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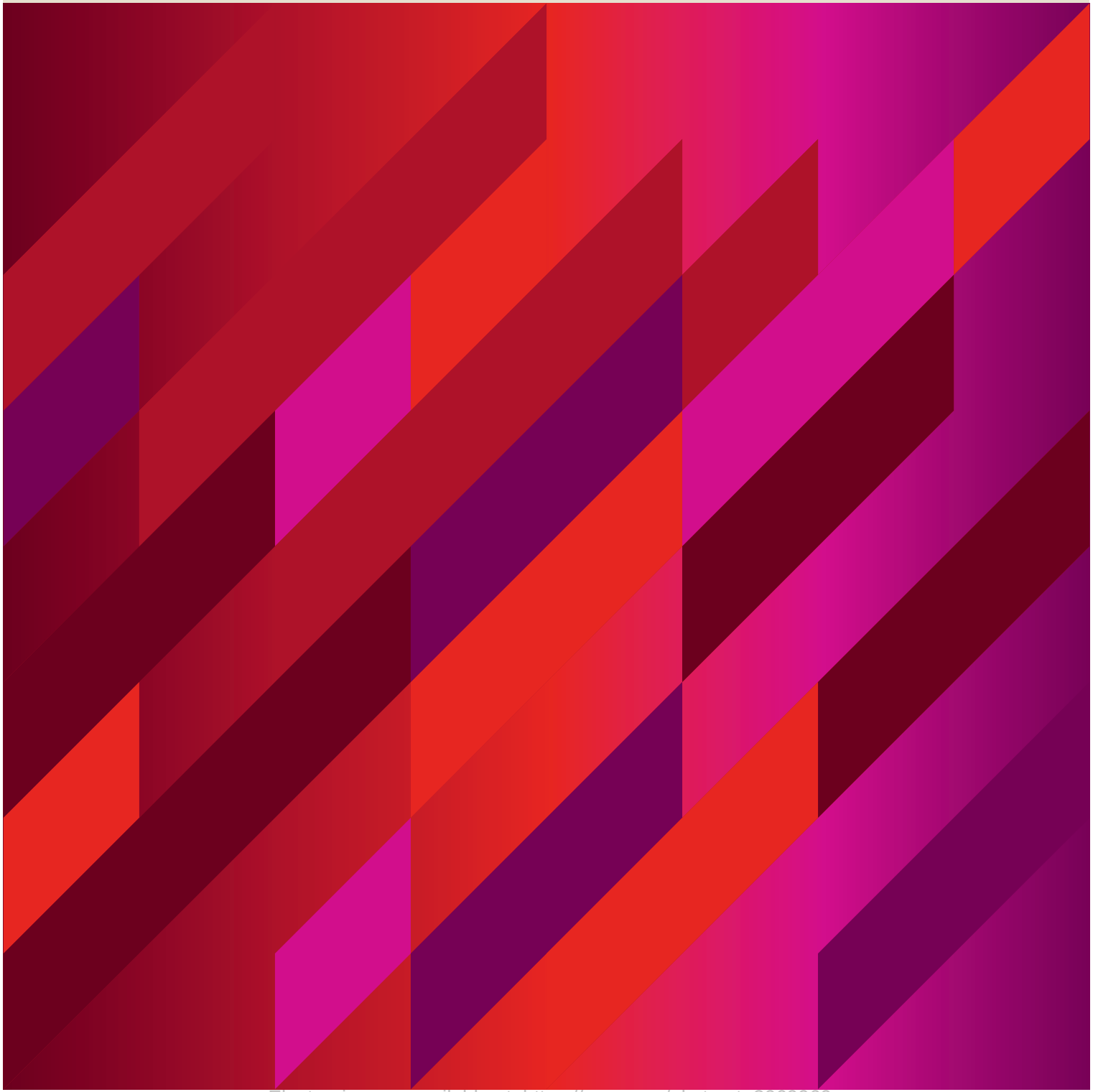

