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IZA DP No. 12381

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Mutlu Yuksel
Dalhousie University and IZA

Mevlude Akbulut-Yuksel
Dalhousie University and IZA

Cahit Guven
Deakin University

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IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Do English Skills Affect Muslim Immigrants' Economic and Social Integration Differentially?

This paper estimates the returns to English-speaking fluency on the socioeconomic outcomes of childhood immigrants. We further investigate whether Muslim childhood immigrants face additional hurdles in economic and social integration into the host country. Motivated by the critical age hypothesis, we identify the causal effects of English skills on socioeconomic outcomes by exploring the differences in the country of origin and age at arrival across childhood immigrants. We first document that all childhood immigrants who migrate from non-English-speaking countries at a younger age attain higher levels of English skills. We also find that acquiring better English-language skills improves the educational attainment and labor and marriage market prospects of non-Muslim childhood immigrants significantly and increases their participation in volunteer work. However, our results show that while a good command of English enhances the educational attainments of Muslim childhood immigrants, it shows no positive return in either the labor or marriage markets. Our results also show that progress in English fails to improve Muslim childhood immigrants' engagement in voluntary work, meaning that the opportunity for social cohesion is missed.

JEL Classification: J12, J13, J24, J31, J61, J62

Keywords: immigration, english proficiency, socioeconomic outcomes, Muslims

Corresponding author:
Mutlu Yuksel
Department of Economics
Dalhousie University
6214 University Avenue
Halifax, NS B3H 4R2
USA

E-mail: mutlu@dal.ca

1. Introduction

This paper examines the causal effects of English proficiency on social cohesion and the social and economic integration of immigrants in general and Muslim immigrants in particular. More specifically, we estimate the returns to English fluency on immigrants' educational attainments, labor and marriage market outcomes, partner characteristics, ethnic enclave residence, and civic engagement in Australia. We employ the "critical age" hypothesis to devise an instrument for English proficiency. This instrument is then further extended by utilizing the newly available data on the linguistic distance between the languages of the source countries and English, to tackle the importance of the complementarity between the languages spoken in the origin and host countries for the integration of immigrants. This paper is also the first to estimate the dynamic aspects of language acquisition by investigating the association between language skills acquired early in life and improvements later in life.

Australia has historically been and continues to be a migrant nation. More than a quarter of its current population was born overseas. Similar to other Western countries, however, the past few decades have seen a shift in the composition of immigrants to Australia. In particular, recent years have seen an increased influx of immigrants from non-English-speaking countries in Africa and Asia, as well as from 100 different predominantly Muslim countries.[1] This rich diversity provides a perfect setting for investigating the intertwining effects of language and religion on economic and social integration of all immigrants as well as Muslim immigrants. We conduct the empirical analysis using the recently released Australian Longitudinal Census Data 2006-2011. Critically for the purpose of this paper, the Australian Census asks respondents their religion, data

[1] In the online appendix, we provide a full list of countries by number of observations higher or lower than a threshold. Unfortunately, we cannot provide the full distributional table due to the Australian Bureau of Statistics (ABS) confidentiality regulations.

that are not available in the censuses of other host countries. Hence the integration of the Muslim immigrants has been a highly debated issue in many host-countries; our analysis could also inform other Western countries on the experiences of Muslim immigrants and their integration.

The major challenge in estimating the causal effect of English skills on economic and social outcomes is the endogeneity of language proficiency. On the one hand, omitted variables such as ability, motivation and cultural background of the childhood immigrants could influence both the language acquisition and the socioeconomic outcomes of the immigrants, leading to an overestimation of the true impact of language skills. On the other hand, given the self-reporting nature of English skills, as was shown by Bleakley and Chin (2004), Dustmann, and van Soest (2001), measurement errors might be present in the English proficiency measure, causing the OLS estimates to be downward biased. Another challenge is that of reverse causality, where better education, labor and marriage market outcomes could, in turn, improve immigrants' proficiency in English. Thus, the direction of the bias is not clear a priori.

We address these potential identification concerns by employing a well-established instrument for English proficiency that was introduced by Bleakley and Chin (2004) and motivated by the language acquisition literature. As has been shown in earlier studies in the psychobiological literature, childhood immigrants who arrive in the host country after puberty have a harder time acquiring the language of the host country than their younger counterparts, due to the sharp reduction in sound production abilities (Lenneberg, 1967; Newport, 2002). Figure 1a plots the English proficiency of childhood immigrants by their age at migration and provides strong support for the "critical age" hypothesis in Australia. Using the critical age hypothesis, we explore the differences in the country of origin and age at arrival across childhood immigrants to identify the causal effects of English skills on socioeconomic outcomes and social cohesion. We extend this

identification strategy further by allowing for the heterogeneity in English acquisition across childhood immigrants from different countries of origin through using a continuous measure of the language distance between language spoken in the sending country and English.

We begin by demonstrating that all childhood immigrants who migrate to Australia from non-English-speaking countries at younger ages attain higher levels of English skills than their older counterparts. We also find that acquiring better English-language skills improves the educational attainments and labor and marriage market prospects of childhood immigrants significantly, and increases their participation in voluntary work, which promotes social belonging. However, when considering Muslim childhood immigrants, our results show that, while a good command of English enhances their educational attainments, it produces no positive return in the labor or marriage markets. We also find that progress in English fails to improve their participation in voluntary work. Our results remain robust to a battery of validity checks including using various measures of English proficiency and language distance, dropping childhood immigrants from UK and New Zealand, and accounting for measurement error in English skills and parental characteristics if they are reported.

The contribution of our study to the literature is multifold. First, to the best of our knowledge, this is the first study in the literature to causally identify the association between English language proficiency and the economic and social integration and civic involvement of Muslim immigrants. We further extend the critical age instrument for a battery of socioeconomic outcomes and test the robustness of our results by utilizing a continuous measure of linguistic distance. Second, our study is the first to demonstrate that language can affect not only immigrants' educational, labor and marriage market outcomes, but also their volunteer activities, transportation choices, and self-employment. Volunteer activity is perceived as a good proxy for civic participation and social trust

and is one of the most frequently used indicators of social cohesion (Demireva, 2011; Putnam, 2004, 2000). In addition, there has been a few studies examining the transport choice of immigrants. These studies are mostly carried out in the US and find that there are significant differences between immigrants and US-born residents in terms of their transport choices such as using public transport, own cars and sharing own car with others (Blumenberg & Shiki, 2007, 2008; Tal & Handy, 2010; Blumenberg, 2008). An important observation is that transport choice is an important variable which could be correlated with employment opportunities and is an indicator of resource sharing. Third, we are the first in the literature to utilize the Australian Longitudinal Census Data (the 2006 and 2011 rounds). The massive structure of the longitudinal census allows us to implement a 2SLS procedure, which substantially improves the precision of our IV estimates relative to the smaller datasets used in the previous studies. The longitudinal nature of the census also allows us to follow the same person over time and therefore different from previous studies we are able to estimate the dynamic aspects of language acquisition.

The remainder of the paper is organized as follows. Section 2 describes the data used in our analysis and presents the descriptive statistics. Section 3 lays out the estimation framework. Section 4 presents the main results and discusses the implications of our finding. Section 5 performs some robustness checks. Section 6 concludes.

2. Related Literature

Social and economic integration and the promotion of social cohesion among immigrants remain the ultimate pillars of immigration policies in many host countries around the globe. Previous studies have demonstrated that a good command of the language of the host country is important in accentuating the adaptation of immigrants both economically and socially, and in

promoting their belonging to and engagement in the society in general (Bleakley and Chin, 2004, 2010; Antecol, Cobb-Clark and Trejo, 2003; Dustmann and van Soest, 2001; Chiswick and Miller, 1995; Borjas, 1990). Recent studies have also documented that the linguistic distance between the language spoken in the sending and receiving countries strongly affects the international migration flows as well as the language acquisition in the host country (Adsera and Pytlikova, 2015; Isphording and Otten, 2014; Belot and Ederveen, 2012; Chiswick and Miller, 2005). Thus, over the last decade, many immigrant-receiving countries have instituted immigration policies that are contingent on the acquisition of the host country's language before or upon arrival in the prospective host country. For instance, the United Kingdom passed a new law, effective October 2016, stipulating that non-EU immigrants with a spousal visa will have to demonstrate that their English language skills have improved after two-and-a-half years or face deportation. Similarly, the Australian government offered a new proposal in April 2017 which demands stringent English requirements to be awarded an Australian citizenship. Similar language-contingent policies have been proposed or debated in public policy spheres in various other immigrant-receiving countries in North America, and Continental Europe.

In addition to increasing numbers of immigrants whose native tongue differs from the language spoken in the host country, many Western nations have also experienced a significant surge in the number of Muslim immigrants over the past decade. Previous research suggests that Muslim immigrants' experiences of economic and social integration differ from other immigrant groups in several aspects. For instance, it has been found that Muslims are less likely to be employed than non-Muslims in Western Europe, while individual-level factors explain less than half of the Muslim employment gap (Connor and Koenig, 2015). Studies also have shown that Muslim immigrants differ from natives and other immigrant groups in the expression of their

religiosity, and their attitudes towards women and girls (De Hoon, and Van Tubergen, 2014; Mitrut, and Wolff, 2014; Adida et al., 2014). The recent events and violence in Europe and the United States have raised the doubts and worries about the ability and willingness of Muslim immigrants and their offspring to integrate into Western society. Maxwell and Bleich (2014), on the other hand, analyse the determinants of French identity among immigrants in France and find that the most important factors contributing to feeling French is being born in France, having a French citizenship and speaking fluent French not the immigrants' religiosity. Therefore, understanding the intertwining effects of language and religion, especially in the integration of Muslim immigrants, is imperative to devise public policies to actuate the social and economic integration and social cohesion of these immigrant groups.

Our study contributes to the literature estimating the returns to English proficiency on the education, labor market and social outcomes of childhood immigrants by using the critical age instrument. Akbulut et al. (2011) and Bleakley and Chin (2004, 2010) find that better English skills significantly improve the education, earnings, residential location, marriage, and fertility outcomes of childhood immigrants in the United States. Yao and van Ours (2015) provide similar evidence showing that proficiency in Dutch contributes positively to the hourly wages of female childhood immigrants in Netherlands; however, it has no effect on the labor market outcomes of male childhood immigrants. Using the pooled cross section of HILDA data, Guven and Islam (2015) show English proficiency to have a significant positive effect on the wages, promotions, and health of the childhood immigrants in Australia. On the other hand, Clarke and Isphording (2017) utilize information on linguistic distance measure and the same HILDA data find that better English proficiency improves the physical health of the same childhood immigrants. However, both studies have limited number of observations on the childhood immigrants, especially for the

implementation of the 2SLS procedure.[2] Moreover, the linguistic distance likely matters not only for the immigrant's health but also for their economic and social integration outcomes.

3. Data and Descriptive Statistics

We conduct our empirical analysis using the 2006 and 2011 Australian Census Longitudinal Data. The Longitudinal Census is a confidential dataset, which encompasses a random 5% sample of the Australian population and provides a broad range of information on individual and household characteristics, including educational attainments, language, ancestry, religion, and labor market outcomes. The Longitudinal Census is also the first census data to report the age on arrival in Australia in single digits rather than an interval, which is imperative for the identification strategy that we discuss in the next section. A detailed description of the variables used in the empirical analysis is provided in Appendix Table 1.

The strength of the Australian census is multifold. First, critically for the purpose of this paper, the Australian Census asks respondents their religion[3], unlike the censuses of most host countries. This unique information enables us to assess how Muslim childhood immigrants from English and non-English speaking countries of origin fare in the Australian labor and marriage markets, and whether religion and language serve as catalysts in the integration of immigrants. Second, the Australian Census provides detailed information on individuals' participation in volunteer work, their form of transportation to work, whether they hold a public or private job, and their location choice (at the zip code level). In particular, participation in volunteer work and the use of public transport could be important for social cohesion, inclusion and belonging for the

[2] For instance, analysis presented in Clarke and Isphording (2017) is based on 278 non-English speaking immigrants and 569 native speakers in HILDA data, which yield 1286 person-year observations for immigrants with NES background and 4420 person-year observations with English as mother tongue.

[3] See Appendix Table 9 for the proportion of immigrants by religion in the regression sample.

members of society. Therefore, the availability of such data allows us to assess how an improvement in English skills contributes to social cohesion among immigrants, and whether such effects vary depending on an immigrant's religion.

