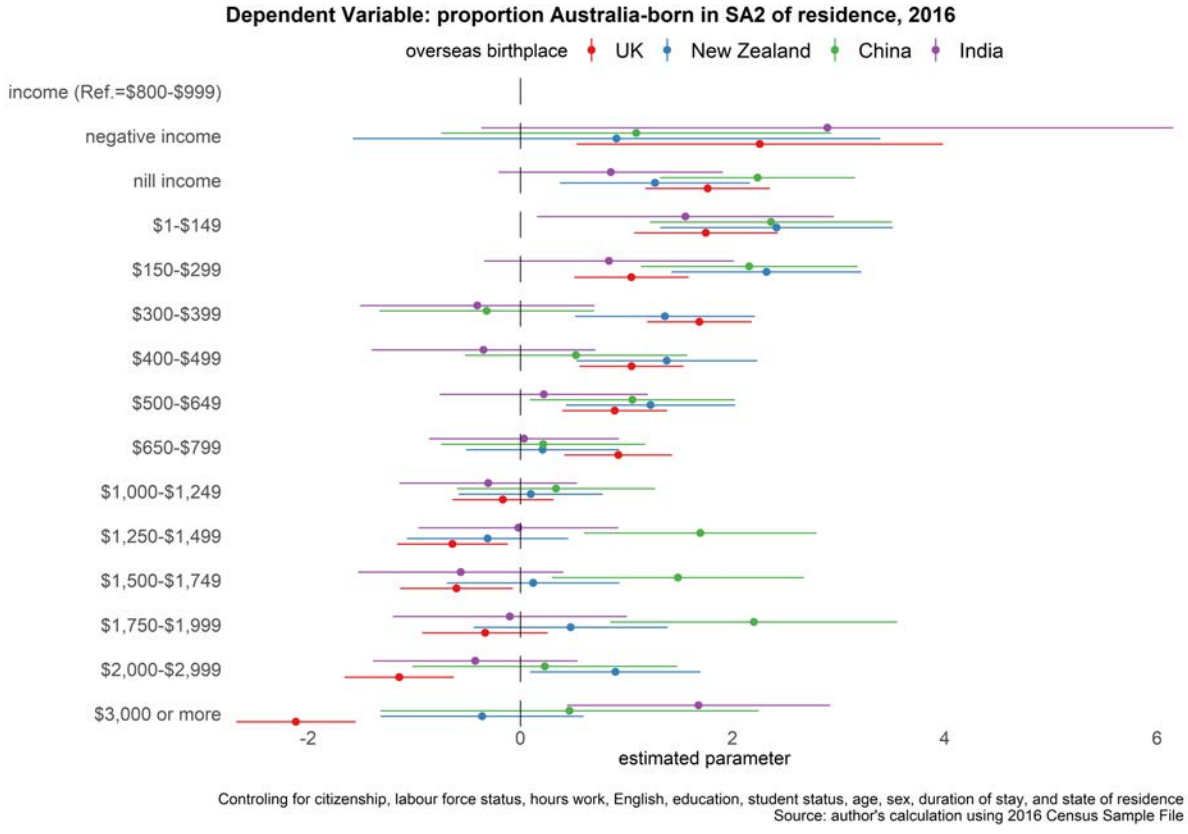


Figure 6.4 relationship between income and percentage Australia-born in SA2 of residence, an alternative model with categorical income variable INCOME

These patterns do not support a linear and positive relationship between high income and high residential proximity to the Australia-born population. The UK-born group shows a linear and significant negative association between income and residential proximity to Australia-born neighbours, which does not align with what is suggested in the conventional spatial assimilation theory. Evidence from the low-income New Zealand-born and China-born groups also violates what the conventional theory suggests: for them, lower-than-average income is positively associated with high residential proximity to the Australia-born population. For high-income persons born in China, the association between high income and high residential proximity to the Australia-born persons is positive. The evidence from the China-born population likely follows the segmented assimilation theory where immigrants of different socioeconomic capital integrate into very different pockets of the host society.

The relationship between education qualification and immigrants' neighbourhood population composition is not unidirectional for all four overseas-born groups. Compared to having a bachelor's degree, having a postgraduate qualification decreases the percentage of Australia-born neighbour by 0.3 per cent for persons born in UK, 1.0 [0.2, 1.8] for persons born in New Zealand, 0.05 for persons born in China, and 0.15 for persons born in India. Compared to having a bachelor's degree, having lower-level educational attainment, including diploma, certificate and school-level education, increases the share of Australia-born neighbours by 0.2 to 2.4 per cent for the four immigrant groups, except for New Zealand-born persons. The estimated parameters are smaller for school level education than for certificates and diplomas. These bell-shape relationships between the highest qualification and the percentage of Australia-born persons in one's neighbourhood may have to do with the average education level of Australia-born persons being lower than immigrants. As shown in *Figure 6.5*, for those aged 25 years old and above in the 2016 Census, 24 per cent of the Australia-born persons hold a tertiary qualification. This corresponds to 28 per cent for the UK-born immigrants, 21 per

cent for New Zealanders, 53 per cent for China-born residents, and 65 per cent for Indian-born residents.

The distribution of education coefficients supports a segemented assimilation hypothesis that higher socioeconomic status of immigrants does not necessarily translate into higher spatial proximity to the Australia-born persons. The coefficients are, however, quite consistent for the four birthplace groups. Therefore, alternative possibilities are to be explored in *Section 6.4.2* on the association between higher human capital of immigrants and the aggregated neighbourhood socioeconomic status (SEIFA indexes).

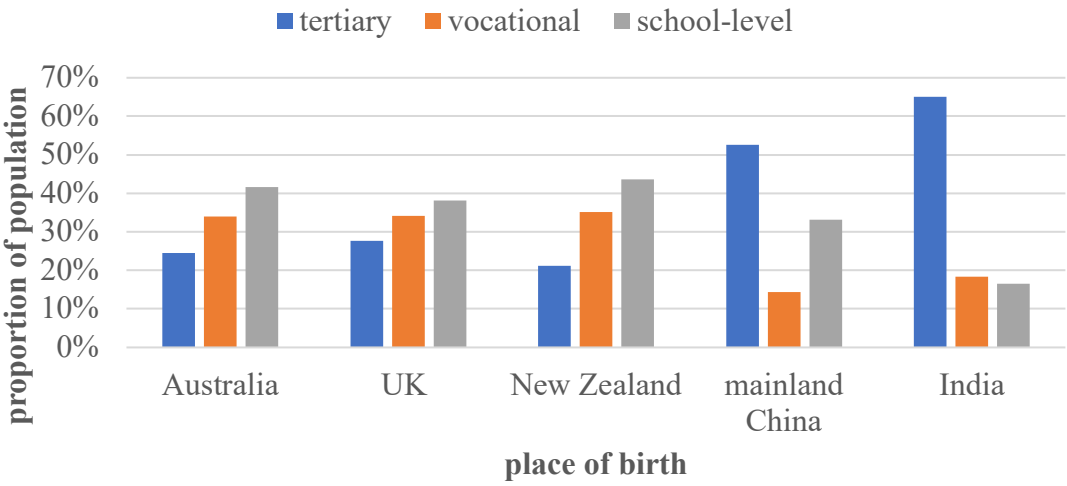


Figure 6.5 Population distribution by the level of highest education attainment: age 25 years old and above in 2016 Census (ABS, 2017c)

English language proficiency is modelled to predict neighbourhood population compositions for persons born in non-main English-speaking countries (ABS, 2013b). The language variable shows very different patterns for persons born in China and persons born in India. Compared to those who reported speaking English very well, lower English competencies decrease the percentage of Australia-born neighbours for the China-born persons by 1.5 to 3.8 per cent. China-born persons who speak English at home are much more likely to

have Australia-born neighbours, many of whom would be Chinese migrants with non-Chinese (including Australia-born) partners and children of Australian expatriate parents who were born in China. This trend supports a conventional spatial assimilation story. For persons born in India, not statistically significant associations between English ability and the percentage of Australia-born neighbours are found for Indians who can speak at least some English. Compared to persons who speak English very well, however, zero English abilities increases the share of Australia-born neighbours by 2.1 per cent for Indians, and it is statistically significant at $p<0.1$ level [0.2, 3.9].

Such difference between the China-born and the Indian-born group persists after controlling for current student status, age, education levels, and duration of stay in Australia. A possible reason for such divergence is that the vast majority of India-born persons are proficient in English which is widely spoken in India. Therefore, the English language proficiency has minimum effect on their residential proximity with Australia-born neighbours. The minority 1 per cent of India-born (*Table 6.4*) who do not speak English at all may have very different attributes compared with other India-born immigrants. Another possible reason is that Indians tend to have bigger family sizes where persons of different English levels live together. *Figure 6.6* shows the differences in family size by English proficiencies for China-born and India-born immigrants in the full 2016 Census. Regardless of their levels of spoken English proficiencies, the majority of China-born immigrants live in two-person families or non-private dwellings including dormitories. Proportionally more Indians live in large families with four or more members, especially when their English abilities are lower or null. This trend supports the segmented assimilation hypothesis where English language proficiency does not necessarily translate into residential proximity with the Australia-born persons.