Labour Force Participation and Employment of Humanitarian Migrants: Evidence from the Building a New Life in Australia Longitudinal Data

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Abstract

This study uses the longitudinal data from the *Building a New Life in Australia* survey to examine the relationships between human capital and labour market participation and employment status among recently arrived/approved humanitarian migrants. It includes attention to the heterogeneity of labour force participation and employment status across genders and also migration pathways. We find that the likelihood of participating in the labour force is higher for those who had pre-immigration paid job experience, completed study/job training and have job searching knowledge/skills in Australia and possess higher proficiency in spoken English. We find that the chance of getting a paid job is negatively related to having better pre-immigration education, but it is positively related to having unpaid work experience and job searching skills in Australia, and better health.

Keywords

Australia; humanitarian migrant; human capital; labour force participation; employment status

JEL Codes

J15; J21; J24

1. Introduction

Protecting people who have been forced by armed conflicts and human rights abuses to leave their homes is one of the greatest challenges facing the world today. According to the United Nations High Commissioner for Refugees (UNHCR), 65 million people were forcibly displaced worldwide at the end of 2015, the highest number ever recorded; of these people, 41 million were internally displaced persons, 21 million were refugees, and 3 million were asylum seekers (United Nations High Commissioner for Refugees 2016).

Australia has a long tradition of resettling humanitarian migrants through its Humanitarian Programme, which provides onshore and offshore migration pathways. The onshore protection/asylum component offers protection to people already in Australia who are found to be refugees according to the United Nations Convention Relating to the Status of Refugees. The offshore resettlement component offers resettlement to people overseas for whom this is the most appropriate option. In 2015-16 the Humanitarian Programme provided 15,552 offshore visas and 2,003 onshore visas to refugees and others in humanitarian need (Department of Immigration and Border Protection 2017). In fact, Australia's Humanitarian Programme is the world's second largest resettlement programme through the UNHCR (directly behind the United States), and Australia hosts the largest number of refugees per capita through the UNHCR in the world (Kenny 2015). Studying humanitarian migrants in Australia has significant implications for both research and policy-making purposes.

The economic integration of refugees in the host society is a major research area in immigration studies. In the widely used 'indicators of integration' conceptual framework for examining the integration of refugees and other immigrants, achievement and access across sectors of employment are key components of assessing their integration outcomes (Ager & Strang 2008). The existing studies in different countries also demonstrate that the successful resettlement of refugees depends on whether they can convert their skills and qualifications for use in the new country (Duke *et al.* 1999; Fleay *et al.* 2013; O'Donovan & Sheikh 2014). However, the labour market integration of refugees has been neglected in the literature (Ott 2013). A better understanding of the determinants and consequences of refugee labour market performance is urgently required, given the long-standing debate on whether and how an influx of refugees affects the wages of natives in industrialised countries (Card 1990; Sparshott 2016; The Economist 2016; Borjas & Monras 2017).

In Australia, an extensive body of literature has examined different aspects of humanitarian migrants' resettlement (see the reviews in Neumann *et al.* 2014; Neumann 2016). However, the understanding of labour market performance among recently arrived humanitarian migrants has been limited. The existing studies find that humanitarian migrants have a strong desire and enormous potential to be active participants in the labour market, but they often encounter challenges that are distinct from those experienced by other migrants and Australian-born residents. These include, disrupted pre-migration education and employment, low transferability of skills, poor health and wellbeing, and discrimination in the host society (Chiswick *et al.* 2005; Colic-Peisker & Tilbury 2006, 2007; Torezani *et al.* 2008; McMichael *et al.* 2015). Using linked administrative data and personal tax records, the Australian Bureau of Statistics (2016) found that the median employee income of humanitarian migrants was well below the median employee income of all Australian taxpayers, even after ten or

more years of residence. Waxman (2001) analysed original data on the early settlement experiences of refugees from Bosnia, Iraq and Afghanistan in Sydney. Hugo (2013) used the 2006 Australian Census and the Longitudinal Survey of Immigrants in Australia to study labour market performance of humanitarian settlers. However, he acknowledged that these datasets could not be used to identify the entire stock of refugee-humanitarian settlers and their children, or even a representative sample.