Another unique feature of the 2006 and 2011 Censuses is their panel structure.[4] The success in linking these two datasets was quite high, with over 90% of all records in the two censuses being matched in the linkage process. These high retention rates enable us to test the robustness of our results to the potential measurement of English proficiency by focusing only on immigrants who reported the same level of English skills in both censuses. Moreover, we can quantify whether immigrants experience improvements in their language proficiency over time as an adult, which is critical for the public funding of adult English classes. Finally, the massive structure of the longitudinal census allows us to implement a 2SLS procedure, which substantially improves the precision of our IV estimates relative to the smaller datasets used by Guven and Islam (2015) and Clarke and Isphording (2017). It further allows us to investigate the sources of heterogeneity across different immigrant groups based on religion which was not possible with other datasets.

Similar to previous studies of language proficiency, we utilize the categorical English proficiency variable reported in the Census as a measure of English skills among childhood immigrants. The Census asked all individuals, regardless of their country of birth, whether a language other than English was also spoken at home. If a person reported speaking a language other than English at home, they were then asked to report their English proficiency, with the potential answers of "not at all"; "not well"; "well"; and "very well."[5] This categorical measure of

[4] The Longitudinal Census uses data from the Census of Population and Housing to build a longitudinal picture of Australian society. In this first release, a random 5% sample from the 2006 Census was combined with records from the 2011 Census using data linkage techniques without names or addresses. http://www.abs.gov.au/websitedbs/censushome.nsf/home/acld?opendocument&navpos=267.

[5] The answers to this question are coded as zero for "not at all," to three for "very well."

English serves as our main explanatory variable in this analysis. We also present results using indicators for speaking English at home, speaking English very well, and speaking English well or very well. As robustness, we restrict our sample further to immigrants who reported the same levels of English skills in 2006 and 2011. Our results retain their economic and statistical significance when using these alternative measures of English ability and the restricted sample.

As is described in more detail in the next section, we divide source countries into three groups. The first group consists of English-speaking countries where English is the only official language. The second group consists of non-English-speaking (NES) countries, where there is only one official language, and it is not English. Lastly, the third group consists of countries where English is one of the official languages. Hence, when considering immigrants from the third group of countries, it is not entirely clear how much English they were exposed to before arriving Australia; thus, our analysis focuses only on childhood immigrants from the first two groups.[6] Similar to previous studies, we assume that childhood immigrants from English-speaking countries have an excellent command of English, while childhood immigrants from non-English speaking countries have to acquire English upon their arrival.

In addition to the aforementioned categorical measure of English skills, we also extend our analysis by utilizing the newly available data on the linguistic distance between the languages of the sending and receiving countries. The language of the sending country is determined by the immigrant's reported country of birth while the language of the receiving country is Australian English.[7] Information on linguistic distance allows us to construct a continuous measure of the language acquisition and explore the importance of the complementarity between the languages

[6] Indeed, 70% of respondents in the third group of countries report speaking a language other than English at home, and the results are similar when we include this group in NES (see, column (3) of Appendix Table 5).

[7] For detailed information on language distance measure, see Melitz and Toubal (2014). Moreover, Linguistic distance data can be obtained from http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=19.

spoken in the source and host countries for our understanding of the socioeconomic integration of childhood immigrants. There is a sizable variation in the distance to English variable in the data; therefore, a particular sending country or a region does not drive our results.

Our analysis focuses on immigrants who arrived between the ages of 0 and 17, and currently live in Australia. This is motivated by the fact that the immigration decision in such cases is determined not by the childhood immigrants themselves, but by their parents or relatives.[8] We further control for parental characteristics for the childhood immigrants who reside in the same household with their parents to account for the potential selection bias. When considering social, partner and civic involvement outcomes, our sample includes childhood migrants who have lived in Australia for between 11 and 55 years. On the other hand, when the outcomes of interest are labor market outcomes, we restrict our sample to childhood immigrants who are at their prime (i.e., aged 25–38) at the time of the survey, to avoid potential confounding effects of continuing education, retirement and mortality. This leaves us with childhood immigrants who have been in Australia for at least 16 years but no more than 30 years (from age 18 to 72), to ensure that we allow them enough time for economic and social integration.[9]

Table 1 presents the descriptive statistics for the outcome and main control variables for all immigrants, immigrants with non-Australian parents and Muslim immigrants, respectively. We also present the averages for the native Australian population, for comparison. Table 1 reveals some stark differences between Muslim childhood immigrants and the rest of the childhood immigrant sample. Even though Muslim childhood immigrants arrive in Australia as young as other childhood immigrants, they achieve lower levels of English skills as adults. They also

[8] We provide formal evidence of the plausibility of this assumption in the robustness checks section by restricting our sample to childhood immigrants who migrated between 6 and 15 years of age so that childhood immigrants in the affected and control groups are all school-aged at the time of the arrival.

[9] The results are similar when the same age restriction is applied to other outcome variables.

perform worse than other childhood immigrants both at school and in the labor market. They are less likely to finish high school or have a college degree, earn lower hourly wages and are less likely to hold a public sector job. Similar differences are also seen in the social cohesion and civic participation outcomes, with Muslim childhood immigrants being about half as likely to engage in volunteer work as their non-Muslim counterparts.[10] We also carry out formal t-tests by comparing the means of variables (presented in summary statistics) for Muslims to non-Muslims in the full sample of immigrants, NES country of birth sample and ES country of birth sample (Appendix Table 10). The comparisons show us that Muslims appear to be a significantly different group than other immigrants. In other words, Muslim immigrants are a different group compared to immigrants from ES and NES countries.

4. Empirical Strategy

This section describes our strategy for identifying the causal effect of English proficiency on economic and social outcomes. This difference-in-differences type strategy exploits the plausibly exogenous variation in age-at-arrival and country of birth among childhood immigrants who migrated before the age of 18. Before describing our 2SLS estimation strategy, we first present the OLS specification that relates childhood immigrants' English skills to their socioeconomic outcomes. In particular, we begin by estimating the following regression for childhood immigrant *i* born in country *c* and arriving in Australia at age *a*:

$$Y_{ica} = \alpha + \beta\, Eng_{ica} + \theta X_{ica} + \delta_a + \gamma_c + \varepsilon_{ica} \qquad (1)$$

[10] We also present means of selected variables by country of birth and age-at-migration in the Appendix Table 2.

where Y_{ica} is the outcome of interest and Eng_{ica} is a categorical English-fluency measure which varies between zero (the lowest) and 3 (the highest). X_{ica} controls for individual characteristics such as gender and age at the time of the survey. δ_a are age at arrival fixed effects accounting for the age-specific aspects of economic and social integration for all immigrants. γ_c represents country-of-birth dummies, which control for potential economic and cultural differences across sending countries common to all childhood immigrants with the same country of origin. ε_{ija} denotes the error term.

The aforementioned OLS specification fails to provide the causal effects of English fluency on immigrants' socioeconomic outcomes due to omitted variables and the unobserved heterogeneity among individuals in general captured in the error term. In addition, there may be measurement error in the English proficiency measure, given the self-reporting nature of English skills; if such is the case, the OLS estimates will be biased downward.[11] We address these potential identification concerns by employing an instrument for English skills that was introduced by Bleakley and Chin (2004). Specifically, we interact being very young (a binary indicator for being eleven years of age or younger) at arrival and being born in a non-English speaking country and use this as an instrument for the English skills of childhood immigrants. In particular, we estimate the following first-stage equation:

[11] Another potential concern relates to the possibility of non-classical measurement in the English proficiency engendered by its ordinal nature. Hence English skills variable varies between 0 and 3, this concern suggests that childhood immigrant with the lowest English proficiency can only deviate upwards, and childhood immigrants with the highest English skills to downwards, inducing the measurement error in English proficiency to be negatively correlated with the "true" language proficiency. Using the Australian version of the Adult Literacy and Life Skills Survey (ALLS), which provides information on both self-reported and objective measures of English proficiency, Clarke and Isphording (2017) quantify the extent of the aforementioned non-classical measurement error in English proficiency in Australia. They conclude that this type of misspecification in English proficiency is not the driver of the estimated IV results. Thus, this type of bias has limited, if any, implications for our results discussed in the next section.

$$Eng_{ica} = \alpha + \beta\,(VeryYoung_a * NES_c) + \theta X_{ica} + \delta_a + \gamma_c + \varepsilon_{ica} \qquad (2)$$

where $VeryYoung_a$ is a dummy variable for arriving young and NES_c is an indicator for childhood immigrants who came from non-English-speaking countries. We also control for a full set of age at migration dummies, δ_a, and a full set of country-of-birth dummies, γ_c. In this setting, childhood immigrants of the same age at arrival but from an English-speaking country serve as a control group to the same cohorts of childhood migrants from a non-English-speaking country. Using this instrument, we estimate the local average treatment effect (LATE) in the second stage. The standard errors are clustered by country of birth.

In line with the findings of Bleakley and Chin (2004), $VeryYoung_a$ is chosen to be eleven years of age or younger at the arrival for the main specifications. However, as the exact critical age is ambiguous, we provide the estimates using different cut-offs of the critical age, such as 9 or 12, a kinked measure which takes a value of 0 until age 11 and increases monotonically thereafter, and with age-at-migration dummies.[12] We further test the robustness of our results by replacing the non-English speaking country dummy with the linguistics distance measure we describe in the data section, dropping immigrants from UK and New Zealand and focusing only on immigrants who reported the same level of English in both censuses.

5. Empirical Results

5.1 Age-at-Arrival and English Proficiency (First-stage)

Motivated by the language acquisition literature, our model assumes that age-at-arrival determines the English-speaking ability of childhood immigrants from non-English-speaking

[12] Results with alternative age at arrival cut-offs are presented in Appendix Table 3.

countries, with later-arrivers being at a disadvantage. We first illustrate graphically whether this assumption is supported by the data. Figure 1a presents the mean English-ability scores by age at migration for childhood immigrants from non-English-speaking countries who migrated to Australia between 0 and 17 years of age. Evidence presented in Figure 1a supports the language acquisition literature and demonstrates that younger arrivers do indeed have better English skills than later arrivers. We see from Figure 1a that English proficiency is relatively flat until arrival age 11 and declines sharply thereafter.[13] One of our focuses is on Muslim childhood immigrants; Figure 1b investigates whether a similar pattern in language acquisition also emerges for this group. The figure presents similar associations for the Muslim immigrants, suggesting that the critical age for language acquisition does not differ by immigrants' religion.

Table 2 provides further formal evidence on the first-stage, where we estimate the 2SLS regressions with age-at-arrival and country-of-birth fixed effects controls as we describe in the estimation strategy section. Panel A demonstrates the estimates for all immigrants. Panel B excludes childhood immigrants with at least one parent born in Australia, even though childhood immigrants with an Australian parent constitute only a small fraction of our sample. Nonetheless, we test the robustness of our results by excluding them. Lastly, Panel C focuses on Muslim immigrants.

We use three different measures of English ability to ensure that the results are not sensitive to different categorizations of English skills. First, we present results using a categorical measure of English where individuals' English abilities vary on a scale of 0–3, as reported in column (1). We find robust and economically significant first-stage estimates in column (1), which demonstrates that childhood immigrants who arrived in Australia from NES countries before the

[13] We continue to observe the same relation between English proficiency and age at arrival when we use 3-year averages of the English ability.

age of 12 attain English skills that are 0.36 points higher than those of their later-arrival counterparts coming from NES countries. These results remain virtually unchanged when we restrict our sample to childhood immigrants with non-Australian parents and Muslim childhood immigrants in Panels B and C, respectively.

Column (2) uses a dummy variable for speaking English very well. In all panels, the point estimates for speaking English very well are similar to the ordinal English-ability measure presented in column (1), implying that most of the action is indeed due to speaking English very well. The last column explores an alternative language question in the Census, which asks the respondent whether English or some other language is spoken at home.[14]We find that earlier-arriver childhood immigrants from non-English speaking countries are around 15% more likely to report speaking only English at home than their later-arriver counterparts. These estimates are similar across all panels, providing evidence supporting the critical age hypothesis across the board.