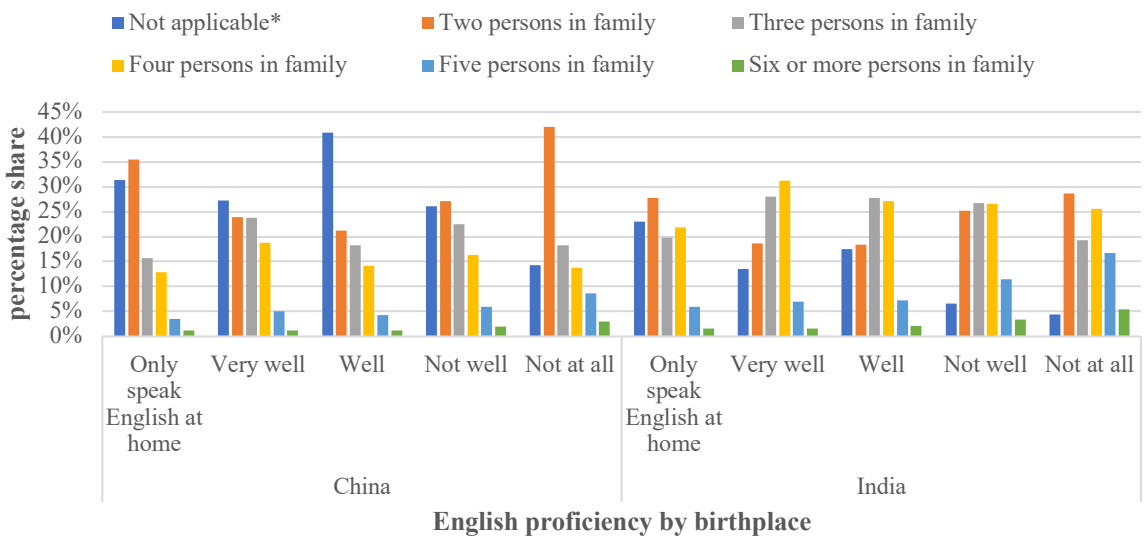


*Figure 6.6 Population distribution by family size: China-born and Indian-born persons of different English proficiencies in the 2016 Census (ABS, 2017c). * not applicable category comprises single-person families, non-private dwellings including dormitories, and others (ABS, 2016d)*

Age is positively associated with the percentage of Australia-born neighbours immigrants have. For persons born in UK, New Zealand, China, and India, one year increment in age increases the percentage of Australia-born neighbours by 0.04 [0.03, 0.05], 0.08 [0.06, 0.09], 0.11 [0.09, 0.13] and 0.07 [0.05, 0.09] per cent, respectively. Compared to males, female immigrants from UK, New Zealand, and India live in neighbourhoods with higher percentages of Australia-born residents.

A longer length of residence in Australia is positively associated with a higher percentage of Australia-born neighbours for immigrants born in UK, New Zealand, and India. One more year living in Australia increases the share of their Australia-born neighbours by 0.06 [0.056, 0.07], 0.11 [0.10, 0.13], and 0.15 [0.12, 0.18] per cent, respectively. For immigrants from China, the relationship is statistically insignificant when the length of residence is modelled as a continuous variable *DURATION*. When the duration of stay is

measured as a categorical variable with five-year intervals (*DURATION2*), a non-linear relationship between the year of arrival and the percentage of Australia-born neighbours is observed for the China-born persons (*Figure 6.7*). Compared to Chinese who have lived in Australia for less than six years, longer years of living in Australia is associated with higher shares of Australia-born neighbours for post-1996 and pre-1966 arrivals. The pre-1966 group is very small (*Table 6.4*) and of distinctive attributes: they arrived when the While Australia policy was in full force where only exceptional reasons would allow them to enter and stay in Australia. It may include marriage migrants and children of Australian expatriates in China. Those who arrived between 1966 and 1985 are predicted to have lower percentages of Australia-born neighbours compared to newly arrived Chinese. This non-linear pattern represents the long history of Chinese migration to Australia, and the intra-group heterogeneity between later skilled and earlier less skilled Chinese migrants (Jupp, 2001; Guan, 2019), in favour of the segmented assimilation theory. For immigrants born in UK, New Zealand, and India, linear and positive relationships are observed between longer residence in Australia (or earlier arrival cohorts) and higher shares of Australia-born neighbours.

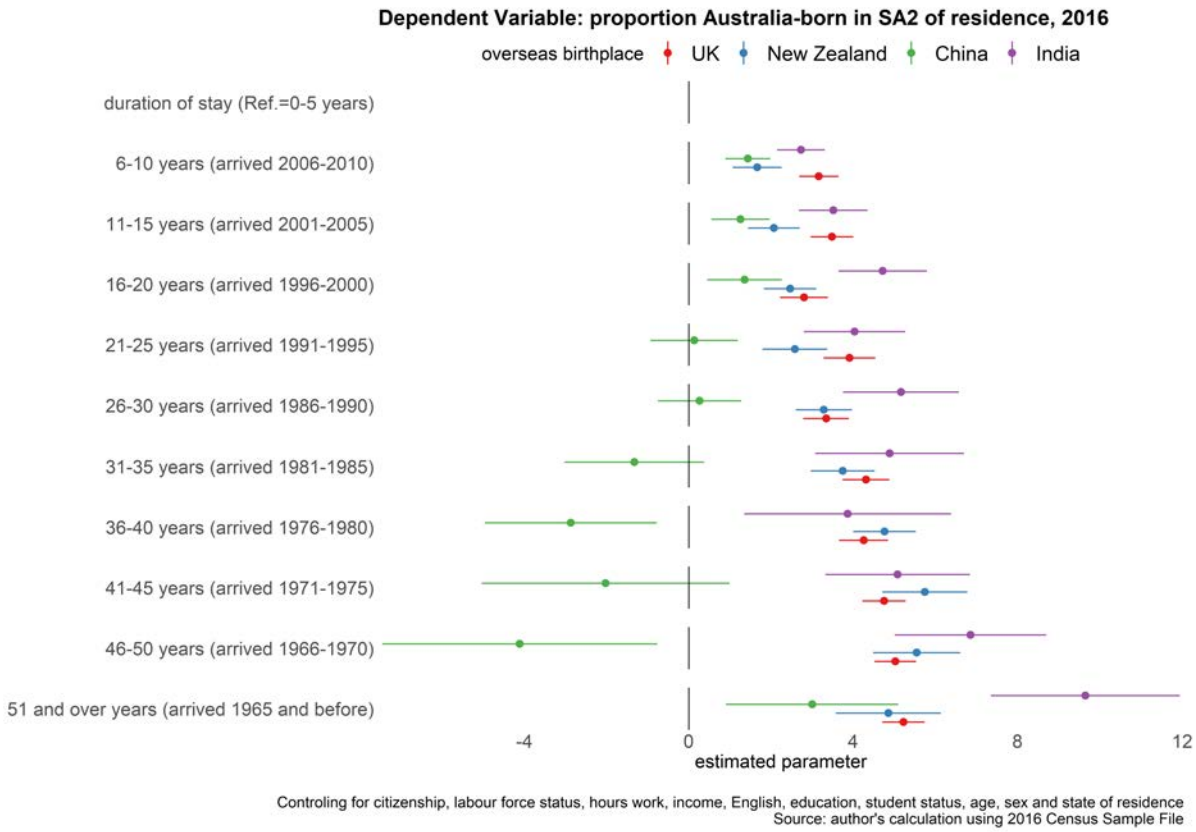


Figure 6.7 relationship between duration of residence (year of the first arrival in Australia) and percentage of Australia-born in SA2 of residence

Compared to living in NSW, living in another state or territory is associated with increased the percentage of one's Australia-born neighbours, except for UK and New Zealand immigrants in WA and UK persons in NT. This of course has to do with the state/territory level distributions of the immigrant population where NSW hosts the largest number of overseas-born population (ABS, 2017c). Consequently, NSW residents have higher chances to live in an area with fewer Australia-born neighbours. WA and Victoria both record higher shares of overseas-born residents than NSW in the 2016 Census (ABS, 2017d). However, the Indian and Chinese groups in WA and Victoria show higher probabilities of having Australia-born neighbours than those living in NSW. This implies different residential or housing arrangements between the two new immigrant groups and the UK or the New Zealand groups:

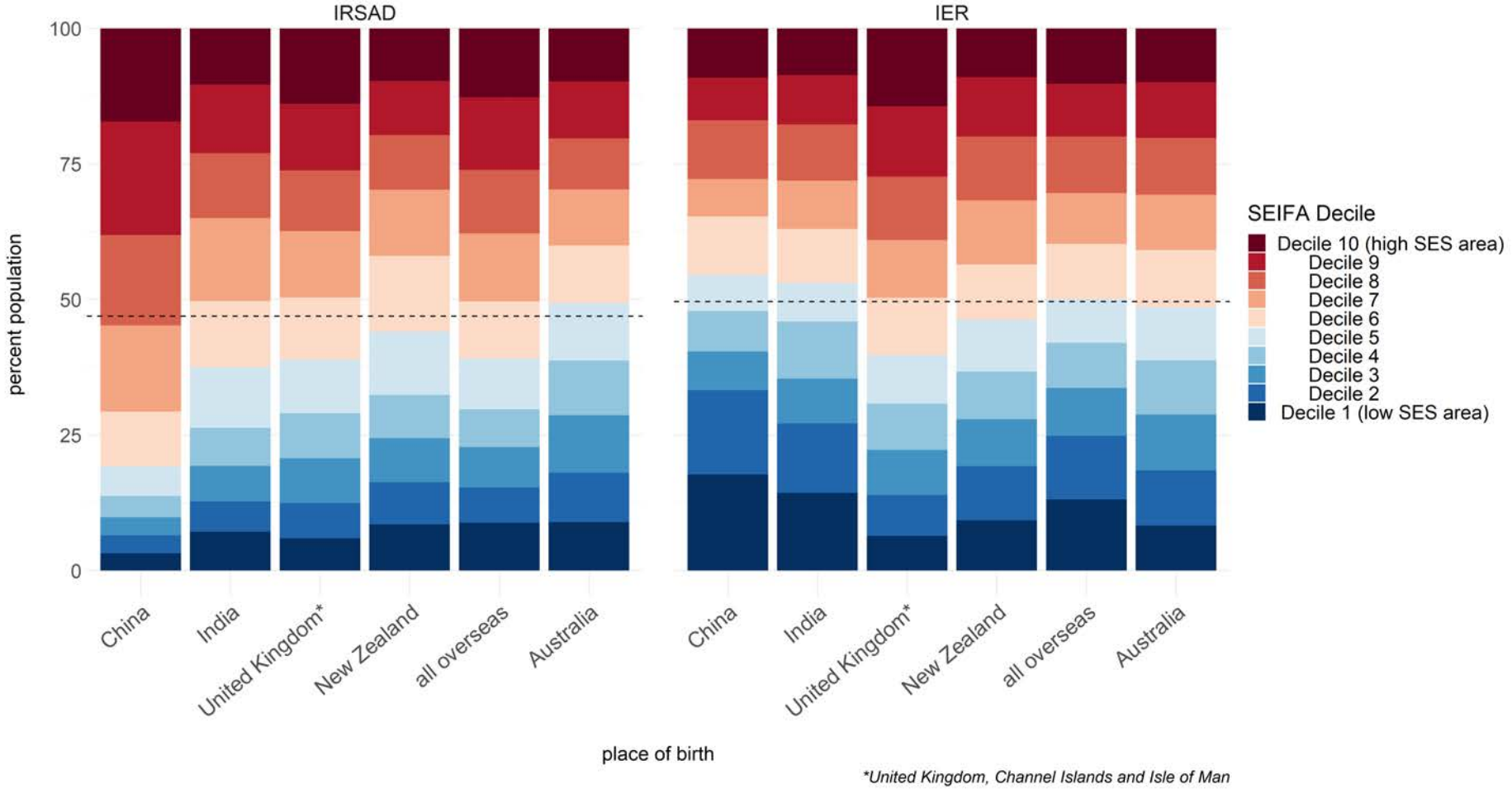
Chinese and Indians are spatially more concentrated than European immigrants and Australia-born persons (Guan, 2019).

6.4.2 Relating to neighbourhood socioeconomic conditions

Consider the relationships between immigrants' integration attirbutes and their neighbourhood socioeconomic conditions. In *Figure 6.1*, IRSAD and IER indexes are plotted for four overseas-born populations (immigrants born in China, India, UK, and New Zealand), all overseas –born persons, and persons born in Australia. Each stacked bar represents the percentage distribution of the population by SEIFA decile. Redder areas are percentages of the population living in SA2s with higher relative socioeconomic status. Bluer areas are percentages of the population living in SA2s with lower relative socioeconomic status. Dash lines are the median IRSAD and IER level for all Australian residents (regardless of birthplaces).

For IRSAD, substantially more China-born immigrants live in areas with high socioeconomic advantage (decile 6 to 10). For IER, higher percentages of immigrants from China and UK live in SA2s with high economic resources. On average, there are slightly higher percentages of overseas-born persons living in SA2s with high IRSAD compared to the Australia-born persons, and slightly higher Australia-born persons living in SA2 with high IER compared to the overseas-born. This pattern has to do with variations in SEIFA variable selections (ABS, 2018c) and socioeconomic characteristics of different immigrant groups. New immigrant groups (especially the China-born persons) live in neighbourhoods that are socioeconomically more advantage (IRSAD) but with fewer economic recourse (IER).

Figure 6.1 population distribution by 2016 Census SA2 level SEIFA deciles: six places of birth



In *Figure 6.2*, associations between neighbourhood socioeconomic conditions and their citizenship status (*Figure 6.2a*), labour force status (*Figure 6.2b*), income level (*Figure 6.2c*), education level (*Figure 6.2d*), English proficiency (*Figure 6.2e*), and year of the first arrival in Australia (*Figure 6.2f*) for immigrants and Australia-born persons are plotted. *Figure 6.2a* shows that having Australian citizenship is an advantage for immigrants to live in SA2s with relatively high economic resources (IER). When considering IRSAD, however, non-Australian citizens from China live in neighbourhoods with higher socioeconomic advantages than China-born Australian citizens. This is because a large fraction of the China-born immigrants are recent arrivals under skill selection or education programs who have not yet chosen to naturalize. Skilled immigrants and post-2000 China-born arrivals are also found having lower naturalization rates (ABS, 2017c; *Figure 3.2.1* in *Chapter 3*).

As shown in *Figure 6.2b*, being employed is positively related to higher neighbourhood socioeconomic conditions for overseas-born immigrants, except for China-born (IRSAD) and India-born groups (IRSAD and IER). This may have to do with high shares of student migrants who are currently not in the labour force, and the family size and living arrangement of Indian immigrants where household members have mixed labour force participation patterns. Fewer variations are found between birthplace groups in the way neighbourhood socioeconomic conditions change along the income ladder, except for the universally high IRSAD for China-born persons (*Figure 6.2c*). Better income is positively related to better neighbourhood socioeconomic conditions. Those with negative income or earning 150-500 Australian dollars per week tend to live in the most socioeconomically disadvantaged neighbourhoods. The cross-tabulation method does not account for the age or living arrangement of individuals. Thus, it is highly possible those with no income or earning less than 150 dollars per week are dependants living with parents or other family members. This possibility is further substantiated in a set of OLS regression models with scores (not deciles) of the four SEIFA indexes as dependent

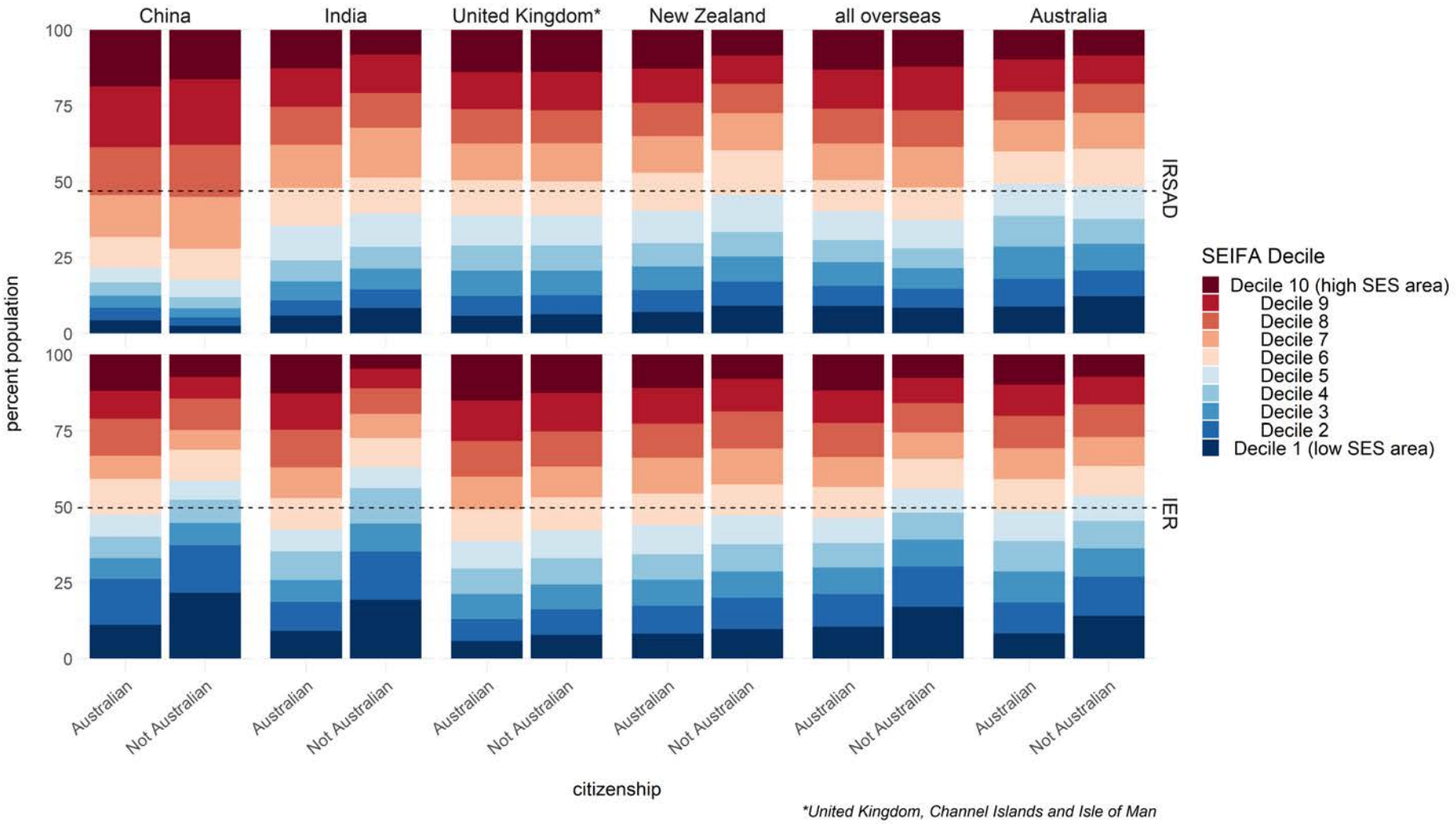
variables, predicted by independent variables in *Table 6.4* and *Equation 1*. Statistically significant associations are found between medium-low income levels and more disadvantaged neighbourhood socioeconomic conditions, providing evidence fo the segmented assimilation theory. Full results of these OLS regression are not reported because census variables used to compose SEIFA indexes overlap with census variables used as model predictors.