Numerous scholars have called for longitudinal research into the labour market behaviour and outcomes for humanitarian migrants in Australia (Fozdar & Hartley 2013; Hugo 2013; McMichael *et al.* 2015). Yet, only a few studies have used longitudinal data to examine the employment status and work attitudes among humanitarian migrants (Correa-Velez *et al.* 2013; Correa-Velez & Onsando 2013; Newman *et al.* 2017). To help fill this gap in the literature, we examine the early labour market behaviour and outcomes for a recent cohort of humanitarian migrants who arrived in Australia, or were granted their permanent visas, between May and December 2013.

This study makes several contributions. First, this study is one of the first to use the data collected in the first two waves of the *Building a New Life in Australia* (BNLA), which is a longitudinal study designed to collect information on how recent humanitarian migrants settle into a new life in Australia from their arrival through to their eligibility for citizenship (Maio *et al.* 2014; Jenkinson *et al.* 2015). Many cross-sectional studies on refugees do not control for covariance, as Ott (2013) has indicated. In contrast to those existing studies that use data that was collected from different types of immigrants in the same sampling frame, the BNLA questionnaire is specifically designed for humanitarian migrants and provides a comprehensive set of variables. These are not available with other data and they mitigate omitted variable and sampling biases in regression analysis. By using the BNLA data with rich information at the individual level, this study also contributes to the micro-level research on refugees. This study can therefore help to supplement macro-level policy and also contribute knowledge that can address mental wellbeing problems raised by most studies, which have not clearly conceptualised the role of labour market integration in refugee adaptation and integration (Ott 2013).

Second, this study contributes to the relatively small body of longitudinal research into the labour market behaviour and outcomes of humanitarian migrants. The BNLA data allows us to apply econometric techniques for longitudinal data. We use a random effects model that enables the different sources of temporal dependence to be separated and that accounts for both time-constant and time-varying characteristics.

Third, this study contributes to the diversity of studies on humanitarian migrants' labour market performance by examining the differential effects of human capital characteristics on labour force participation and employment status. Foreshadowing the main regression results, we find that, controlling for other personal characteristics, humanitarian migrants who were employed before coming to Australia, completed a study or job training program in Australia, understand how to search for a job and speak English well, have a higher probability of participating in the labour force. We also find that those who have unpaid job experience in Australia, know how to search for a job and have better health, have an increased chance of becoming employed; meanwhile, those who have better overseas education have a lower probability of being employed. We also find evidence that these relationships change across waves.

Fourth, this study can help to inform the current public debates on humanitarian migrants' labour market performance and their economic costs to Australia's social security system. Humanitarian migrants have contributed significantly to the Australian economy and society (Hugo 2011, 2013). However, recent public discussions have focused on the low short-term employment rates among humanitarian migrants and the amount of welfare payments they receive, ranging from $AUS100 million to $AUS1.3 billion a year, depending on different estimates (Hartley & Fleay 2016). Some of these discussions quote statistics based on the first wave of the BNLA data to suggest that the employment rate among humanitarian migrants has been very low, notably around 7 per cent in the full sample in the first six months after arrival.

2. Conceptual Framework

This study is framed within the economics literature on human capital theory. Becker (1994, p. 11) defined investment in human capital, through activities that increase skills and have future monetary and psychic benefits. Becker included education, on-the-job training and health care as the means to increase human capital, notably in the form of improved skills, know-how and health. To these we would add activities such as investment in migration, language learning and acquisition of competency in seeking employment. According to human capital theory, such activities improve the productive capabilities of human beings as income-producing agents in the economy, as investments in human capital (or human capital formation). The greater returns to labour force participation and to human capital investments make it more likely that people with greater human capital will be in the labour force and earn higher incomes than those with less human capital. Therefore, human capital is seen to be a main source of labour force participation and employment.