5.2 Schooling Outcomes

We begin our empirical analysis with an examination of the association between English proficiency and schooling outcomes. Least squares and instrumental variable estimates for the sample of immigrants who arrived before the age of 18 are shown in Table 3. We restrict our analysis to immigrants with non-Australian-born parents in columns (3) and (4) and Muslim childhood immigrants in columns (5) and (6), respectively. Since grade 10 is the earliest that children can officially drop out of school, though the minimum school leaving age differs across states in Australia, we generated separate dummy variables for having completed 10, 11, 12 or

[14] The number of observations differ in this specification because only immigrants who indicated speaking a language other than English at home are asked the question on English ability.

more years of schooling.[15] We also allow for non-linearity in the schooling variable, to assess the impact of English skills on getting a degree. Each row in Table 3 presents an estimation result for a separate schooling outcome.

We find that English ability significantly increases the probability of completing 10, 11 or 12 years of education, which corresponds to high school completion. Moreover, we find that English skills also improve the likelihood of college and graduate school completion.[16] The results remain statistically and quantitatively similar when we exclude immigrants with Australian-born parents from our sample, as is shown in columns (3) and (4). More specifically, our OLS results suggest that a one-unit increase in English-speaking ability is associated with a 21% increase in the likelihood of finishing a high school, while Muslim immigrants attain the highest return, at 25%.

When English proficiency is instrumented using exogenous variation provided by the "critical age hypothesis," the coefficient on English proficiency increases slightly for all immigrant groups but retains its statistical and economic significance. The IV results also suggest that the associated returns on English ability for completing 10, 11 and 12 years of schooling are almost twice as large for Muslim childhood immigrants than for the rest of the sample. In fact, with the exception of college completion, both the OLS and IV estimates of the returns to English skills are greater for Muslim childhood immigrants than for the other childhood immigrant groups.[17] These findings suggest that language acquisition plays a significant role in facilitating Muslim immigrants' integration to the host country, with a good command of English being imperative for the improvement of schooling outcomes of Muslim immigrants in particular.

[15] The average minimum school dropout grade across states in Australia is 10th grade.

[16] Appendix Table 11 further shows that these findings hold for both male and female childhood immigrants.

[17] One potential explanation for this finding is that proportion of Muslims who have college or higher degrees are quite low compared to overall immigrants.

Finally, consistent with the previous studies estimating the returns to English skills on schooling, labor market and health outcomes (Bleakley and Chin, 2004; Dustmann and van Soest, 2001; Clarke and Isphording, 2017), the comparison of the OLS and the IV results suggest that the IV estimates are larger than the OLS estimates. The IV coefficients are only slightly higher than the OLS estimates for the full sample of immigrants and for the sample with no Australian parents. However, the IV coefficients are twice higher than the OLS estimates for the Muslim sample. Differences in the weighting functions underlying the OLS and IV estimates and measurement error in the language skills measure have been identified in the previous literature to explain this result (Bleakley and Chin, 2004). The endogeneity of language skills could be attributable to the exclusion of cultural factors such as motivation, rather than being entirely the result of innate ability. That is, Muslim migrants from NES countries may have higher motivation levels and other cultural characteristics that make them more productive in the labor market than Muslim migrants from ES countries. If this is the case, the IV estimates will be higher than OLS estimates. Another explanation is endogeneity due to innate ability. That is, Muslim migrants from NES countries could be more able than Muslim migrants from ES countries for our regression sample. This is possible because unlike the United States, skilled migration makes up a big proportion of permanent migration visas in Australia while the majority of skilled immigrants come from NES countries.

5.3 Economic and Social Integration Outcomes

Since language procures individuals' access to resources, opportunities, and networks, English proficiency is indeed as much a form of human capital as education or work experience (Bleakley and Chin, 2004, 2010). Panel A of Table 4 begins by investigating whether English-

speaking abilities are associated with higher earnings and better labor market outcomes in general. The first four columns of Table 4 demonstrate that there are significant benefits of English proficiency in the labor market, especially for non-Muslim immigrants. If individuals' English proficiency progresses from being good to being very good, they are on average six percentage points less likely to be unemployed[18] and obtain a 36% increase in their wages in general, and a 38% increase in wages if they work in the private sector.[19] Likewise, such an improvement in English knowledge generates a 0.9-point increase in the occupation skill index, which varies between scales of 1-5. Interestingly, there is only a significant return to English skills for private sector workers (not public sector workers), but this cannot be explained by selection into the private sector, as English proficiency does not influence public versus private sector employment.[20] Altogether, our findings suggest that improving English skills does indeed encourage immigrants, especially male immigrants to take an active role in the labor market, thus facilitating their economic integration. Perhaps a proficiency in English allows immigrants to integrate into the local labor market better, thus increasing their outside opportunities, which helps them to move away from riskier and more unstable jobs.

On the other hand, a comparison of columns (2) and (6) indicates that the non-Muslim sample is driving these positive labor market effects. In contrast to schooling outcomes, better English skills fail to improve the labor market outcomes of Muslim childhood immigrants. Even the OLS estimates of the effects of English ability on hourly wages and other labor market outcomes are

[18] We note that the employed dummy would be a mirror image of unemployed dummy, suggesting that better English proficiency would improve the likelihood of being employed among childhood immigrants in our sample.

[19] We note that any unit change in English proficiency (i.e., going from 1-2 or 2-3) can be used to interpret the point estimates. However, the raw data illustrates that the majority of the immigrants indeed move from the score of 2 to 3 in English proficiency; we therefore use the change from 2 to 3 for the interpretation. Unemployed variable takes the value 1 if a person is unemployed and 0 if employed.

[20] Appendix Table 11 shows that mainly male childhood immigrants drive these positive labor market effects.

statistically insignificant. Our results therefore point to a significant degree of heterogeneity in labor market returns to English skills. It is possible that a smaller fraction of Muslim childhood immigrants is active in the labor market or seeking jobs; thus, we end up with a smaller number of observations when analyzing labor market outcomes (See Appendix Table 10). Alternatively, Muslim immigrants may be more likely to benefit from informal networks, thus decreasing the role of English as means of communication.

Panel B now turns to the estimation of whether a progress in English skills contributes to the immigrants' social integration, which is just as important as their economic integration, since it paves the way for social cohesion, inclusion and a feeling of belonging for the members of society (Handy and Greenspan, 2009; Woolley, 1998). Social cohesion is viewed as either social capital maintenance or another method of creating solidarity and equality of access. Measures of social cohesion include memberships in networks, social solidarities, memberships in clubs/associations, volunteer work, social trust, social order, shared values, civic participation, and place attachment (Demireva and McNeil, 2011; Vigdor, 2004). It has also been found that there are significant differences between migrants and non-migrants regarding commuting choices, which could affect employment opportunities, is an indicator of resource sharing, and could provide valuable insights into individuals' integration. Our data allow us to investigate social cohesion outcomes such as participation in voluntary work, ethnic enclave residence and the use of public transportation in an individual's work commute. However, we also acknowledge that there are other pathways for social cohesion and inclusion than we are able to analyze in this paper. Nevertheless, our study is the first in the literature to inform us on the association between English proficiency and several indicators of social cohesion such as voluntary work and means of transportation.

Figure 1c first illustrates the 3-year averages for the engaging in volunteer work for childhood immigrants from English-speaking and non-English-speaking countries by age at migration. Similar to previous figures on English ability, we see a sharp reduction in volunteer work activity for childhood immigrants who had arrived Australia after the age of 11.[21] More formal evidence on social integration presented in Panel B of Table 4[22] suggests that better English skills augment a participation in volunteer work and increase the use of public transportation in the work commute.[23] The 2SLS coefficients demonstrate that a point increase in English proficiency increases both voluntary work and the use of public transportation, by 9% and 13%, respectively.[24]

Interestingly, when we focus exclusively on Muslim immigrants in columns (5) and (6), we find that proficiency in English seems to be unrelated to Muslim immigrants' residential location choice, regardless of how immigrant enclaves are defined. On the other hand, having better English skills increases their use of public transportation in their work commute, while leading to lower participation in voluntary work. This striking effect of English skills on volunteer work suggests that immigrants from Muslim countries face additional hurdles in their social integration into Australia. Such a limited participation in volunteerism impedes the social cohesion of Muslim immigrants significantly, limiting their opportunities to contribute and become an integral part of their local community.[25] As a result, our findings imply that improvements in English ability do not seem to foster the economic and social integration of Muslim immigrants, even though better

[21] Figures remain similar when we split the sample by gender.

[22] Appendix Table 11 shows that these results are similar across male and female childhood immigrants.

[23] Unreported estimates reveal that a positive and significant effect of English skills on public transport use remains when we control for the number of vehicles, home ownership, household income, occupational prestige, and zip code fixed effects, and is similar across most religious groups.

[24] We also find that male immigrants with lower English skills, in particular, prefer to live in enclaves that encapsulate people who have the same country of birth, but not people who observe the same religion, as is summarized in Appendix Table 11.

[25] Unreported estimates find that better English ability increases voluntary work for Atheists, Buddhists and Anglicans but decreases the participation in voluntary work for Eastern Orthodox and has no effect for Presbyterians and Catholics.

English skills enhance their schooling outcomes. Thus, our findings call for public policies that are designed specifically to aid in the transfer of the gains from schooling to the labor market and social outcomes among Muslim immigrants.

5.4 Family Structure and Partner Characteristics

As has been shown in the previous tables, English-speaking ability substantially enhances both the schooling and labor market outcomes of all childhood immigrants and the schooling outcomes of Muslim childhood immigrants. Table 5 indicates that their marriage and partner outcomes are also affected strongly by their English proficiency. A better command of English is associated with a reduction in the probability of currently being married. These changes in family structure are also reinforced by the fact that a greater proficiency in English is associated with fewer marriages. These findings provide support for the hypothesis that proficiency in English augments immigrants' bargaining power by increasing both outside opportunities and their expectations from the spouse. Moreover, our results show that better English skills lead to lower fertility rates, especially among female childhood immigrants, implying integration into native norms regarding fertility behaviors.

Using childhood immigrants who are currently married, we next examine the characteristics of the spouses that childhood immigrants marry. We see that a one-unit increase in English fluency is associated with a 0.6–0.8-point increase in the spouse's English-speaking ability, regardless of the gender of the immigrants. Further, one could argue that individuals are likely to meet their future mates during their school years, meaning that they are more apt to marry someone of similar educational attainments. We do indeed find that there is a great deal of assortative mating regarding years of schooling and occupational skills among both male and female childhood immigrants. On average, an additional unit of English-speaking ability is associated with approximately a 20-

percentage point increase in the likelihood of the spouse having completed high school or more, and 0.9 points increase in the spouse's occupation skill index. Male childhood immigrants are the main drivers of the results for the occupational skill index.

Table 5 further shows that limited English skills reduce the probability of marrying an Australian native but increase the likelihood of marrying someone who was born in the same country or someone who observes the same religion. The point estimates for these spousal outcomes are almost twice as large for male as for female childhood immigrants. We also find that immigrants who possess greater English skills are likely to marry someone who is 1.6 years younger on average, while among male immigrants, better English skills are associated with marrying an older spouse. Finally, Table 5 shows that spousal involvement with household work increases with better English skills, especially among male childhood immigrants, while we find English-speaking abilities to have only a limited effect on spousal volunteer work.

Similar to the economic and social integration outcomes shown in previous tables, it is mainly the non-Muslim sample that is driving our results. We find that Muslim immigrants' marriage and fertility behaviors and spousal characteristics are less sensitive to changes in English skills, with the exception of schooling and volunteer work. There are indications of assortative mating at higher levels of educational attainment for both male and female Muslim childhood immigrants. When we consider other partner characteristics, the behaviors of male Muslim immigrants seem to be comparable to those of other immigrant groups, where proficiency in English provides a pathway to their social integration. In contrast, greater English skills among female Muslim childhood immigrants reduce the likelihood of having an Australian-born spouse and increase the probability of having a spouse with the same country of birth. Further, our results suggest that, among Muslim immigrants, not only individuals' own engagement in volunteer work but also their

spouses' engagement are associated negatively with improvements in English proficiency. This could be due in part to the idea that Muslim childhood immigrants with greater English skills have better employment opportunities and can move out of their ethnic enclave. As a result, they may be less closely attached to their local community, making them less able and willing to devote their time to volunteer work. Indeed, we find that the adverse effects of English ability on voluntary work are double in size for the working Muslim immigrants than their non-working counterparts.