As shown in *Figure 6.2d*, having a tertiary qualification is a strong signal for better neighbourhood socioeconomic condition. The educational advantages, however, are weaker in IER for both the Australia-born and overseas-born populations. For the China-born and India-born groups, having vocational or secondary qualifications does not result in a high residential disadvantage compared to having tertiary qualifications. This is likely caused by (i) the relatively high residential concentration of China-born and India-born immigrants (Guan, 2019), and (ii) high shares of current students among the China-born and India-born immigrants (32 and 17 per cent, *Table 6.4*). The education return are lower for India-born immigrants with tertiary qualifications: there are few highly educated India-born living in well-off neighbourhoods compared with other birthplace groups. This may relates to less value placed on qualifications obtained overseas, an attributes shared amongst India-born immigrants (ABS, 2017c).

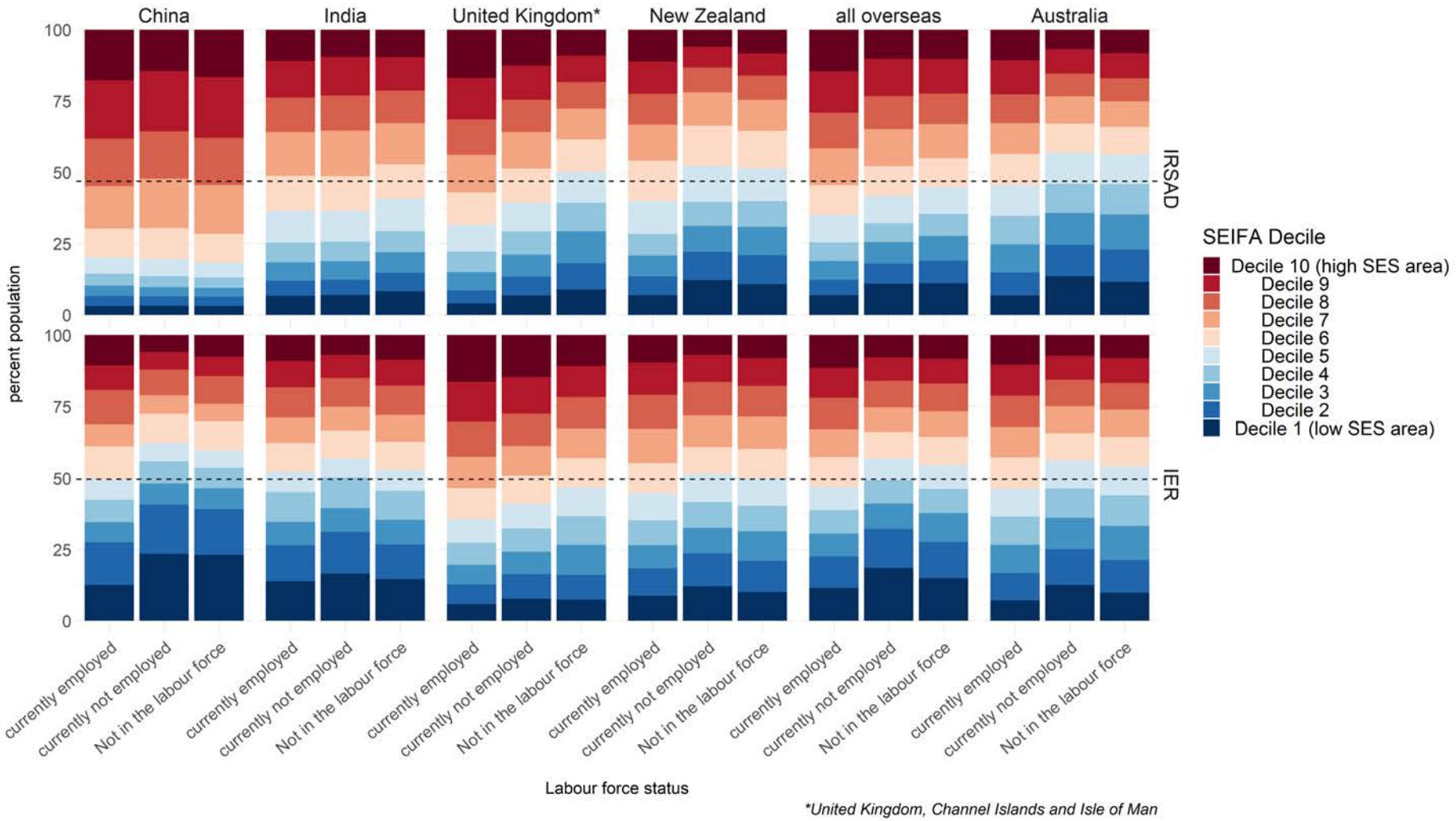
Higher spoken English language proficiency generally associates with better neighbourhood socioeconomic conditions (*Figure 6.2e*). The relation, however, is not linear but follows a "U" shape such that having very good spoken English while speaking another language at home is an advantage in upward spatial-socioeconomic mobility, except for New Zealanders. For New Zealand-born, those who only speak English at home tend to live in more advantaged areas.

Figure 6.2a-e. population distribution by 2016 Census SA2 level SEIFA deciles and immigrant's other characteristics: six places of birth