We apply human capital theory within the analytical framework of the economics of immigration (Constant & Zimmermann 2013; Borjas 2014; Bansak *et al.* 2015; Chiswick & Miller 2015). Human capital theory states that different forms of productive and embodied skills, abilities and knowledge, such as education, vocational skills, language proficiency, work experience and health, determine labour market outcomes. This theory provides an important means for explaining immigrants' labour market performance (Chiswick & Miller 2001). Scholars of the economics of immigration have devoted increasing attention to the study of refugees and asylum seekers, who present significant challenges to immigration, employment and welfare policies in host countries (Chin & Cortes 2015; Hatton 2015). The same labour econometric tools, which are widely used in the economic studies of human capital of other immigrants, can be applied to humanitarian migrants (Hatton 2015).

Human capital, however, is not always portable between countries. Relative to natives, new immigrants face generally poorer labour market outcomes at entry because education and labour market experience acquired abroad are less valued than human capital obtained domestically (Friedberg 2000). Existing literature suggests that immigrants tend to earn less than the native-born due to the lack of transferability of human capital (Chiswick 1978; Friedberg 2000; Fortin *et al.* 2016). It is therefore necessary to empirically distinguish between human capital acquired abroad prior to immigration and human capital acquired post-immigration (Friedberg 2000).

The present study identifies within the BNLA data a set of human capital measures pertaining to pre- and post-immigration experiences. These measures capture the basic elements of human capital defined by Becker (1994), as discussed earlier. To be specific, measures on pre-immigration human capital that is acquired in home countries include education and employment experience, while measures on post-immigration human capital that is acquired or maintained in Australia include unpaid work experience, study/job training experience, job searching knowledge, English language acquisition/proficiency and health status. In section 4, we propose a series of hypotheses on the potential effects of these human capital characteristics on humanitarian migrants' likelihood of participating in the labour force or obtaining paid employment. In sections 5-6 we apply regression models to test these hypotheses. In section 7 we conduct a series of robustness checks of the regression results.

3. Existing Literature on the Labour Market Performance of Humanitarian Migrants

Recent research on the economics of immigrants provides several well-established analytical frameworks and theoretical models to analyse immigrants' labour market performance (Borjas 1989; Bodvarsson & Berg 2013; Bansak *et al.* 2015). Included among these are the model of family decision-making in immigration elaborated by Mincer (1978), the models of positive self-selection of immigrants based on the human capital theory elaborated by Borjas (1987; 1991), and the model of immigration driven by relative income elaborated by Stark and Taylor (1991).

Most standard immigration models assume that people immigrate according to their free will and conscious choice about moving from one country to another (Bodvarsson & Berg 2013). For these standard models, the main driving force of immigration centres on the differences in wages and career opportunities between the source and destination countries. And while refugee migrants do not entirely fit these assumptions, the standard models can continue to apply, because refugees do move to improve their wellbeing, albeit from desperate circumstances (Chiswick *et al.* 2005; Bodvarsson & Berg 2013; Chin & Cortes 2015).

Humanitarian migrants often exhibit significantly different labour market behaviour and outcomes from other workforce groups in their host countries due to the impact of contextual factors. For example, in Sweden refugees displayed a greater degree of structural state dependence (e.g., higher state welfare participation rates) than natives during their transitions into, and out of, social assistance, unemployment and employment (Hansen & Lofstrom 2008). In Norway, refugees' labour market convergence halted after a decade and was accompanied by rising social insurance dependency (Bratsberg *et al.* 2014). In Australia, humanitarian migrants have encountered more, and different, difficulties than other migrants and natives in finding a job, although refugee-humanitarian labour force labour market performance converges towards that of the Australia-born over time, and the second generation performs at a higher level in the labour market (Wooden 1990; Chiswick & Miller 1992; Cobb-Clark 2000; Hugo 2013).