5.5 Changes in English Proficiency

Previous studies in this literature have examined the effects of age-at-arrival on English proficiency at a given point in time and have mostly used cross-sectional data, making them static in nature. However, age-at-migration might also contribute to the language acquisition of childhood immigrants from non-English speaking countries in a dynamic manner by improving their language acquisition skills not only during childhood but also over time, as shown in Table 6. The analysis presented in Table 6 is possible because we can observe the same individuals in the 2006 and 2011 Censuses. This longitudinal aspect is a unique feature of our dataset that is not available in the censuses of other host countries. The raw tabulations show that 5 percent of our sample reported having a better level of English in 2011 than in 2006. The transition matrix for English ability between 2006 and 2011 summarized in Appendix Table 4 provides similar evidence by demonstrating that individuals who reported different levels of English in 2006 and 2011 did indeed report higher levels of English in 2011 than in 2006. Also, the change in the English levels varies by a point; thus, it is unlikely that the modification is merely a measurement error.

The outcome of interest in Table 6 is the likelihood of improving English skills between 2011 and 2006. We find that childhood immigrants from non-English speaking countries are 16

percentage points more likely to improve their English skills over the past five years. We also find that older childhood immigrants who had arrived Australia from non-English-speaking countries after the critical age for language acquisition had improved their English skills more over this five-year period than their younger counterparts. We continue to find similar results in column (2) when we define the arriving-young dummy as arriving between the ages of 0 and 9. Columns (3) and (4) replace the arriving-young dummy with a continuous age-at-migration variable. Column (3) includes all childhood immigrants from non-English speaking countries with an age at arrival of between 0 and 17, while column (4) presents the results for childhood immigrants who were between 0 and 14 at the time of their arrival. The coefficient on the interaction term in column (3) is positive and statistically significant, suggesting that a childhood immigrant who arrived from a non-English speaking country at the age of 17 has improved his/her English skills by eight percentage points more than another immigrant who arrived at the age of 0. Our results are similar for Muslim childhood immigrants as well. Altogether, these results reinforce the idea that adult migrant English classes could have some value, as English skills can still improve later in life.

6. Robustness Checks

Measurement Error

Having shown that English proficiency plays a crucial role in shaping childhood immigrants' later life along various dimensions; it is helpful to examine the alternative hypotheses in more detail, in order to lend credence to our empirical strategy. As has been mentioned, we obtain the causal effects of English proficiency on economic and social outcomes by using an interaction of dummies for arriving very young and being born in a non-English speaking country as an instrument for English ability. Two different types of measurement error may be present in this

setting and could confound our results. First, English speaking skills are self-reported, and could therefore be subject to reporting error. We account for the potential reporting bias by exploring the longitudinal aspect of our dataset and restricting our analysis to only migrants who reported the same levels of English in both census rounds, which makes up around 90 percent of the regression sample. The IV results using this sample are presented in column (2) of Table 7. We find that our results remain quantitatively and statistically similar to the baseline results with the full sample. We provide further evidence regarding this concern by estimating our first-stage using two alternative indicators of English skills. We first replace the ordinal English measure with a dummy variable for speaking English very well that is less prone to a reporting bias. Second, we use an indicator for speaking English at home among childhood immigrants from non-English speaking countries. As is summarized in Table 2 and column (2) of Appendix Table 8, our results remain similar with these alternative measures of English proficiency.

In the third column of Table 7, we replace the NES dummy with a continuous language distance measure. Previous tables grouped all NES countries together by using a dummy variable for childhood immigrants from NES countries. However, the linguistic distance between English and the native tongues spoken in the source countries could be heterogeneous across NES countries, which could either ease or impede the acquisition of English upon arrival. In turn, such heterogeneity in language acquisition could have significant implications for immigrants' economic and social integration. We test the robustness of our results and employ a finer measure of language distance by drawing from the comparative linguistics literature and deriving a measure of linguistic distance that is based on the automatic comparison of pronunciations. This specification includes the same number of observations as in baseline specification hence it excludes immigrants from countries where English is listed as one of the official languages.

However, unreported regression findings are similar when we include the immigrants from countries where English is listed as one of the official languages or when we exclude immigrants from English-speaking countries (like India) where English is the official language but not commonly spoken.

The language distance results mimic the baseline specification for schooling and spousal outcomes, but we find different results for labor market outcomes.[26] We see from column (3) that a one-unit increase in English skills leads to 0.8 more years of schooling among childhood immigrants when we use the language distance measure instead of the NES dummy. On the other hand, we find that the positive labor market returns to English skills cease to exist in this specification. These findings are indeed critical for immigration policies since they suggest that speaking native-like English matters for labor market outcomes on the extensive margin but sounding like native does not (on the intensive margin). Column (3) also demonstrates that language distance does indeed matter for partner choice, voluntary work and residential location choice. All the point estimates for these outcomes are economically and statistically significant and are similar to those from the baseline specification reported in column (1). Therefore, overall, our results underscore the importance of English ability in promoting the integration and social cohesion of immigrants.

Sample Selection

Another concern for identification could be sample selection, driven by parents' migration decisions. As has been discussed in several studies, the age of the children might determine the timing of the migration and the host country to which the family will migrate. However, such

[26] We also utilized other three measures of the language distance in our analysis. However, two of these measures mostly have missing values of the language distance for Australia. We find similar results when we use these alternative measures of the language distance, but Yao and van Ours (2015) argue that the language distance measure that we use in Table 7 is the most suitable one.

selective behavior of parents would confound our analysis only if the compositions of childhood immigrants from English-speaking and non-English-speaking countries are visibly different. Figure 1d demonstrates that, if anything, childhood immigrants from English-speaking countries are more likely to arrive in Australia at younger ages than those from non-English speaking countries. Moreover, we drop childhood immigrants who migrated after the age of 14 from our analysis. Our results remain virtually unchanged with this restricted sample. As a further robustness check, we restrict our sample to childhood immigrants who were between 6 and 15 years of age at the time of the arrival so that children in the affected and control groups are both at school age at the time of the migration (see column (4) of Table 7). Finally, we control for mother and father characteristics in the last column of Table 7. Parental controls include dummies for age, English skills, education, occupational skill and voluntary work. Similar to other censuses, parental characteristics are available only for individuals residing in the same household with their parent(s). Missing dummies are used in this specification keeping the number of observations equal to baseline specification. Results remain similar without missing dummies. It is comforting that our results retain their economic and statistical significance after we control for parental characteristics. Taken together, it is unlikely that the aforementioned sample selection is driving our results.

As further evidence of the lack of sample selection, we drop the childhood immigrants from the UK and New Zealand from the analysis. We might expect that economic and social adaptation and integration to Australia might be relatively easier for immigrants from these countries compared to the immigrants from non-English-speaking countries due to cultural and institutional similarities as well as geographic proximity. Therefore, if these new estimates were very different, it would suggest that immigrants from the UK and New Zealand are poor controls for non-

language-age-at-arrival effects of the immigrants from non-English speaking countries. As reported in columns (4) and (5) of Appendix Table 5, our estimates change very little from the baseline specification when we exclude childhood immigrants from the UK and New Zealand, bolstering our confidence in the estimation results.

The results reported herein might not reflect the true effects of English language skills for the following reason. Immigrants from NES countries could exhibit stronger age-at-arrival effects simply because immigrants from poorer countries face additional barriers to adaptation, with these barriers increasing in severity as a function of age at arrival. We attempt to account for this potential concern by estimating the first and second stages controlling for the characteristics of the country of birth and their interactions with age-at-migration dummy. We experimented including and excluding country-of-birth dummy variables in these unreported regressions. The controls are the infant mortality rate and the per capita gross domestic product (GDP) in the country of birth in the year of birth for each immigrant. Measures of schooling quality (school expenditures and teacher-to-pupil ratios) are available in five-year intervals and are used in the country of birth for each immigrant during the appropriate year-of-birth interval. In these unreported estimations, the significance of the first stage remains, and English skills are significant in the IV estimations.

We further restrict our analysis to the siblings sample and estimate sibling fixed effects models, which allow us to account for the unobserved heterogeneity in parental characteristics and explore the variation in age-at-arrival and later life outcomes across siblings. Appendix Table 6 reports the estimation results with sibling fixed effects. An important caveat for this sibling fixed effects analysis stems from the fact that, like any census data, the interviews in the Australian Census take place at the household level. As a result, only siblings who reside within the same household can be linked to each other, making the sibling sample relatively young. Thus, we are

unable to estimate the labor and marriage market outcomes for this sample, since a significant number of the individuals are of school age. However, even after controlling for fixed sibling characteristics, we continue to find that siblings who were younger at the time of the migration achieve better language skills in adulthood than their older siblings. These results are consistent across different English ability measures, as is reported in columns (1) and (2). We also find that the IV estimates for educational attainments and voluntary work have reasonable magnitudes and signs, though they are not statistically significant, probably due to the small sample size involved.

Another potential concern related to sample selection is migration, in that we may not be observing migrants because they migrated internally or externally. We assess whether internal or out-migration is a concern for our analysis by focusing on 'never moved in the past five years' as an outcome. We find that English proficiency does not seem to affect the likelihood of moving over the previous five years. Moreover, when we estimate moved internally or moved externally over the past five years as the outcome variables, they are also insignificant. This is as expected, because return migration is not an issue in Australia. However, we also show here that English proficiency is not related to moving decisions within Australia among migrants. Thus, the potential sample selection engendered by migration is not an issue for the longitudinal analysis.

Actual Role of Religion

We also estimate the pooled regressions including all childhood immigrants and allow the main effect of English proficiency to differ by Muslim origin (see, Appendix Table 7). These pooled regressions are similar to the analysis presented previously. We continue to find that better English skills lead to higher levels of formal education in all migrant groups. However, the pooled regressions also reveal significant differences in labor and marriage market outcomes and participation in volunteer work among Muslim immigrants. For instance, we find that Muslim

childhood immigrants are eight percentage points less likely to engage in volunteer work than their non-Muslim counterparts with the same level of English proficiency. It is comforting that we continue to find similar results when using different specifications.

Results reported for the Muslim sample might not reflect the true effects of religion. Self-reported religion could be a measure of social integration given that Australia is predominantly non-Muslim, or it could reflect a certain ethnicity or culture. First, unreported IV regressions show that English skills do not predict the Muslim dummy. This implies that Muslim subsample is not a selected group based on English skills. Second, our dataset provides the largest number of observations for Muslim immigrants in Australia compared to other existing datasets. Muslims in the data come from around 100 different countries unlike the UK or some other European countries where majority of Muslim immigrants come from handful countries. In our regressions for Muslims, we estimate the same regressions, which control for country of birth dummies. This ensures that our subsample regressions do not simply capture the role of a certain culture or ethnicity but the role of religion. In addition, Muslims do not appear to be a selected group in terms of identification strategy. We find that the magnitude of the interaction coefficient in the first-stage among Muslims is quite similar to the coefficient for the full sample. This suggests that critical-age hypothesis holds across all immigrants and Muslims.

7. Conclusion

This paper presents causal evidence on the returns to English-speaking ability for the socioeconomic outcomes of immigrants. We further investigate whether Muslim immigrants face additional hurdles to their economic and social integration in Australia. We identify the causal effects of English skills on socioeconomic outcomes by employing the "critical age" hypothesis

from the language acquisition literature. Using the Australian Longitudinal Census data 2006-2011, we document that all childhood immigrants who migrate before the age of 12 attain higher levels of English skills regardless of their religion. A good command of English significantly improves their educational attainments and labor and marriage market prospects. Moreover, we find that proficiency in English encourages immigrants to participate in voluntary work, promoting social cohesion and a feeling of belonging in the host country. However, our results show that while a proficiency in English enhances the educational attainments of Muslim childhood immigrants, it produces limited positive returns for them in the labor and marriage markets. We also find that Muslim childhood immigrants' progress in English fails to improve their participation in voluntary work, meaning that this opportunity for social cohesion is missed.

Given the increasing number and proportion of Muslim immigrants in host countries around the globe, the debate on the social and economic integration of Muslim immigrants is likely to remain at the center of public policy. Our results contribute to this discussion by providing a research design that estimates the role of English-language skills in promoting the economic and social adaptation of Muslim immigrants in the host country. Without taking any stand on this topic, our results suggest that better English skills are of limited use in the economic and social integration of Muslim immigrants, except in providing them with better access to formal education. Therefore, our findings call for alternative public policies that aimed in helping Muslim immigrants in the transition from the school to the labor and marriage markets and encourage them to participate in voluntary work.