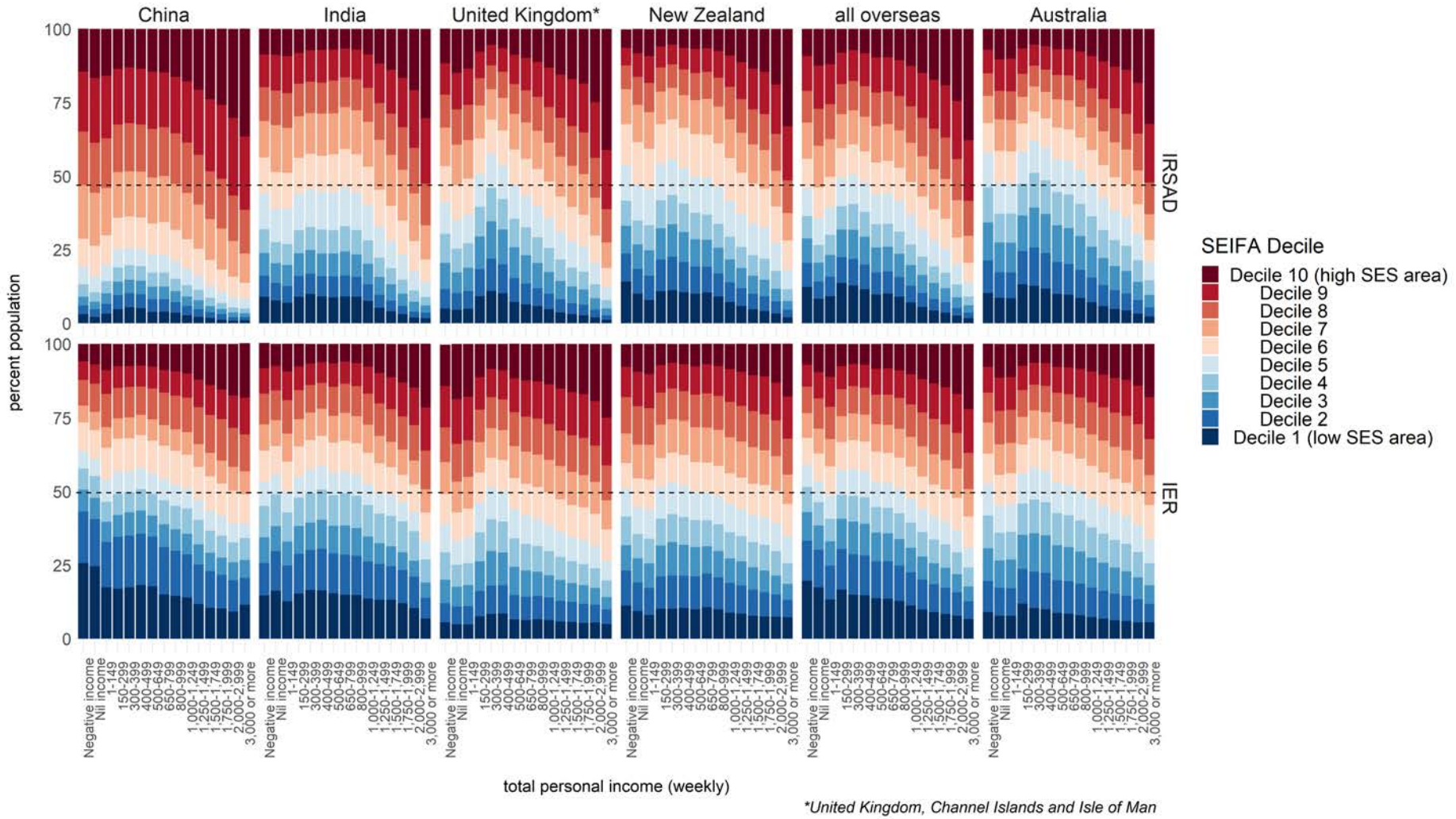
a. Citizenship



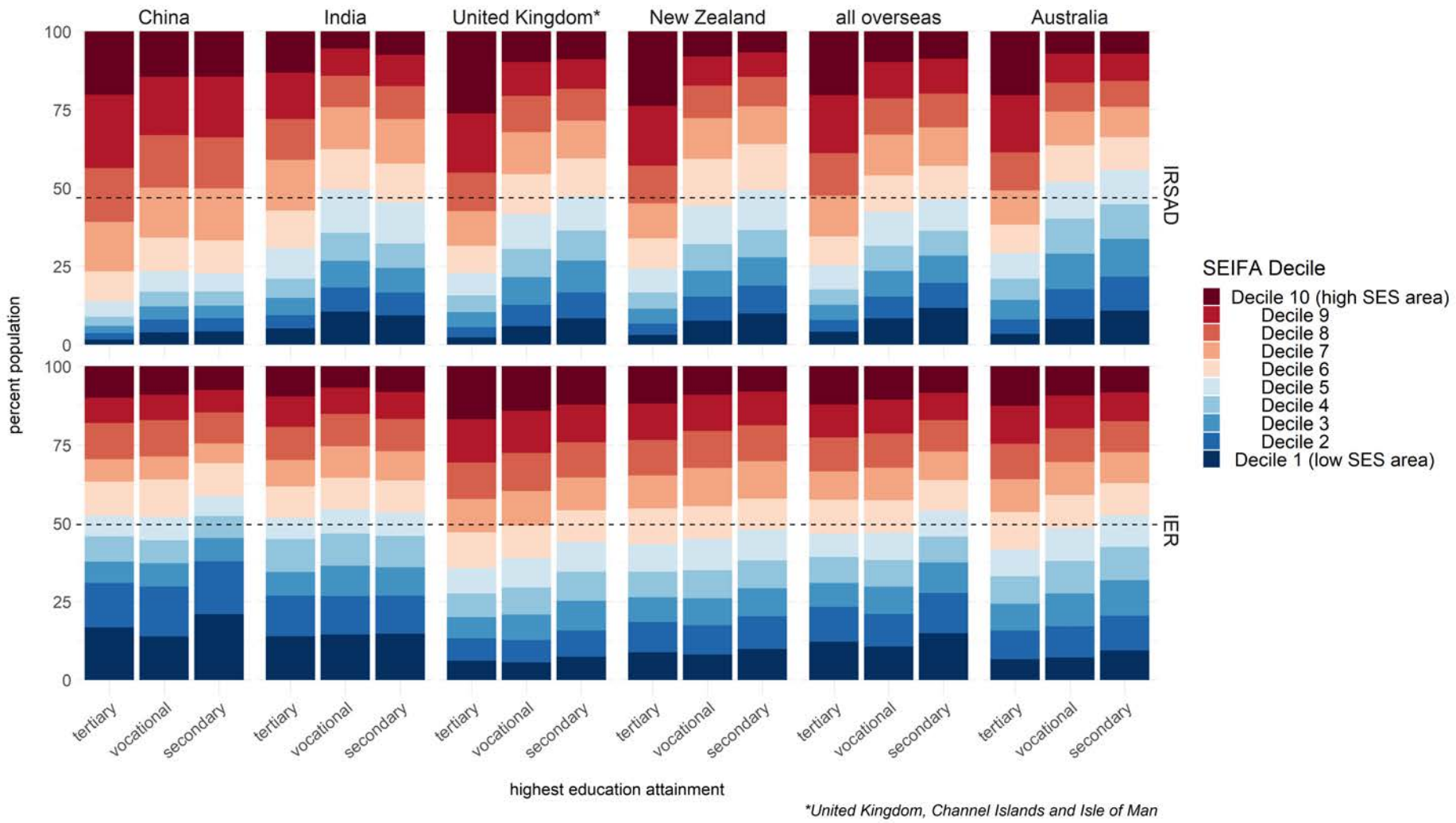
b. Labour force status



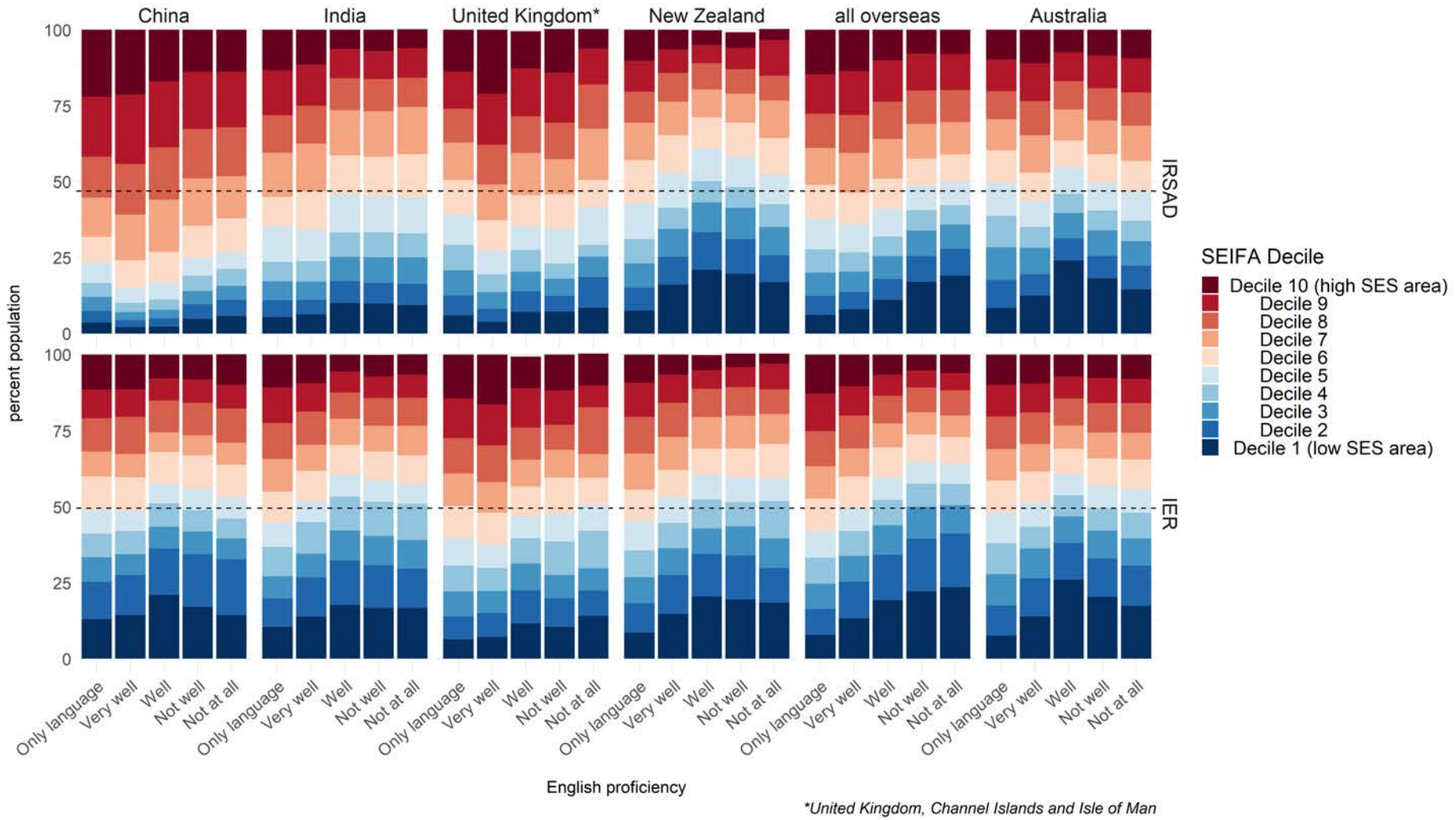
c. Weekly income



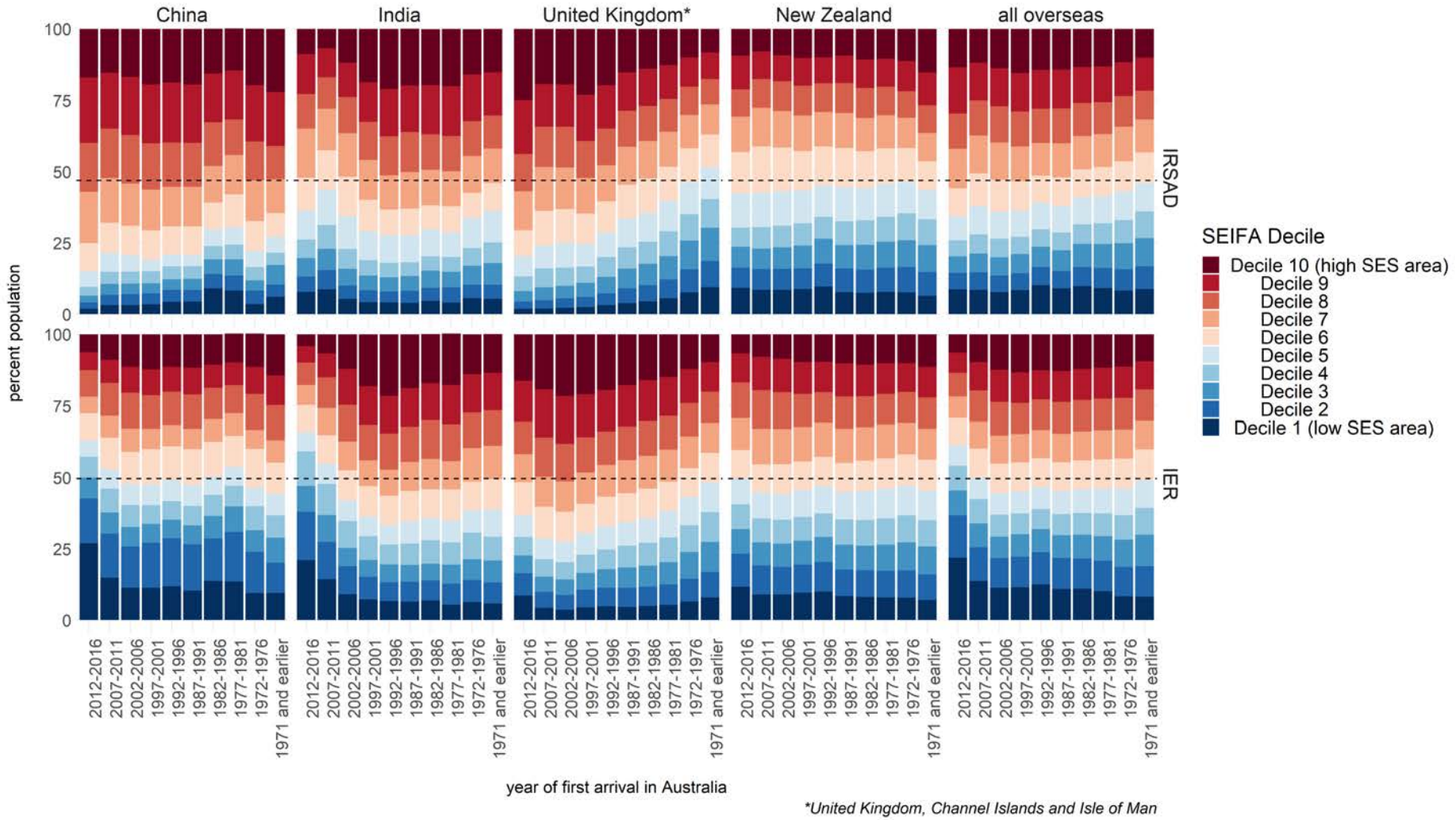
d. Highest qualification obtained



e. Spoken English language proficiency



f. year of the first arrival in Australia



For control variables listed in *Table 6.4*, being a current student is associated with a lower neighbourhood SEIFA decile. A consistent age pattern is observed where young adults and senior persons tend to live in neighbourhoods with relatively lower socioeconomic status (data not shown). This could be related to that young students and retired people are usually not in the labour force.

The year of arrival variable has different directions of association with neighbourhood socioeconomic conditions depending on the immigrant's birthplace (*Figure 6.2f*). For persons born in UK, longer residence in Australia means lower IRSAD deciles for their SA2 neighbourhood, which supports the first hypothesis suggested by conventional spatial assimilaton theory. However, the IER deciles show different directions of association for post-2001 arrival cohorts. For pre-2002 UK-born immigrants, newer cohorts live in better neighbourhoods across IER deciles. Differences between the two cohorts may have to do with different group characteristics including education level and skillsets. Similar patterns and cohort differences are also observed for Indians. For persons born in China, shorter residence in Australia generally means living in neighbourhoods with lower IER but higher IRSAD. However, the 1977-81 and 1982-86 China-born arrivals live in SA2s with lower socioeconomic conditions than other cohorts. The two cohorts are small but diverse arrival cohorts including onward migration from Southeast Asia (possible chain migration from Vietnam), marriage migrants, and the first wave of emigrants and self-funded students at the onset of China's opening-up (Jupp, 2001). These inter-birthpalce and inter-cohort varaitions support the third hypothesis developed from segmented assimilation theory. New Zealanders, different from the three immigrant groups examined, show very mild intra-group variations across arrival cohorts.

To summarize, including education level, which is a result of immigrant selection and driver of integration for the first-generation immigrants, the direction of relationships between neighbourhood socioeconomic composition and key integration indicators shows that

immigrants upward socioeconomic mobility generally aligns with their residential mobility. Immigrants with higher human capital and better financial and political resources tend to live in areas with higher economic resources. However, tertiary education is not necessary rewarded with higher heigourhood economic resources. Comparing across birthplace-specific populations, the relationships between neighbourhood socioeocnomis advantage (espetially IER) and human, financial and political capital vary by birthplace of immigrants. It means that the link between individual socio-political characteristics and their neighbourhood economic resources also depends on the birthplace of immigrants and the distribution of migrant networks, which supports a segmented assimilation view.

6.5 Conclusion and Discussion

The integration of immigrants is necessary for the economic vitality, social solidarity, and cohesion amongst cultures in major receiving countries. Two strands of theories have been developed in the United States to describe and understand how different aspects of immigrant integration are coordinated, or not coordinated, with the main focus on spatial or residential patterns, socioeconomic characteristics, and destination language proficiency. The latest Australian census data are examined in this paper, testing and providing new insights for conventional spatial assimilation theory and segmented assimilation theory. In general, evidence from this paper supports the conventional assimilation path for immigrants born in UK and New Zealand and the segmented assimilation path for immigrants born in China and India. There are, however, evidence contradicting or not entirely aligning with what the two theories hypothesized.

The conventional spatial assimilation theory suggests positive relationships between immigrants' residential proximity to Australia-born persons and higher socio-political, economic and linguistic integration with longer residence in the destination country. In this paper, the percentage of Australia-born persons in immigrant's neighbourhood of residence is