Given the complexity of labour market performance of humanitarian migrants, the different contexts across countries and the limited availability of high-quality data, there has been no unified conceptual/theoretical model to examine their labour market behaviour and outcome, particularly during their early period of resettlement. Depending on research design and availability of data,

existing studies use different conceptual/theoretical models and analytical frameworks. For example, Kuhlman (1991) develops a theory that postulates a number of categories of factors that influence refugee economic integration, such as the characteristics of refugees and host-related factors. However, due to the limitations of survey/census data, it is usually not possible to examine all categories of factors within the Kuhlman (1991) theoretical model (Potocky 1997). Indeed, Kuhlman (1991) suggested that a partial analysis is usually more feasible than a comprehensive one and is more useful in studying refugees.

Contradictory results often arise in many of the empirical studies of humanitarian migrants. For instance, Potocky (1997) found that the length of residence in the US was of less importance in predicting the economic status of refugees. In a replication of the Potocky and McDonald (1995) study on southeast Asian refugees in the US, Potocky (1997) found a different set of the most significant predictors in predicting the economic status of Cuban, Haitian, Nicaraguan, and Soviet/East European refugees. Hebbani and Preece (2015) found no statistical significance between employment and demographics, such as age, gender, or marital status, and length of residence in Australia, time spent in refugee camps, English proficiency, including reading, writing or numeracy, or level of education. In this study the only variable that mattered was spoken English proficiency.

The above considerations have resulted in various empirical strategies adopted in the literature. Some studies have attempted to provide a more comprehensive picture. For example, Waxman (2001) reviewed the dominant factors exerting an influence on economic adjustment outcomes for refugees and developed two propositions based on the pre-arrival characteristics and post-arrival reception experiences in Sydney, Australia of humanitarian migrants from Bosnia, Afghanistan and Iraq. However, this study only tested the mean differences of variables between those who were employed and unemployed. de Vroome and van Tubergen (2010) grouped the predictors of the employment experiences of refugees in the Netherlands into categories of human capital, social capital, health problems, and admission and integration policies. Correa-Velez *et al.* (2013) employed a conceptual model for predicting employment status over time among refugee migrant men living in Queensland, Australia. Their conceptual model categorised potential predictors of employment into several domains, such as education, health and socio-demographic characteristics. Other studies, reviewed by Ott (2013), have tended to be more focused on specific domains of the variables mentioned above.

4. Hypothesis Development

This study aims to answer the following research question:

What is the role of human capital for humanitarian refugees in the Australian labour market?

To address this question, this study examines the short-term effects of human capital in predicting humanitarian migrants' participation in the labour force and success in obtaining employment in the Australian labour market. Understanding short-term labour market behaviour and outcomes of humanitarian migrants is important since those who are unemployed from the outset are likely to be economically and socially excluded in the host society as the result of the lack of economic gains and social contacts through paid work (Valtonen 1998; Marston 2004).

We first consider the potential short-term effects of pre-immigration education and job experience on labour force participation and employment status. Existing studies have found positive, negative and insignificant associations between pre-immigration educational attainment and economic success (in long run) for refugees. In the US, both the total years of education obtained overseas and domestically and the years of local education have positive correlations with working in skilled occupations among refugees (Connor 2010). In the Netherlands, both domestic and overseas qualifications have been found to have positive effects on refugee employment and occupational status, although local education has had a greater impact than foreign education (de Vroome & van Tubergen 2010). In Canada, highly educated refugees who had held professional and managerial position before arrival experienced downward occupational mobility (Krahn *et al.* 2000) and refugees' human capital was found to have had little or no value in the Canadian labour market (Lamba 2003). In Australia, existing studies found that having an overseas qualification is not a significant predictor of employment status (Waxman 2001; Correa-Velez *et al.* 2013), and that unemployment and underemployment of highly educated refugees are prevalent (McDonald-Wilmsen *et al.* 2009).