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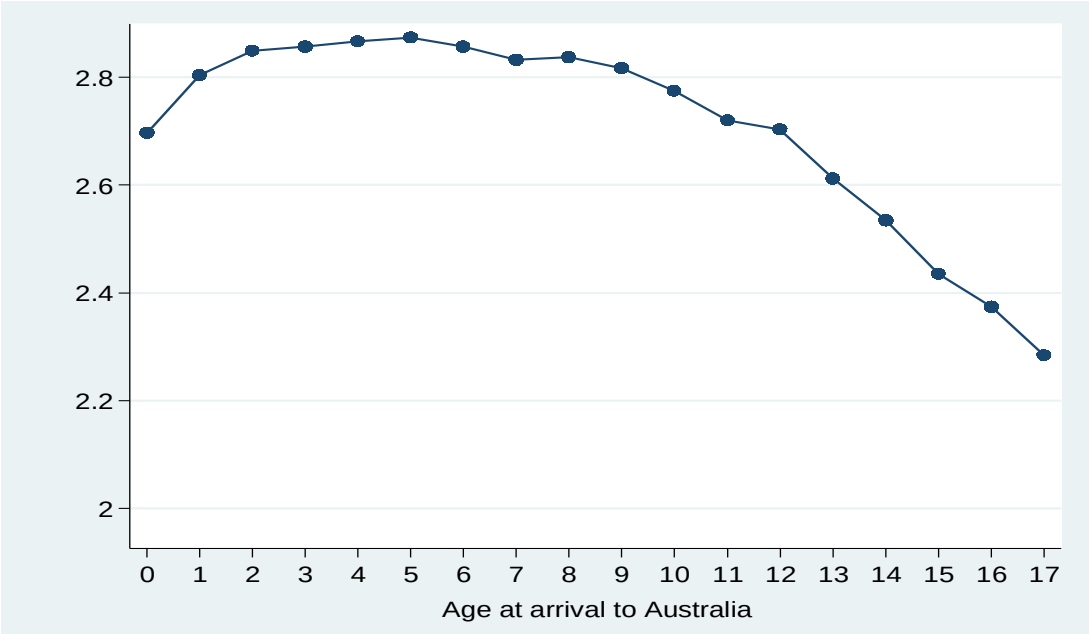
Figure 1A: English Proficiency of Childhood Immigrants by Age at Arrival



Notes: Figure presents the mean English-ability scores by age at migration for childhood immigrants from non-English-speaking countries who migrated to Australia between 0 and 17 years of age.

Figure 1B: English Proficiency of Muslim Childhood Immigrants by Age at Arrival in 3-years Intervals

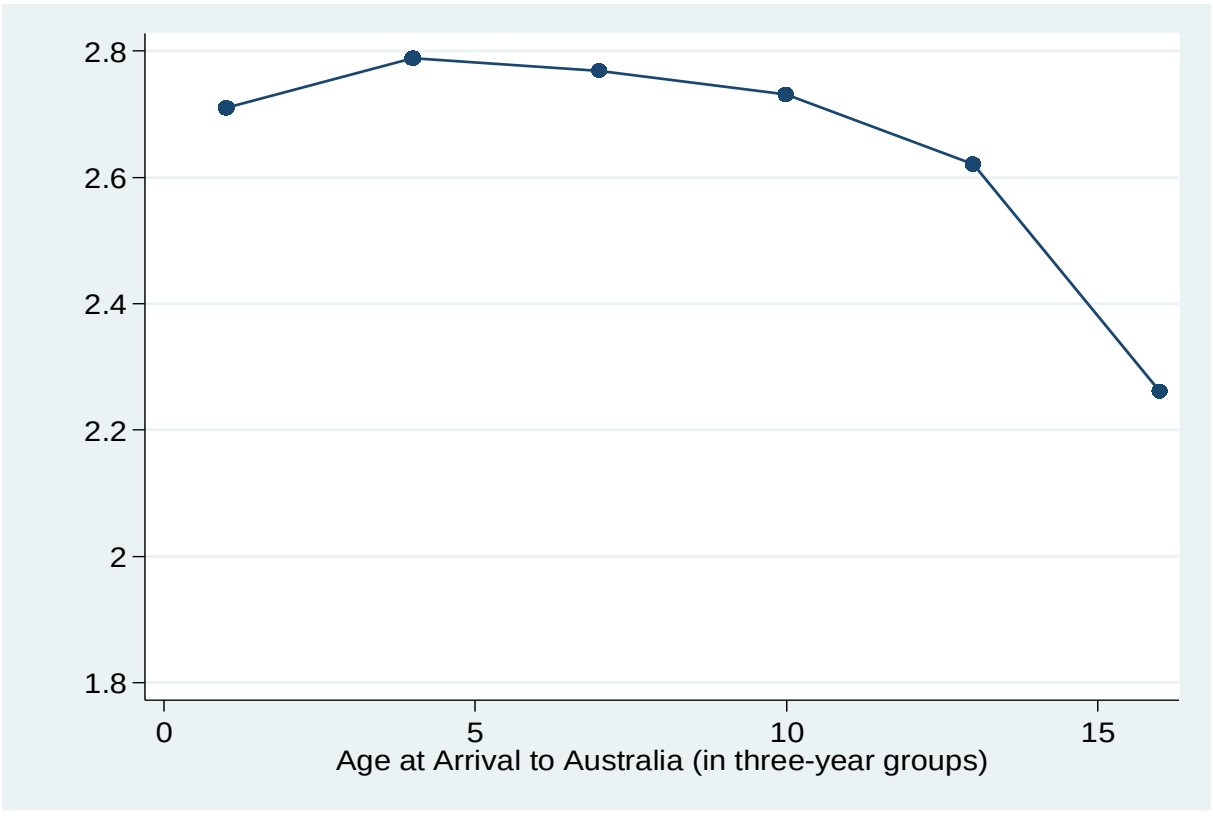
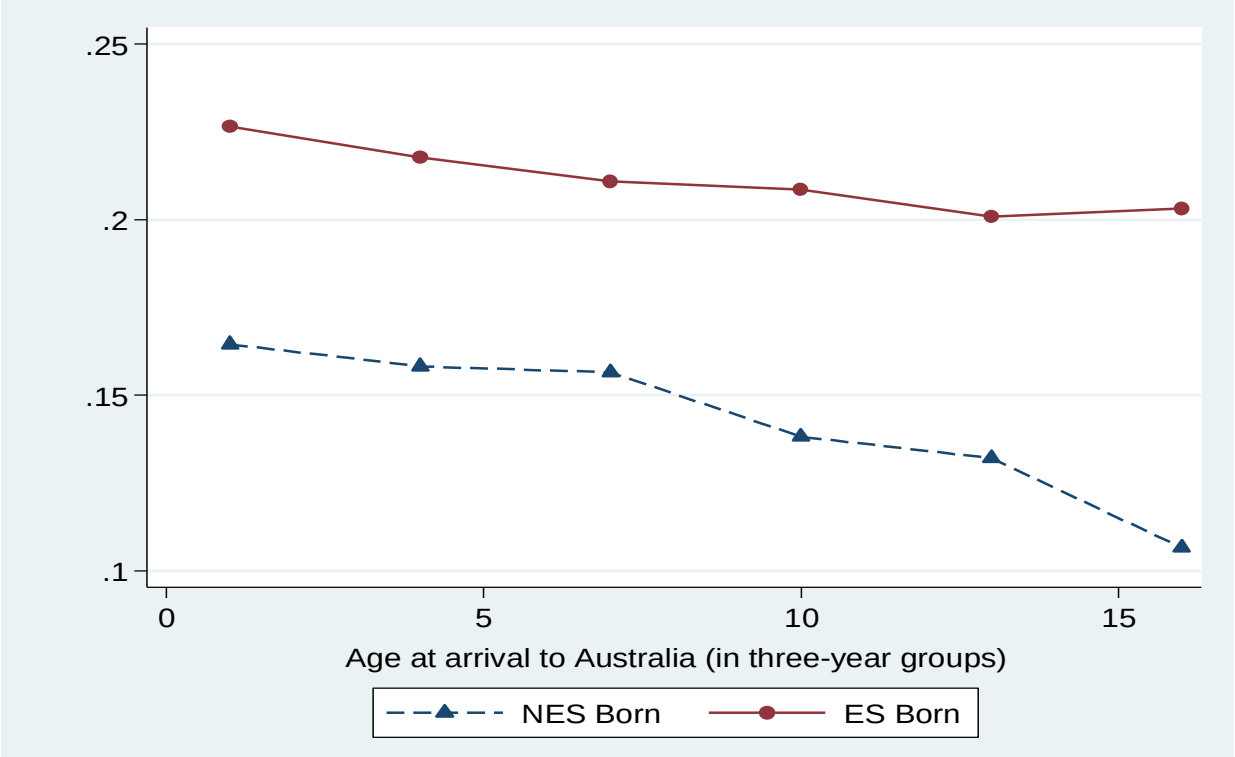


Figure 1C: Participation in Voluntary Work of Childhood Immigrants by Age at Arrival in 3-years Intervals



Notes: Figure shows the 3-year averages for the participation in voluntary work for childhood immigrants from English-speaking and non-English-speaking countries by age at migration.