found to be positively related to their employment, age, and length of stay in Australia for UK-born and New Zealand-born immigrants, confirming the conventional theory. Their citizenship, income, and education, however, show patterns that are different from those suggested in the conventional spatial assimilation theory. Having Australian citizenship or not does not differentiate the percentage of Australia-born neighbours for New Zealanders. A negative linear relationship between income and percentage of Australia-born neighbours is found for UK-born immigrants. For the New Zealand-born as well as China-born and India-born immigrants, a "U" shape association is found between the income ladder and the percentage of Australia-born neighbours such that very low or very high incomes are generally associated with high percentages of Australia-born neighbours. Non-linear relationships are also found between education and the percentage of Australia-born neighbours. Given the generally lower education levels of the Australia-born population compared to the overseas-born population, these results may imply the importance of human capital over birthplace or ethnicity in determining immigrants' residential choices.

Segmented assimilation suggests for immigrants of non-traditional and non-major English-speaking origins, high human capital and English proficiency may be less successful translating to high residential proximity to Australia-born neighbours. The relationship between English proficiency and the percentage of Australia-born neighbours aligns with segmented assimilation theory for the India-born immigrants but not the China-born immigrants.

The direction of association between migrant year of arrival and neighbourhood socioeconomic conditions is different for different birthplaces. Arrival cohorts show statistically significant unidirectional relationships with immigrant neighbourhood populations and socioeconomic compositions for India-born immigrants and persons born in UK and New Zealand, but not for those born in China. Year of arrival represents different human capital of

immigrants who arrived in Australia under different migration policies. Findings from this research confirm that the levels of integration for immigrants do not overwhelmingly depend on their places of birth but also their socioeconomic status and arrivals cohorts.

Considering the different human capital between skilled migrants and the general Australia-born population, upward socioeconomic mobility of immigrants may not necessarily link to increasing proximity between immigrants and non-immigrants. Instead, high human capital are found related to immigrants' upward spatial mobility into better-off neighbourhoods. Higher education and spoken English proficiency are positively related to immigrant's residence in neighbourhoods with higher socioeconomic status but not always linked to living in neighbourhoods with a higher percentage of Australia-born persons. This is different from what South et al. (2005) found in the US where greater human and financial capital and English abilities for Latino immigrants are associated with moving into whiter neighbourhood. Rather than achieving residential proximity with the Australia-born population, the Australian immigrants equipped with high human capital are achieving residential proximity with persons of similar socioeconomic backgrounds.

The findings pose questions on what integration means and whether residential proximity to non-immigrants is enough in measuring immigrant integration in countries with migration policies that are very different from the US. Assimiliation theories developed in the US have been tested not fully fitted with the Australia context at the onset (2001 Census) of Australia's skilled migration shifts (Forrest et al., 2006). For a skilled migration country like Australia, the human capital of immigrants are higher on average than the host society. Skilled migrants are equipped with socioeconomic advantages including higher education levels, good English language and bilingual skills, and qualifications in the most needed occupations. All of these can be translated into employment in skill-matched jobs, good income, and better interaction with the host community. Both the conventional and the segmented assimilation

theories, however, centre on the distance and differences between immigrants and non-immigrants, implying that it is imperative to become like the host population to be fully incorporated.