Studies have suggested that better educated refugees may be more disadvantaged in the short term in host country labour markets. In the Dutch labour market, refugees faced the steepest decline in occupational status after immigration (Zorlu 2013); and higher education acquired in home countries did not pay off during the first five years (Hartog & Zorlu 2009). In Australia, newly arrived humanitarian migrants often experience institutional barriers erected by trade and professional associations and employers. Prejudice against foreign qualifications has been found to undermine formal qualification recognition and transferability, which prevent such migrants from securing adequate jobs (Marston 2004; Colic-Peisker & Tilbury 2006, 2007; Fozdar & Torezani 2008). In addition, in a segmented labour market that priviledges low-paid and low-skilled jobs, the better educated humanitarian migrants have been found to be less competitive than the lower educated (Colic-Peisker & Tilbury 2006; Settlement Services International 2016b). To investigate whether these circumstances discourage better educated humanitarian migrants from participating in labour force or disadvantage them in obtaining a paid job, we propose hypotheses 1a and 1b on the relationships between pre-immigration education and labour force participation and employment status.

Hypothesis 1a. Higher pre-immigration education is negatively associated with labour force participation.

Hypothesis 1b. Higher pre-immigration education is negatively associated with employment status.

Many new humanitarian migrants consider getting a job as a priority (Refugee Council of Australia 2010). We expect that humanitarian migrants who had paid work experience prior to coming to Australia are more likely than those who were not employed in the past to participate in the labour force because the former have stronger motivation to harness their human capital.

Similar to pre-immigration education, paid work experience prior to coming to Australia is usually not recognised or valued by potential employers in the Australian labour market (Marston 2004; Colic-Peisker & Tilbury 2007; Patty 2016). To investigate whether pre-immigration work experience

helps to improve humanitarian migrants' chances to obtain paid employment, we propose hypotheses 2a and 2b.

Hypothesis 2a. Having pre-immigration paid work experience is positively associated with labour force participation.

Hypothesis 2b. Having pre-immigration paid work experience is negatively associated with employment status.

Human capital accumulated in host countries has been found to be important for immigrants (Friedberg 2000; Bloch 2008; Connor 2010; Fortin *et al.* 2016) in existing studies, which have concluded that immigrants' economic success depends on how immigrant skills and experiences adapt to the host country's labour market (Chiswick 1978). We therefore consider the significance of post-immigration experience in unpaid work, completion of study/job training in Australia, and knowledge in local job hunting for participating in the labour force and finding a paid job.

In the BNLA sample, most humanitarian migrants were relatively new to Australia and thus lacked local work experience. One potential channel for them to accumulate local human capital is through unpaid work in family businesses, volunteering, or through traineeships and internships (Refugee Council of Australia 2010; Patty 2016). In Canada, it was found that returns to volunteering accounted for 6-7 per cent of annual earnings (Day & Devlin 1998). In Austria, the number of volunteering hours plays a major role in explaining the wage premium through the accumulation of human capital (Hackl *et al.* 2007). On the assumption that those who engage in unpaid work are more active in finding a job and more likely to get a paid job because they have accumulated local work experience or other forms of human capital, which are more valued by local employers, we propose hypotheses 3a and 3b.

Hypothesis 3a. Having post-immigration unpaid work experience is positively associated with labour force participation.

Hypothesis 3b. Having post-immigration unpaid work experience is positively associated with employment status.

Vocational and other forms of education in host countries are usually considered as the most important aspects of integration because they enhance employability either in general terms or through improvements to specific language or work skills (Ager & Strang 2008). It has also been suggested that completion of study/job training in Australia enhances humanitarian migrants' confidence and willingness to participate in the labour force (Refugee Council of Australia 2010). We therefore propose hypotheses 4a and 4b.