Figure 1D: Share of Childhood Immigrants by Age at Arrival

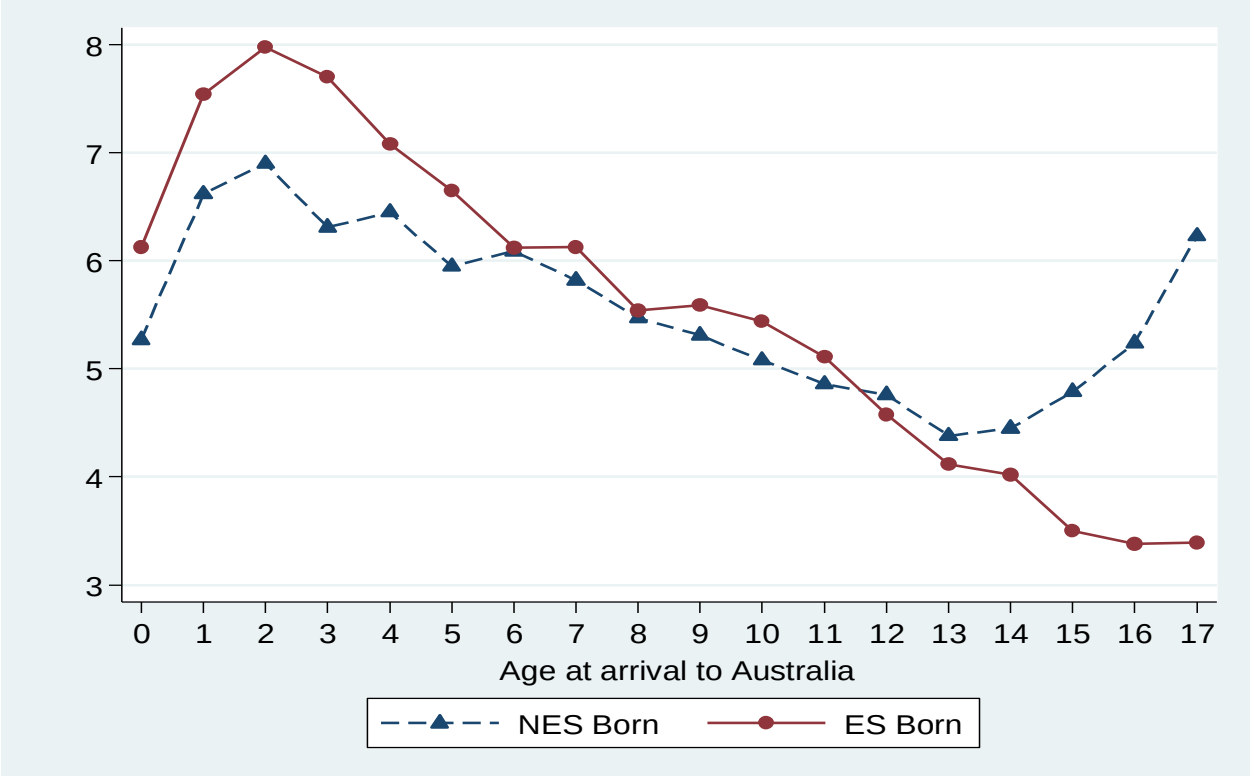


Table 1: Descriptive Statistics

	All Immigrants		Immigrants with nonAUS Parents		Muslims Immigrants		Natives	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Arrived young (0–11 years)	0.74	0.44	0.72	0.45	0.72	0.45		
NES country of birth	0.49	0.5	0.51	0.50	0.94	0.23		
English ability	2.9	0.34	2.89	0.35	2.78	0.51		
Speak only English at home	0.65	0.48	0.62	0.48	0.12	0.33		
Language distance	0.53	0.79	0.55	0.8	0.71	0.36		
College or higher	0.5	0.5	0.50	0.50	0.38	0.49	0.46	0.50
High school or higher	0.71	0.45	0.70	0.46	0.67	0.47	0.65	0.48
Year 11 or higher	0.78	0.41	0.77	0.42	0.75	0.44	0.73	0.44
Year 10 or higher	0.92	0.27	0.91	0.28	0.88	0.32	0.90	0.29
lnhourly income hw>1	0.51	0.52	0.51	0.52	0.51	0.56	0.51	0.52
lnhourlyincome for public	0.52	0.49	0.52	0.49	0.49	0.52	0.49	0.51
lnhourlyincome for private	0.51	0.52	0.51	0.52	0.49	0.53	0.52	0.51
Public sector employee	0.16	0.37	0.16	0.36	0.11	0.32	0.16	0.37
Voluntary work	0.18	0.38	0.17	0.38	0.10	0.31	0.22	0.41
Public transportation to work	0.1	0.29	0.09	0.29	0.13	0.34	0.06	0.24
Number of vehicles	2.02	0.98	2.02	0.99	1.99	0.98	2.05	1.00
Married	0.52	0.5	0.53	0.50	0.52	0.50	0.47	0.50
Number of children	2.58	1.32	2.60	1.32	2.77	1.56	2.51	1.37
Age	40.86	13.76	41.43	13.73	32.35	11.37	37.84	17.03
Male	0.5	0.5	0.50	0.50	0.48	0.50	0.49	0.50
Linked dummy	0.9	0.3	0.91	0.3	0.89	0.32	0.92	0.27

Notes: Summary statistics are provided for immigrants who have been living in Australia between 11 and 55 years and who arrived in Australia before the age of 18.

Table 2: Age at Migration and English Skills: First-Stage Results

	English Ability	Speak English Very Well	Speak Only English At Home
	(1)	(2)	(3)
	Panel A: All Immigrants		
Arrived young*NES	0.365***	0.309***	0.135***
country of birth	(9.48)	(10.75)	(6.97)
Adjusted R-squared	0.315	0.334	0.577
N	103,265	103,265	124,758
	Panel B: Immigrants with nonAUS Parents		
Arrived young*NES	0.362***	0.307***	0.123***
country of birth	(9.46)	(10.7)	(6.31)
Adjusted R-squared	0.312	0.33	0.581
N	93,904	93,904	113,317
	Panel C: Muslim Immigrants		
Arrived young*NES	0.351***	0.281***	0.116*
country of birth	(4.15)	(4.53)	(2.34)
Adjusted R-squared	0.186	0.215	0.195
N	4,221	4,221	4,574

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each regression controls for gender, age at the time of the survey, age-at-migration dummies and country of birth dummies. Standard errors are clustered at the country of birth while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively.

Table 3: Effect of English Proficiency on Education Outcomes

	All Immigrants		NonAUS Parents		Muslim Immigrants	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
College and above	0.198***	0.183***	0.201***	0.207***	0.148***	0.131
	(10.44)	(5.33)	(10.97)	(6.46)	(8.09)	(0.65)
High school and more	0.210***	0.266***	0.212***	0.289***	0.251***	0.535***
	(16.29)	(3.77)	(16.57)	(4.17)	(17.54)	(4.11)
11 years of schooling and more	0.201***	0.333***	0.201***	0.349***	0.245***	0.511***
	(12.52)	(4.03)	(12.49)	(4.21)	(18.31)	(4.85)
10 years of schooling and more	0.170***	0.391***	0.170***	0.389***	0.186***	0.504***
	(5.92)	(3.42)	(5.91)	(3.43)	(9.02)	(6.89)

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each cell is from a separate regression. Each regression controls for gender, age at the time of the survey, age-at-migration dummies and country of birth dummies. Standard errors are clustered at the country of birth while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively. The identifying instrument for English proficiency is the interaction of arriving young and migrating from a non- English-speaking country.

Table 4: Effect of English on Economic and Social Integration Outcomes

	All Immigrants		NonAUS Parents		Muslim Immigrants	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Labor Market Outcomes						
Unemployed	-0.024***	-0.059**	-0.025***	-0.0515**	0.039	-0.290
	(3.51)	(3.29)	(3.67)	(2.72)	(1.60)	(1.18)
Not in the labor force	-0.097***	-0.052	-0.092***	-0.049	-0.119***	-0.511
	(7.99)	(1.32)	(7.75)	(1.26)	(4.49)	(1.15)
ln hourly wage	0.237***	0.357***	0.237***	0.352***	0.0103	0.623
	(13.90)	(3.61)	(13.39)	(3.43)	(0.11)	(0.86)
ln hourly wage (public sector)	0.0243	0.075	0.0196	-0.0304	0.955*	NA
	(0.33)	(0.26)	(0.27)	(0.11)	(2.32)	NA
ln hourly wage (private sector)	0.245***	0.383**	0.246***	0.397***	-0.0141	0.742
	(11.15)	(3.26)	(10.85)	(3.40)	(0.14)	(1.31)
Occupational skill	0.504***	0.860***	0.498***	0.771***	0.194	-0.746
	(8.61)	(3.82)	(8.82)	(3.55)	(0.72)	(0.12)
Public sector (vs private sector)	0.049***	0.092	0.047***	0.101	0.095**	-1.260
	(7.11)	(1.07)	(6.74)	(1.19)	(2.77)	(1.94)
Self-employed (vs employee)	-0.0282*	-0.117**	-0.0297	-0.124**	0.0219	-0.477
	-1.98	(2.80)	(1.97)	(2.59)	(0.30)	(0.93)
Number of vehicles	0.131***	0.325*	0.119***	0.291	-0.126	-1.487*
	(4.87)	(2.05)	(4.48)	(1.80)	(1.89)	(2.09)
Panel B: Social Integration Outcomes						
Voluntary work	0.050***	0.088***	0.051***	0.103***	0.0173	-0.454***
	(10.05)	(4.08)	(10.02)	(4.67)	(1.07)	(5.62)
Public transport to work	0.022**	0.132***	0.022**	0.134***	0.0131	0.452**
	(3.13)	(7.15)	(3.12)	(6.39)	(0.37)	(2.69)
Never moved past five years	-0.028***	-0.004	-0.029***	-0.011	-0.043**	-0.044
	(4.02)	(0.08)	(4.03)	(0.22)	(3.38)	(0.31)
Proportion of people from same religion in postcode	-0.001	-0.01	-0.001	-0.008	-0.010***	0.001
	(0.43)	(1.17)	(0.10)	(0.88)	(5.22)	(0.04)
Proportion of people from same country in postcode	-0.002**	-0.004***	-0.002***	-0.005***	-0.002	0.005
	(3.20)	(3.45)	(3.53)	(3.61)	(1.68)	(1.11)

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each cell is from a separate regression. Each regression controls for gender, age at the time of the survey, age-at-migration dummies and country of birth dummies. Standard errors are clustered at the country of birth while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively. The identifying instrument for English proficiency is the interaction of arriving young and migrating from a non- English-speaking country.

Table 5: Family Structure and Partner Outcomes: IV Estimates

	Immigrants			Muslim Immigrants		
	All	**Male**	**Female**	**All**	**Male**	**Female**
	(1)	(2)	(3)	(4)	(5)	(6)
Married	-0.285***	-0.378***	-0.224**	0.137	-0.249	0.218
	(3.31)	(3.46)	(2.93)	(1.51)	(0.87)	(1.78)
Ever had children for the ever married	-0.066*	NA	-0.066*	0.017	NA	0.017
	(2.04)	NA	(2.04)	(0.12)	NA	(0.12)
Spouse's English ability (0-3)	0.685***	0.793***	0.618***	-0.051	-0.395	0.221
	(10.29)	(10.88)	(9.54)	(0.29)	(0.42)	(0.91)
Spouse has college or more	0.175***	0.131*	0.221***	0.657**	0.975	0.822**
	(4.47)	(2.44)	(4.95)	(2.87)	(1.74)	(2.76)
Spouse has high school or more	0.197***	0.227***	0.191***	-0.022	0.121	0.196
	(5.33)	(4.44)	(4.29)	(0.20)	(0.78)	(1.76)
Spouse has 11 years of schooling or more	0.198***	0.244***	0.182**	-0.006	0.144	0.263
	(4.11)	(4.68)	(2.99)	(0.05)	(0.99)	(1.91)
Spouse has 10 years of schooling or more	0.245***	0.318***	0.207**	0.019	0.149	0.00458
	(4.01)	(4.71)	(2.99)	(0.31)	(1.19)	(0.05)
Spouse's occupational skill	0.878***	1.075**	0.456	NA	NA	NA
	(3.77)	(2.64)	(0.72)	NA	NA	NA
Spouse's age	-1.600***	1.187*	-3.466***	-4.912	0.846	-3.940
	(3.47)	(2.30)	(6.87)	(1.48)	(0.09)	(1.46)
Spouse is Australia born	0.278***	0.432***	0.176***	-0.097	0.975	-0.413**
	(5.93)	(4.71)	(3.72)	(0.26)	(1.06)	(2.90)
Spouse has same religion	-0.164***	-0.211***	-0.129**	0.062	0.347	-0.0897
	(5.69)	(4.96)	(3.07)	(0.36)	(1.26)	(0.37)
Spouse is from the same country	-0.431***	-0.604***	-0.323***	0.018	-0.406**	0.205
	(10.37)	(7.24)	(7.05)	(0.07)	(3.28)	(0.62)
Spouse's household work hours	1.754*	3.353	0.475	2.270	30.98	-3.337
	(2.49)	(1.85)	(0.92)	(0.24)	(1.15)	(1.80)
Spouse has done voluntary work	0.0520	0.0525	0.0545	-0.351***	-0.377**	-0.435***
	(1.78)	(1.46)	(1.51)	(4.04)	(3.11)	(3.91)

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each cell is from a separate regression. Each regression controls for gender, age at the time of the survey, age-at-migration dummies and country of birth dummies. Standard errors are clustered at the country of birth while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively. The identifying instrument for English proficiency is the interaction of arriving young and migrating from a non- English-speaking country.

Table 6: Age at Migration and Improvement in English Proficiency

	(1)	(2)	(3)	(4)
Arrived young*NES	-0.056***	-0.031**		
country of birth	(4.45)	(3.16)		
Arrived young (0-11 years)	-0.016*			
	(2.60)			
NES country of birth	0.165***	0.138***	0.086***	0.098***
	(14.36)	(14.72)	(5.97)	(6.01)
Arrived young (0-9 years)		-0.010*		
		(2.00)		
Age at migration* NES			0.005***	0.003
country of birth			(3.68)	(1.62)
Age at migration			0.002*	
(0–17 years)			(2.22)	
Age at migration				0.002
(0–14 years)				(1.87)
Adjusted R-squared	0.036	0.045	0.037	0.045
N	42,363	36,094	42,363	36,094

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each regression controls for gender and age at the time of the survey. Standard errors are clustered at the country of birth while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively.