Rather than the formation of sub-societies based on race, ethnicity or the origin of residents, studies in the US also show that socioeconomic status and region of residence may also interplay in determining the subculture and sub-society (Gordon, 1968). Immigrants equipped with good English language skills and higher education are advantaged in socioeconomic success, which may prevail over (dis)advantages from birthplace, ethnicity, or race. To further substantiate this argument, future research could look into the residential differences between immigrants and non-immigrants, taking into account education. Considering a world that more and more relies on international collaboration and exchange, with migration being one of the forms, persons with high human capital and cross-national skills are more advantaged and widely welcomed by traditional and non-traditional immigration countries. The necessity and extent of immigrant acculturation may become less of a concern, as long as common values are shared between groups. Other (dis)similarities shared between immigrants and the host population may redefine what is considered successful integration. With slim chances of integrating two or multiple cultures in a relatively short period and the advantage of cross-cultural knowledge in today's global market, the knowledge and skills immigrants carry make them equally important contributors to the development and advancement of the destination countries.

This research also provides important insights into how well immigrants are integrated into Australian society. It helps researchers and policymakers to better understand the dynamics of immigrant settlement and incorporation by relating multiple spatial and other integration dimensions. The balance between optimising benefits from international migration and minimising the costs associated is an ongoing debate (NASEM, 2015). With skilled migration

and new immigrants from Asia now dominating the inflows, the Australian government has endeavoured to popularize cultural and linguistic diversity, boost regional population and economic growth, and reduce tensions between different ethnic groups. How the policies and initiatives translate into immigrants' successful integration is important for the evaluation of current policies as well as for immigrants' long-term success in Australia.

Reference

Ager, A. and Strang, A. (2008). Understanding integration: A conceptual framework. *Journal of Refugee Studies, 21*(2): 166-191.

Andrade, M.S. (2009) The effects of English language proficiency on adjustment to university life. *International Multilingual Research Journal*, *3*(1), 16-34. doi:10.1080/19313150802668249

Australian Bureau of Statistics (1995) *3412.0 - Migration, Australia, 1994*. Accessed 18/01/2021 at https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/4610C486FB038A09CA25722E001A3A66?opendocument

Australian Bureau of Statistics (2013b) *3415.0 - Migrant Data Matrices, 2013*. Accessed 18/10/2020 at https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3415.0Main+Features12013?OpenDocument

Australian Bureau of Statistics (2013c) *6524.0.55.002 - Estimates of Personal Income for Small Areas, Time Series, 2005-06 to 2010-11*. Accessed 08/10/2020 at https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6524.0.55.002Main+Features12005-06%20to%202010-11?OpenDocument=

Australian Bureau of Statistics (2016a) *1270.0.55.001 - Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2016*. Accessed 01/01/2021 at https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.001~July%202016~Main%20Features~Statistical%20Area%20Level%202%20(SA2)~10014

Australian Bureau of Statistics (2016b) *Census of Population and Housing.* Census TableBuilder.

Australian Bureau of Statistics (2016c) *Census of Population and Housing, 2016.* Expanded Confidentialised Unit Record File, DataLab.

Australian Bureau of Statistics (2016d) 2901.0 - *Census of Population and Housing: Census Dictionary, 2016*. Accessed 25/01/2021 at https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Chapter2402016

Australian Bureau of Statistics (2017a) *2016 Census QuickStats: All people, usual residents*. Accessed 26/08/2020 at https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/0

Australian Bureau of Statistics (2017b) Cultural diversity in Australia, 2016: 2016 census article. In *2071.0 - Census of Population and Housing: Reflecting Australia - Stories from the Census, 2016*. Accessed 09/01/2021 at https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/2071.0Main+Features1000122016?OpenDocument

Australian Bureau of Statistics (2018a) 2033.0.55.001 - *Technical Paper: Socio-Economic Indexes for Areas (SEIFA), 2016*. Accessed 21/10/2020 at https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012016?OpenDocument

Australian Bureau of Statistics (2018b) ABS Chinese New Year insights. Accessed 12/05/2020 at https://www.abs.gov.au/AUSSTATS/abs@.nsf/mediareleasesbytitle/D8CAE4F74B82D446CA258235000F2BDE?OpenDocument

Australian Bureau of Statistics. (2018c). *Australian Statistical Geography Standard (ASGS): Volume 5—Remoteness Structure, July 2016*. Retrieved 22/05/2020 from https://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.005

Australian Bureau of Statistics (2019a) *2037.0.30.001 - Microdata: Census of Population and Housing, 2016*. Accessed 07/10/2020 at https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/2037.0.30.001Main+Features52016?OpenDocument

Australian Bureau of Statistics (2019b) *Personal Income in Australia, 2011-12 to 2016-17*. Accessed 08/10/2020 at https://www.abs.gov.au/statistics/labour/earnings-and-work-hours/personal-income-australia/latest-release

Australian Bureau of Statistics (2020a) *6250.0.25.002 - Microdata: Characteristics of Recent Migrants, Australia*. Accessed 03/01/2021 at https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6250.0.25.002Main+Features1Australia

Australian Bureau of Statistics (2020b) *Migration, 2018-19*. Accessed 20/10/2020 at https://www.abs.gov.au/statistics/people/population/migration-australia/2018-19

Australian Bureau of Statistics (2020c) *Regional population, 2018-19*. Accessed 20/10/2020 at https://www.abs.gov.au/statistics/people/population/regional-population/2018-19

Australian Bureau of Statistics (2020d) *Characteristics of Recent Migrants, Australia*. Accessed 10/01/2021 at https://www.abs.gov.au/statistics/people/people-and-communities/characteristics-recent-migrants/latest-release#data-download

Bell, M. (1994). *Australians on move: Internal migration in Australia, 1981–1986* (Doctoral dissertation). University of Queensland, Brisbane, Australia. Retrieved 23/06/2020 from https://doi.org/10.14264/uql.2016.819

Bell, M. and Hugo, G. (2000). *Internal migration in Australia, 1991–1996: Overview and the overseas-born*. Canberra: Department of Immigration and Multicultural Affairs.

Bernard A. and Perales F. (2020) *Is Migration a Learned Behaviour? Understanding the Impact of Past Migration on Future Migration.* Working Paper No 2020/02, Queensland Centre for Population Research.

Biagi, B. Faggian, A. and McCann, P. (2011). Long and short distance migration in Italy: The role of economic, social and environmental characteristics. *Spatial Economic Analysis*, *6*(1), 111-131. doi: 10.1080/17421772.2010.540035

Bianucci, R., Charlier, P., Perciaccante, A., Lippi, D. & Appenzeller, O. (2017). The "Ulysses syndrome": An eponym identifies a psychosomatic disorder in modern migrants. *European Journal of Internal Medicine*, 41: 30-32. http://dx.doi.org/10.1016/j.ejim.2017.03.020

Blake, H.L., Mcleod, S., Verdon, S. and Fuller, G. (2018) The relationship between spoken English proficiency and participation in higher education, employment and income from two Australian censuses. *International Journal of Speech-Language Pathology*, *20*(2), 202-215.

Bloom, D.E. and Grenier, G. (1993) *Language, employment, and earnings in the United States: Spanish-English differentials from 1970 to 1990*. Working Paper No. 4584. Cambridge, MA: National Bureau of Economic Research.

Castles, S., Miller, M. J. and Haas, H. d. (2014). *The age of migration: International population movements in the modern world (Fifth Edition)*. London: Palgrave Macmillan.

Catney, G. and Finney, N. (2016). Minority internal migration in Europe: Key issues and contexts. In G. Catney (Ed.), *Minority internal migration in Europe* (pp. 1–13). London: Routledge. https://doi.org/10.4324/9781315595528

Chiou, B. (2017). Two-step migration: a comparison of Australia's and New Zealand's policy development between 1998 and 2010. *Asian and Pacific Migration Journal*, *26*(1), 84–107.

Clark, W.A.V. and Ware, J. (1997) Trends in residential integration by socioeconomic status in Southern California. *Urban Affairs Review*, *32*(6), 825-843.

Coleman, D. (2005) Facing the 21st century: New developments, continuing problems. In M. Macura, A.L. MacDonald and W. Haug (eds.) *The New Demographic Regime: Population Challenges and Policy Responses*, pp.11-44. New York and Geneva: United Nationals Economic Commission for Europe.

Coughlan, J. E. (2008). The changing spatial distribution and concentration of Australia's Chinese and Vietnamese communities: An analysis of 1986–2006 Australian population census data. *Journal of Population Research*, *25*(2), 161–182.

Culter, D.M., Glaeser, E.L. & Vigdor, J.L. (2008a). Is the melting pot still hot? Explaining the resurgence of immigrant segregation. *The Review of Economics and Statistics*, 90(3):478-497.

Culter, D.M., Glaeser, E.L. & Vigdor, J.L. (2008b). When are ghettos bad? Lessons from immigrant segregation in the United States. *Journal of Urban Economics*, 63:759-774.