Hypothesis 4a. Completion of post-immigration study/job training is positively associated with labour force participation.

Hypothesis 4b. Completion of post-immigration study/job training is positively associated with employment status.

It has been suggsetd that in Australia familiarity with job searching approaches and skills (including knowlegde of how to search for job opportunities online or through informal networks, prepare job applications and attend interviews) are important for humanitarian migrants to secure paid employment (Refugee Council of Australia 2010; Correa-Velez *et al.* 2013; Centre for Multicultural Youth 2014; Settlement Services International 2016a). We therefore propose hypotheses 5a and 5b.

Hypothesis 5a. Knowledge about how to find a job in Australia is positively associated with labour force participation.

Hypothesis 5b. Knowledge about how to find a job in Australia is positively associated with employment status.

Language skills are considered as important to human capital (Chiswick & Miller 2010). Such skills have been found to improve labour market assimilation for immigrants through job opportunities and job matches, as well as through their contribution to increasing the productivity of other forms of human capital (Chiswick & Miller 2001; Adserà & Pytliková 2016). For example, proficiency in the host country's main language is considered a key determinant of both earnings and employment, given the importance of communication skills in modern economies. In the UK, English-language fluency increases employment probabilities by approximately 20 percentage points and earnings by a maximum of 20 per cent (Dustmann & Fabbri 2003). By contrast; poor English-language skills make an important contribution to the higher unemployment rates for ethnic minority males and lower economic activity rates for ethnic minority females (Leslie & Lindley 2001). In the US, the best predictor for higher wages amongst refugee men is English proficiency (Mamgain & Collins 2003). In Australia, proficiency in English has been found to be a significant predictor of labour market outcomes for refugees (Waxman 2001; Khoo 2010; Hebbani & Preece 2015). Also in Australia, Marston (2004) found that not being able to read job advertisements written in English makes securing employment difficult for humanitarian migrants. We therefore propose hypotheses 6a and 6b.

Hypothesis 6a. Greater proficiency in English is positively associated with labour force participation.

Hypothesis 6b. Greater proficiency in English is positively associated with employment status.

According to Becker (2007), health is an important aspect of human capital, and it links to education and other forms of human capital investments. Poor health inhibits positive employment outcomes among refugees (Marston 2004; Connor 2010; de Vroome & van Tubergen 2010). In Australia, Khoo (2010) found that humanitarian migrants with poor health were less likely than other migrants with strong health to be in the workforce, and Marston (2004) found that ill health affected humanitarian migrants' ability to learn new skills, acquire education and secure employment. While Correa-Velez *et al.* (2013) did not find physical health to be a significant predictor of employment among male refugees, their study only used a small African sample living in Queensland, Australia. In this study, we use the BNLA data to re-examine the potential effect of health as an aspect of health.

Hypothesis 7a. Better health is positively associated with labour force participation.

Hypothesis 7b. Better health is positively associated with employment status.

5. Data and Methods

5.1 Data

The BNLA is commissioned by the Department of Social Services of the Australian Government and managed by the Australian Institute of Family Studies. Following a large cohort of humanitarian migrants as they settle into Australia, the BNLA is designed to collect data annually from 2013 to 2018 via home visits in Waves 1, 3 and 5 and telephone interviews in Waves 2 and 4. This study uses available data from the first two waves of BNLA, which were collected between October 2013 and March 2014 (Wave 1) and between October 2014 and March 2015 (Wave 2).