Table 7: Measurement Error and Robustness Specifications

	Baseline Specification	Sample of Immigrants with same English in 2006 and 2011	Replace NES Born with Language Distance	Age at Migration 6-15	Control for Mother and Father Characteristics
	(1)	(2)	(3)	(4)	(5)
English skills	0.358***	0.398***	0.143**	0.242***	0.375***
	(8.36)	(8.87)	(2.22)	(8.57)	(9.54)
College and above	0.183***	0.152***	0.214***	0.188***	0.194***
	(5.33)	(4.29)	(4.08)	(3.68)	(5.45)
High school and more	0.266***	0.234**	0.419***	0.235**	0.308***
	(3.77)	(3.27)	(3.49)	(3.05)	(4.71)
11 years of schooling and more	0.333***	0.298***	0.583***	0.271**	0.367***
	(4.03)	(3.65)	(3.89)	(2.86)	(4.84)
10 years of schooling and more	0.391***	0.350**	0.779***	0.337**	0.414***
	(3.42)	(3.28)	(3.52)	(2.66)	(3.75)
Unemployed	-0.0590**	-0.0462	-0.974	-0.046	-0.080***
	(3.29)	(1.14)	(0.23)	(1.44)	(4.41)
ln hourly wage	0.357***	0.447**	1.725	0.287*	0.400***
	(3.61)	(2.89)	(1.29)	(2.02)	(3.89)
public sector (vs private sector)	0.092	0.168	0.062	0.0979	0.108
	(1.07)	(1.43)	(0.04)	(0.78)	(1.28)
self-employed (vs employee)	-0.117**	-0.172	0.392	-0.104	-0.097*
	(2.80)	(1.52)	(0.22)	(1.68)	(2.32)
Voluntary work	0.088***	0.114***	0.103***	0.087**	0.091***
	(4.08)	(3.46)	(3.48)	(2.98)	(4.09)
Public transport to work	0.132***	0.128***	0.069	0.149***	0.118***
	(7.15)	(5.49)	(1.29)	(4.65)	(5.7)
Proportion of people from same religion in postcode	-0.01	-0.00741	-0.009	-0.004	-0.005
	(1.17)	(0.88)	(0.50)	(0.37)	(0.51)
Proportion of people from same country in postcode	-0.004***	-0.003*	-0.004**	-0.007**	-0.004***
	(3.45)	(2.50)	(2.60)	(2.72)	(3.32)
Married	-0.285***	-0.302***	-0.098	-0.336**	-0.131**
	(3.31)	(3.49)	(0.53)	(3.13)	(2.7)
Spouse's English ability (0-3)	0.685***	0.627***	0.590***	0.639***	0.685***
	(10.29)	(8.70)	(9.21)	(6.47)	(10.29)
Spouse has 10 years of schooling or more	0.245***	0.211***	0.362***	0.142*	0.245***
	(4.01)	(3.70)	(4.30)	(2.46)	(4.01)
Spouse's age	-1.600***	-1.396**	-2.589**	-0.636	-1.600***
	(3.47)	(3.09)	(3.23)	(1.36)	(3.47)
Spouse is Australia born	0.278***	0.215***	0.394***	0.242***	0.278***
	(5.93)	(5.19)	(4.14)	(4.58)	(5.93)
Spouse has same religion	-0.164***	-0.130***	-0.145**	-0.200***	-0.164***
	(5.69)	(3.91)	(3.00)	(4.02)	(5.69)
Spouse is from the same country	-0.431***	-0.384***	-0.497***	-0.340***	-0.431***
	(10.37)	(8.61)	(5.45)	(6.89)	(10.37)

Notes: Each cell is from a separate regression. Each regression controls for gender, age at the time of the survey, age-at-migration dummies and country of birth dummies. Standard errors are clustered at the country of birth levels while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively. The identifying instrument for English proficiency is the interaction of arriving young and migrating from a non- English-speaking country in first two columns. The identifying instrument in the third column is the interaction of arriving young and the distance between the language spoken in the country of origin and English.

Appendix Table 1: Definition of Variables Used in the Analysis

NES country of birth	1 if main spoken language in the country of birth is not English, 0 otherwise
ES country of birth	1 if main spoken language in the country of birth is English, 0 otherwise
Arrived young (0–11 years)	1 if respondent arrived in Australia when 0-11 years old, 0 if arrived when 12-17 years old
Arrived young (0–9 years)	1 if respondent arrived in Australia when 0-9 years old, 0 if arrived when 10-14 years old
Age at migration (0–17 years)	Age when respondent arrived in Australia if migrated 0-17 years old.
Age at migration (0–14 years)	Age when respondent arrived in Australia if migrated 0-14 years old.
English ability	Self-reported English speaking ability which is coded as 0 if no English, 1 if not well, 2 if well and 3 if very well.
Male	1 if male and 0 if female
Age	Age in years
Number of vehicles	Number of registered vehicles used or owned by the household members which is coded on a scale 0-4 where 4 indicates 4 and more vehicles.
Number of children	Number of children ever born (live births) to each female and is coded on a scale 0-4 where 4 indicates 4 and more children.
Married	Coded from registered marital status as 1 if married and 0 if never married, widowed, divorced, and separated.
Never married	Coded from registered marital status as 1 if never married and 0 if married, widowed, divorced, and separated.
Public sector employee	1 if working at national government, state/territory government, local government and 0 if working at private sector.
Voluntary work	1 if spent time doing unpaid voluntary work through an organisation or group within the last 12 months, 0 otherwise.
Public transportation to work	Coded from method of travel to work as 1 if train, bus, ferry or tram and 0 if taxi, car (as passenger or driver), truck, motorbike, bicycle, other forms of transport and worked at home.
Year of arrival	Exact year of arrival in Australia in single digit years.
College or higher	1 if a person completed college or higher, 0 otherwise.
High school or higher	1 if a person completed high school or higher, 0 otherwise.
Year 11 or higher	1 if a person completed year 11 or higher, 0 otherwise.
Year 10 or higher	1 if a person completed year 10 or higher, 0 otherwise.
lnhourlyincome	ln hourly wages.
Self-employed	1 if owner of incorporated and corporate enterprise (+-contributing family member) and 0 if employee not owning business.
Occupational skill	Skill level of occupation on a scale 1-5 based upon Australian Standard Classification of Occupations, 2nd Edition.

Notes: Data is taken from Australian Longitudinal Census 2006-2010.

Appendix Table 2: Means by Country of Birth and Age at Arrival

	NES Country of Birth		ES Country of Birth	
	ArrivalAge (0-11)	**ArrivalAge (12–17)**	**ArrivalAge (0-11)**	**ArrivalAge (12–17)**
Variables ↓				
Arrived young (0–9 years)	0.86	0	0.86	0
Age at migration (0–17 years)	5.25	14.67	5.1	14.31
Age at migration (0–14 years)	5.25	12.98	5.1	12.96
English ability	2.9	2.5	3	3
Male	0.5	0.5	0.5	0.49
Age	38.62	47.09	39.84	49.35
Number of vehicles	2.08	1.98	2.02	1.92
Number of children	2.44	2.93	2.58	2.99
Married	0.5	0.67	0.5	0.6
Never married	0.38	0.18	0.35	0.19
Public sector employee	0.14	0.12	0.18	0.18
Voluntary work	0.15	0.12	0.21	0.21
Public transportation to work	0.11	0.09	0.07	0.07
Year of arrival	1974.86	1975.91	1973.58	1973.25
College or higher	0.49	0.46	0.52	0.49
High school or higher	0.73	0.63	0.7	0.65
Year 11 or higher	0.81	0.68	0.78	0.73
Year 10 or higher	0.93	0.8	0.94	0.92

Appendix Table 3: Age at Migration and English Skills using Different Specifications

	English ability (0-3)	English ability (0-3)	English ability (0-3)	Well or very well English
	(1)	(2)	(3)	(4)
		Panel A: All Immigrants		
Arrived young*NES	0.168***			0.046***
country of birth	(5.18)			(3.740
Arrived young (0-11 years)				0.004*
				(2.09)
NES country of birth	-0.314***	-0.01	-0.090***	-0.073***
	(8.76)	(0.39)	(4.19)	(6.26)
Arrived young (0-9 years)	0.011*			
	(2.00)			
Age at migration* NES		-0.032***	-0.016***	
country of birth		(7.26)	(4.02)	
Age at migration		-0.002		
(0–17 years)		(1.89)		
Age at migration			-0.002	
(0–14 years)			(1.84)	
Adjusted R-squared	0.125	0.214	0.12	0.041
Observations	87,925	103,265	87,925	103,265
		Panel B: Excluding Australia-Born Parents		
Arrived young*NES	0.171***			0.046***
country of birth	(5.370			(3.81)
Arrived young (0-11 years)				0.003*
				(2.12)
NES country of birth	-0.311***	0.001	-0.079***	-0.072***
	(8.73)	(0.05)	(3.820	(6.210)
Arrived young (0-9 years)	0.01			
	(1.87)			
Age at migration* NES		-0.032***	-0.017***	
country of birth		(7.43)	(4.24)	
Age at migration		-0.001		
(0–17 years)		(1.710)		
Age at migration			-0.001	
(0–14 years)			(1.6)	
Adjusted R-squared	0.123	0.212	0.118	0.04
Observations	79,097	93,904	79,097	93,904

Notes: Each regression controls for gender and age at the time of the survey. Standard errors are clustered at the country of birth while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively.

Appendix Table 4: Transition Matrix of English Ability

		English 2011			
		0	1	2	3
English 2006	0	4.05	7.43	45.95	42.57
	1	0.76	24.31	37.28	37.66
	2	0.03	4.39	49.5	46.09
	3	0.05	0.46	7.28	92.21

Notes: Raw percentages of English Ability for NES Born Immigrants are presented. Authors' calculations.

Appendix Table 5: Additional Robustness Specifications

	Baseline Specification	Replace English Proficiency with Speaking Only English at Home	Include the Third Group of Countries to NES	Drop Childhood Immigrants from the UK	Drop Childhood Immigrants from New Zealand
	(1)	(2)	(3)	(4)	(5)
College and above	0.183***	0.273**	0.187***	0.177***	0.200***
	(5.33)	(2.91)	(4.53)	(3.92)	(6.09)
High school and more	0.266***	0.546*	0.253**	0.268**	0.288***
	(3.77)	(2.47)	(3.22)	(3.00)	(4.09)
11 years of schooling and more	0.333***	0.734***	0.334***	0.339***	0.343***
	(4.03)	(3.33)	(3.83)	(3.64)	(4.04)
10 years of schooling and more	0.391***	0.912***	0.406***	0.385***	0.393***
	(3.42)	(3.84)	(3.46)	(3.34)	(3.37)

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each cell is from a separate regression. Each regression controls for gender, age at the time of the survey, age-at-migration dummies and country of birth dummies. Standard errors are clustered at the country of birth levels while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively. The identifying instrument for English proficiency (and speaking English at home) is the interaction of arriving young and migrating from a non- English-speaking country.

Appendix Table 6: Siblings Fixed Effects

	English Ability	Speak Very Well English	College and More	High School and More	Voluntary Work
	(1)	(2)	(3)	(4)	(5)
Arrived young*NES country of birth	0.125	0.139*			
	(1.63)	(2.51)			
Arrived young (0-11 years)	0.062**	0.034*			
	(3.01)	(2.22)			
English ability (0-3)			0.23	0.268	0.452
			(0.48)	(0.77)	(0.59)

Notes: Each regression controls for gender, age at the time of the survey and sibling fixed effects. Standard errors are clustered at the family level while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively. The identifying instrument for English proficiency is the interaction of arriving young and migrating from a non- English-speaking country.

Appendix Table 7: Pooled Interaction 2SLS Estimations

	High School and More	Not in the Labor force	Voluntary Work	Public Transport
	(1)	(2)	(3)	(4)
Muslim*English Ability	0.027	0.023	-0.076***	-0.012
	(0.48)	(0.19)	(3.39)	(0.31)
English Ability	0.295***	0.034	0.096***	0.117***
	(4.52)	(0.24)	(3.7)	(5.39)
Adjusted R-squared	0.106	0.064	0.028	0.031
N	66244	70450	69094	45452

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each column is from a separate regression. Each regression controls for gender, age at the time of the survey, Muslim dummy, age-at-migration dummies and country of birth dummies. Standard errors are clustered at the country of birth levels while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively. The identifying instrument for English proficiency (and speaking English at home) is the interaction of arriving young and migrating from a non- English-speaking country.