Department of Home Affairs (2019) *Designated regional area postcodes*. Accessed 19/01/2021 at https://immi.homeaffairs.gov.au/visas/getting-a-visa/visa-listing/regional-sponsor-migration-scheme-187/regional-postcodes

Department of Home Affairs (2020a) *Citizenship test and interview*. Accessed 16/01/2021 at https://immi.homeaffairs.gov.au/citizenship/test-and-interview

Department of Home Affairs (2020b) *Become an Australian citizen (by descent): Your parent was an Australian citizen when you were born overseas*. Accessed 19/01/2021 at https://immi.homeaffairs.gov.au/citizenship/become-a-citizen/by-descent

Edgar, B. (2014). An intergenerational model of spatial assimilation in Sydney and Melbourne, Australia. *Journal of Ethnic and Migration Studies*, *40*(3), 363-383, doi:10.1080/1369183X.2013.830890

Ferguson, H. and Sherrell, H. (2019) *Overseas Students in Australian Higher Education: A Quick Guide*. Research Paper Series, 2018-19. Parliament of Australia. Accessed 16/01/2021 at https://parlinfo.aph.gov.au/parlInfo/download/library/prspub/6765126/upload_binary/6765126.pdf

Fix, M., Passel, J.S. and Sucher, K. (2003). *Immigrant Families and Workers*. Brief No.3. Urban Institute Immigration Studies Program. Accessed 06/01/2021 at https://www.urban.org/sites/default/files/publication/59051/310847-Trends-in-Naturalization.PDF

Forrest, J., Poulsen, M. and Johnston, R. (2006). A "multicultural model" of the spatial assimilation of ethnic minority groups in Australia's major immigrant-receiving cities. *Urban Geography*, *27*(5), 441-463. doi: 10.2747/0272-3638.27.5.441

Forrest, J., Poulsen, M. and Johnston, R. (2009). Temporary and disadvantaged? The economic and spatial assimilation of New Zealand Maori in Sydney. *Population, Space and Place*, *15,* 475-492.

Frey, W. H. and Liaw, K. L. (1999). Internal migration of foreign-born Latinos and Asians: Are they assimilating geographically? In K. Pandit and S. D. Withers (Eds.), *Migration and restructuring in the United States: A geographic perspective* (pp. 212–230). New York: Rowman and Littlefield.

Gordon, M.M. (1964). *Assimilation in America Life: the role of race, religion, and national origins*. New York: Oxford University Press.

Guan, Q. (2019). Measuring the spatial integration of the Chinese-born population in Australia, 1981–2016. *Journal of Population Research*, *36*(4), 319–346. https://doi.org/10.1007/s12546-019-09234-9

Guan Q. (2020). Resettlement of China-born immigrants in Australia: Age, duration of stay and interstate migration. *Population, Space and Place*, e2388. https://doi.org/10.1002/psp.2388

Hou, F. and Picot, G. (2020). The decline in the naturalization rate among recent immigrants in Canada: Policy changes and other possible explanations. *Migration Studies*, mnaa010. https://doi.org/10.1093/migration/mnaa010

Hugo, G. (2004). *A new paradigm of international migration: Implications for migration policy and planning in Australia*. (Information, Analysis and Advice for the Parliament Research Paper No. 10). Retrieved 12/05/2020 from https://www.aph.gov.au/binaries/library/pubs/rp/2003-04/04rp10.pdf

Hugo, G. (2008). Immigrant settlement outside of Australia's capital cities. *Population, Space and Place*, *14*, 553–571. https://doi.org/10.1002/psp.539

Hugo, G. (2011). Changing spatial patterns of immigrant settlement. In M. Clyne & J. Jupp (Eds.), *Multicultural and integration: A harmonious relationship* (pp. 1–40). Canberra: ANU Press.

Iceland, J., and Scopilliti, M. (2008). Immigrant residential segregation in US metropolitan areas, 1990–2000. *Demography*, 45(1), 79–94.

Jensen, L. and Chitose, Y. (1996). Today's second generation: Evidence from the 1990 Census. In A. Portes (ed.) *The New Second Generation*, pp.82-107. New York: Russell Sage Foundation.

Jupp, J. (2001). *The Australian people: An encyclopedia of the nation, its people and their origins (2nd ed.)*. Cambridge: Cambridge University Press.

Kalemba, S.V., Bernard, A., Charles-Edwards, E. and Corcoran, J. (2020) Decline in internal migration levels in Australia: Compositional or behavioural effect? *Population, Space and Place*, e2341. https://doi.org/10.1002/psp.2341

Khoo, S. E., Hugo, G. and McDonald, P. (2008). Which skilled temporary migrants become permanent residents and why? *International Migration Review*, 42(1), 193–226. https://doi.org/10.1111/j.1747-7379.2007.00118.x

Kritz, M. M. and Nogle, J. M. (1994). Nativity concentration and internal migration among the foreign-born. *Demography*, *31*(3), 509–524. http://doi.org/10.2307/2061755

Lichter, D. T., Parisi, D. and Ambinakudige, S. (2018). Multiscalar Segregation and Spatial Integration among Immigrants: A Cross-National Study of Europe. Working paper.

Lichter, D. T., Parisi, D. and Taquino, M. C. (2015). Toward a new macro-segregation? Decomposing segregation within and between metropolitan cities and suburbs. *American Sociological Review*, 80(4), 843–873.

Luk, W.E. (2009). Chinese ethnic settlements in Britain: Spatial meanings of an orderly distribution, 1981–2001, *Journal of Ethnic and Migration Studies*, *35*(4), 575-599, doi: 10.1080/13691830902765137

Massey, D.S. (1985) Ethnic residential segregation: A theoretical synthesis and empirical review. *Sociological and Social Research*, 69(3):315-350.

Massey, D.S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A. and Taylor, J. E. (1993) Theories of international migration: A review and appraisal. *Population and Development Review*, *19*(3):431-466.

Massey, D.S. and Denton, N.A. (1985) Spatial assimilation as a socioeconomic outcome. *American Sociological Review*, *50*(1):94-106.

National Academies of Sciences, Engineering, and Medicine. (2015). *The integration of immigrants into American society*. Washington, DC: The National Academies Press.

Newbold, B. (2007). Secondary migration of immigrants to Canada: An analysis of LSIC wave 1 data. *The Canadian Geographer*, *51*(1), 58–71. https://doi.org/10.1111/j.1541-0064.2007.00165.x

Park, R.E. (1950). *Race and culture: Essays in the sociology of contemporary man*. New York: The Free Press.

Parker, T. (2017). The DataLab of the Australian Bureau of Statistics. *The Australian Economic Review*, *50*(4): 478-483. doi.org/10.1111/1467-8462.12246

Parliament of Australia (2016) *New Zealanders in Australia: A Quick Guide*. Accessed 01/01/2021 at https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1617/Quick_Guides/NZAust

Penninx, R. (2005) Integration of migrants: Economic, social, cultural and political dimensions. In M. Macura, A.L. MacDonald and W. Haug (eds.) *The New Demographic Regime: Population Challenges and Policy Responses*, pp.137-152. New York and Geneva: United Nationals Economic Commission for Europe.

Phalet, K. and Swyngedouw, M. (2003). Measuring immigrant integration: The case of Belgium. *Studi Emigrazione / Migration Studies*, *XL*(152), 773-803.

Portes, A. and Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *The Annuals of the American Academy of Political and Social Science*, 530(1), 74-96.

Raymer, J., Shi, Y., Guan, Q., Baffour, B., and Wilson, T. (2018). The sources and diversity of immigrant population change in Australia, 1981–2011. *Demography*, *55*(5), 1777–1802. https://doi.org/10.1007/s13524-018-0704-5

Richards, E. (2008). *Destination Australia: Migration to Australia Since 1901*. Sydney: UNSW Press.

Reher, D. S. and Silvestre, J. (2009). Internal migration patterns of foreign-born immigrants in a country of recent mass immigration: Evidence from new micro data for Spain. *International Migration Review*, *43*(4), 815–849. https://doi.org/10.1111/j.1747-7379.2009.00785.x

Roshid M. M., & Chowdhury, R. (2013). English language proficiency and employment: A case study of Bangladeshi graduates in Australian employment market. *Mevlana International Journal of Education*, *3*(1), 68-81.

Smolicz, J. J. (1995). The emergence of Australia as a multicultural nation: An international perspective. *Journal of Intercultural Studies*, *16*, 2–24.

South, S.J., Crowder, K. and Chavez, E. (2005). Migration and spatial assimilation among US Latinos: Classical versus segmented trajectories. *Demography*, 42(3), 497-521.

Thomas, M. Gillespie, B. and Lomax, N. (2019). Variations in migration motives over distance. *Demographic Research*, *40*, 1097-1110.

United Nations. (2019a). *International Migrant Stock 2019*. Department of Economic and Social Affairs, Population Division (United Nations database, POP/DB/MIG/Stock/Rev.2019).

United Nations. (2019b). *World Population Prospects 2019, Online Edition*. Rev. 1. Department of Economic and Social Affairs, Population Division.

Wang, S., Corcoran, J., Liu, Y. and Sigler, T. (2018). Understanding 'segmented assimilation' in Australian cities: Modelling the residential choices of mainland China-, Hong Kong- and Taiwan-born migrants. *Applied Geography*, 99:140-153. https://doi.org/10.1016/j.apgeog.2018.08.004

Zhou, M. (1997). Segmented assimilation: Issues, controversies, and recent research on the new second generation. *International Migration Review*, *31*(4), 975-1008.