Appendix Table 8: Age at Migration and English Skills

	English Ability	Speak English Very Well	Speak Only English At Home
	(1)	(2)	(3)
	Panel A: All Immigrants		
Arrived young*NES	0.358***	0.317***	0.195***
country of birth	(8.36)	(10.17)	(10.34)
Arrived young (0-11 years)	0.015*	0.011*	0.047**
	(2.11)	(1.97)	(3.21)
NES country of birth	-0.521***	-0.446***	-0.737***
	(11.050	(12.28)	(18.67)
Adjusted R-squared	0.218	0.265	0.469
N	103,265	103,265	124,758
	Panel B: Immigrants with nonAUS Parents		
Arrived young*NES	0.360***	0.318***	0.178***
country of birth	(8.44)	(10.24)	(8.82)
Arrived young (0-11 years)	0.013*	0.009	0.045**
	(2.08)	(1.91)	(3.26)
NES country of birth	-0.517***	-0.444***	-0.733***
	(10.99)	(12.22)	(18.27)
Adjusted R-squared	0.215	0.261	0.481
N	93,904	93,904	113,317
	Panel C: Muslim Immigrants		
Arrived young*NES	0.346**	0.289***	0.173*
country of birth	(3.10)	(3.93)	(2.57)
Arrived young (0-11 years)	0.048	0.033	-0.112
	(0.74)	(0.76)	(1.69)
NES country of birth	-0.544***	-0.428***	-0.566***
	(5.84)	(6.67)	(4.95)
Adjusted R-squared	0.093	0.126	0.135
N	4,221	4,221	4,574

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each regression controls for gender and age at the time of the survey. Standard errors are clustered at the country of birth while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively.

Appendix Table 9: Proportion of Immigrants by Religion

Religious Affiliation ↓	Percantage ↓
Buddhism	5.1
Christian, nfd	2.3
Anglican	15.7
Baptist	1.7
Brethren	0.1
Catholic	29.9
Churches of Christ	0.2
Jehovah's Witnesses	0.6
Latter-day Saints	0.4
Lutheran	1.2
Oriental Orthodox	0.5
Assyrian Apostolic	0.1
Eastern Orthodox	5.6
Presbyterian and Reformed	2.7
Salvation Army	0.2
Seventh-day Adventist	0.4
Uniting Church	2.6
Pentecostal	1.4
Other Protestant	0.4
Other Christian	0.2
Hinduism	1.3
Islam	3.5
Judaism	1.0
Baha'i	0.1
Chinese Religions	0.1
Druse	0.0
Nature Religions	0.2
Sikhism	0.2
Spiritualism	0.1
Miscellaneous Religions	0.1
No Religion	21.2

Notes: The numbers do not add up to 100 percent because proportions for small number of religious groups are not provided by the ABS due to confidentiality issues.

Appendix Table 10: Are Muslim Immigrants Different from Other Immigrants?

Sample→	All Immigrants			Immigrants from NES Countries			Immigrants from ES Countries		
Variables↓	**Mean for Non-Muslims**	**Mean for Muslims**	**Mean Difference**	**Mean for Non-Muslims**	**Mean for Muslims**	**Mean Difference**	**Mean for Non-Muslims**	**Mean for Muslims**	**Mean Difference**
Arrived young (0-11 years)	0.735	0.717	0.019**	0.699	0.701	-0.002	0.771	0.802	-0.032
English ability	2.902	2.784	0.118***	2.755	2.745	0.01	2.998	2.994	0.004
Speak only English at home	0.66	0.124	0.536***	0.359	0.093	0.266***	0.969	0.53	0.439***
Male	0.499	0.478	0.021**	0.501	0.478	0.023**	0.494	0.437	0.057
Age	41.152	32.348	8.804***	41.684	33.752	7.933***	42.042	28.072	13.970***
Number of vehicles	2.021	1.992	0.029*	2.055	1.973	0.082***	1.997	2.117	-0.119
Number of children	2.573	2.766	-0.193***	2.565	2.951	-0.386***	2.68	2.076	0.604***
Married	0.526	0.52	0.007	0.553	0.547	0.006	0.523	0.421	0.102**
Never married	0.331	0.364	-0.033***	0.315	0.324	-0.008	0.311	0.533	-0.222***
Public sector employee	0.161	0.114	0.047***	0.135	0.108	0.028***	0.181	0.219	-0.038
Voluntary work	0.182	0.104	0.079***	0.147	0.087	0.061***	0.215	0.212	0.003
Public transport to work	0.094	0.135	-0.041***	0.104	0.116	-0.012	0.071	0.11	-0.039
Mother Australia born	0.063	0.006	0.056***	0.03	0.005	0.025***	0.082	0.03	0.051**
Father Australia born	0.052	0.007	0.045***	0.025	0.005	0.021***	0.057	0.036	0.021
Age at arrival	7.63	7.74	-0.109	8.102	7.91	0.192*	7.21	6.581	0.629
College or higher	0.506	0.381	0.126***	0.493	0.359	0.134***	0.512	0.522	-0.01
High school or higher	0.709	0.668	0.042***	0.707	0.629	0.078***	0.689	0.819	-0.129***
Year 11 of higher	0.78	0.746	0.035***	0.771	0.712	0.059***	0.769	0.855	-0.086**
Year 10 of higher	0.918	0.883	0.036***	0.893	0.865	0.028***	0.936	0.949	-0.013
Not in the labor force	0.232	0.388	-0.157***	0.257	0.406	-0.149***	0.21	0.289	-0.079**
Occupational skill	2.197	1.921	0.276***	2.159	1.863	0.296***	2.204	2.271	0.067
Being at school	0.14	0.27	-0.130***	0.134	0.225	-0.091***	0.125	0.433	-0.308***
Full-time employed	0.488	0.345	0.143***	0.478	0.342	0.136***	0.494	0.388	0.106***
Weekly working hours	36.145	34.219	1.927***	36.244	34.725	1.519***	36.153	32.826	3.326**
lnhourly income	-2.414	-3.405	0.991***	-2.58	-3.517	0.937***	-2.298	-2.746	0.448**
Unemployed	0.047	0.098	-0.051***	0.051	0.097	-0.046***	0.042	0.065	-0.022

Note: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18.***, **, * indicate significance at the 1, 5 and 10 percent, respectively. ln hourly income includes reported "0" incomes

Appendix Table 11: IV Results by Gender

	All Immigrants		Muslim Immigrants	
	Male	**Female**	**Male**	**Female**
	(1)	(2)	(3)	(4)
College and above	0.196***	0.173***	-0.648	0.105
	(3.50)	(4.43)	(0.59)	(0.33)
High school and more	0.305***	0.237***	0.497	0.499**
	(3.34)	(3.58)	(1.73)	(3.28)
11 years of schooling and more	0.362***	0.310***	0.689**	0.412**
	(3.36)	(4.41)	(3.18)	(2.97)
10 years of schooling and more	0.366**	0.413***	0.527**	0.462***
	(2.79)	(3.99)	(3.24)	(8.25)
Unemployed	-0.0754*	-0.0292	0.611	-0.163
	(2.42)	(0.79)	(0.76)	(1.63)
ln hourly wage	0.435***	0.216	-0.817	-0.874
	(3.55)	(1.45)	(1.01)	(1.80)
public sector (vs private sector)	0.222*	-0.206	2.560	-1.535
	(2.14)	(1.64)	(0.62)	(1.00)
self-employed (vs employee)	-0.218**	-0.00178	-1.522	-0.464
	(2.83)	(0.02)	(0.49)	(1.91)
Voluntary work	0.113***	0.0722**	-0.980***	-0.351***
	(4.20)	(2.79)	(4.49)	(4.71)
Public transport to work	0.147***	0.109**	0.548	0.361**
	(4.40)	(2.81)	(1.20)	(2.60)
Proportion of people from same	-0.00525	-0.0121	0.130	-0.0224
religion in postcode	(0.46)	(1.33)	(1.23)	(1.28)
Proportion of people from same	-0.005***	-0.002	0.026	-0.001
country in postcode	(3.39)	(1.65)	(1.63)	(0.10)

Notes: Sample includes immigrants who live in Australia between 11 to 55 years and arrived in Australia before the age of 18. Each cell is from a separate regression. Each regression controls for age at the time of the survey, age-at-migration dummies and country of birth dummies. Standard errors are clustered at the country of birth levels while absolute t-statistics are in parentheses. ***, **, * indicate significance at the 1, 5 and 10 percent, respectively. The identifying instrument for English proficiency is the interaction of arriving young and migrating from a non- English-speaking country.

ONLINE APPENDIX

List of Countries Where Immigrants Come from in Our Analysis:

1. List of countries where more than 200 Muslim immigrants come from:

Fiji, Bosnia and Herzegovina, Cyprus, Macedonia, Egypt, Iran, Iraq, Lebanon, Syria, Turkey, Indonesia, Malaysia, Singapore, Bangladesh, India, Pakistan, Afghanistan, Somalia, South Africa.

2. List of countries where less than 200 Muslim immigrants come from:

New Zealand, Papua New Guinea, Nauru, Tonga, United Kingdom, England, Northern Ireland, Scotland, Wales, Ireland, Austria, Belgium, France, Germany, Monaco, Netherlands, Switzerland, Denmark, Norway, Sweden, Italy, Portugal, Spain, South Eastern Europe, Albania, Bulgaria, Croatia, Greece, Romania, Slovenia, Montenegro, Serbia, Czech Republic, Hungary, Latvia, Poland, Russia, Ukraine, North Africa and the Middle East, Algeria, Libya, Morocco, Sudan, Tunisia, Middle East, Bahrain, Gaza Strip and West Bank, Israel, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates, Yemen, Myanmar, Cambodia, Thailand, Vietnam, Brunei, Philippines, Timor-Leste , China, Hong Kong (SAR of China),Taiwan, Japan, South Korea, Southern and Central Asia, Maldives, Sri Lanka, Central Asia, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Canada, United States, Argentina, Bolivia, Brazil, Chile, Guyana, Uruguay, Nicaragua, Haiti, Trinidad and Tobago, Central and West Africa, Burkina Faso, Congo, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Senegal, Sierra Leone, Southern and East Africa, Botswana, Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Malawi, Mauritius, Mozambique, Réunion, Tanzania, Uganda, Zimbabwe

3. List of countries where more than 2000 immigrants come from:

New Zealand, Papua New Guinea, Fiji, England, Northern Ireland, Scotland, Wales, Ireland, Germany, Netherlands, Italy, Malta, South Eastern Europe, Bosnia and Herzegovina, Croatia, Macedonia, Greece, Poland, Egypt, Iraq, Lebanon, Turkey, Cambodia, Thailand, Vietnam, Indonesia, Malaysia, Philippines, Singapore, China, Hong Kong (SAR of China), Taiwan, Japan, South Korea, India, Sri Lanka, Canada, United States, Chile, South Africa.

4. List of countries where less than 2000 immigrants come from:

Oceania and Antarctica, Norfolk Island, New Caledonia, Solomon Islands, Vanuatu, Guam, Kiribati, Nauru, Northern Mariana Islands, Palau, Cook Islands, French Polynesia, Niue, Samoa, Samoa American, Tokelau, Tonga, Tuvalu, United Kingdom, Channel Islands, Isle of Man, Austria, Belgium, France, Liechtenstein, Luxembourg, Monaco, Switzerland, Northern Europe, Denmark, Finland, Iceland, Norway, Sweden, Southern Europe, Gibraltar, Holy See, Portugal, Spain, Albania, Bulgaria, Cyprus, Moldova, Romania, Slovenia, Montenegro, Serbia, Eastern Europe, Belarus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Russia, Slovakia, Ukraine, North Africa and the Middle East, North Africa, Algeria, Libya, Morocco, Sudan, Tunisia, Western Sahara, North Africa, Middle East, Bahrain, Gaza Strip and West Bank, Iran, Israel, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen, South-East Asia, Mainland South-East Asia, Myanmar, Laos, Maritime South-East Asia, Brunei, Timor-Leste, Chinese Asia (includes Mongolia), Macau (SAR of China), Mongolia, North Korea, Southern and Central Asia, Southern Asia, Bangladesh, Bhutan, Maldives, Nepal, Pakistan, Central Asia, Afghanistan, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Northern America, Bermuda, South America, Argentina, Bolivia, Brazil, Colombia, Ecuador, Falkland Islands, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela, South America, Central America, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Caribbean, Antigua and Barbuda, Aruba, Bahamas, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Netherlands Antilles, Puerto Rico, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Trinidad and Tobago, Virgin Islands, United States, Central and West Africa, Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Congo, Democratic Republic of Congo, Cote d'Ivoire, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo, Southern and East Africa, Angola, Botswana, Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Réunion, Rwanda, Seychelles, Somalia, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe, Southern and East Africa.