The BNLA data has many advantages that other datasets do not have. Relatively few countries (e.g., Australia, Canada, Denmark, Italy, Sweden and the US) enable researchers to identify refugees in the populations using linked general-purpose survey and administrative data (Chin & Cortes 2015; Ortensi 2015). Indeed, finding or collecting adequate, specific and nationally representative data on (recent) refugees has been difficult (Spring *et al.* 2003; Åslund & Rooth 2007; Connor 2010; de Vroome & van Tubergen 2010). In Australia only a few studies have examined humanitarian migrants within the whole population of immigrants using general-purpose survey data (Cobb-Clark 2000; Chiswick *et al.* 2005) and most of the studies on the labour market outcomes of humanitarian migrants in Australia have been concerned with particular ethnically defined groups or only refugees. By contrast, the BNLA draws a sample from the full population of recently arrived/approved humanitarian migrants through both onshore and offshore migration pathways (i.e. both asylum seekers and refugees who were granted a permanent visa).

The BNLA collects information on personal backgrounds, migration pathways, housing, language, employment, education and related social and economic issues. The BNLA study recruited 2,399 individuals who had been granted permanent humanitarian visas via Australia's offshore and onshore pathways under the Humanitarian Programme. Humanitarian migrants were eligible for recruitment if, in the three to six months before the study, they had newly arrived in Australia under the offshore program or they had been granted their humanitarian visas under the onshore program. Most BNLA participants arrived through an offshore pathway (84 per cent). This finding reflects the composition of Australia's Humanitarian Programme at the time of the participant recruitment in Wave 1.

Selection into the study was based on the migrating unit named on the humanitarian visa application, which could consist of a single individual or members of a family. The adult Principal Applicant on the application (the person on whom approval for a permanent visa was based) was designated the lead participant for the BNLA study. The Principal Applicant was required to be aged 18 years or over. Secondary Applicants consisted of other adults or adolescents in the migrating unit. Similar to other studies (Cobb-Clark 2000; Chiswick *et al.* 2005), we restrict our samples to those who were aged 15-64 years.

5.2 Econometric Model

We estimate the following function using the BNLA panel data:

$$y_{it} = \alpha_i + \beta H_{it} + \gamma X_{it} + \varepsilon_{it}$$

where y is a binary outcome variable (yes = 1; no = 0) on labour force partcipation or employment status for individual i at wave t; α is a subject specific effect; H is a vector of variables on human capital; X is a vector of control variables; and ε is the composite error term.

The BNLA has released two waves of longitudinal data, in which repeated observations on each individual are not independent over time. In accordance with the existing studies on individual outcomes using (short) longitudinal data (De New & Zimmermann 1994; Husted *et al.* 2001; Nikolaev 2016; Wang *et al.* 2017), a random effects logistic regression model is applied to the BNLA data to account for unobserved heterogeneity.[1] Compared to a fixed effects model that assumes a common effect size, a random effect model is more useful in the present study because it also estimates the effects of both time-invariant and time-varying variables of interest. We also analyse cross-sectional data in Waves 1 and 2 to supplements the random effects model.

5.3 Measures

5.3.1 Labour force participation and employment status

This study examines two variables measuring labour market behaviour and outcome. The first variable is labour force participation in the full sample (1 = in a paid job in the last seven days, or actively sought a paid job in the last four weeks; 0 = otherwise). The second variable is employment status in the sample of currently active labour force participants (1 = in a paid job in the last seven days; 0 = no). Appendix Table A1 provides more detailed definitions of these variables.

5.3.2 Human Capital

Participant's educational attainment before immigration is categorised into four groups, namely never attended school (reference group), primary education, secondary education and tertiary education.

Other variables include a set of dummy variables (yes = 1; no = 0) on whether the participant: (1) completed a study/job training program in Australia; (2) had paid work experience before coming to Australia; (3) had unpaid work experience in Australia; and (4) has the knowledge about how to find a job in Australia.

[1] As a robustness check, in accordance with some existing studies, we use the generalised estimated equations (GEE) to estimate a population averaged model that pools observations from Waves 1 and 2 (Aydemir 2011; Correa-Velez *et al.* 2013). The population averaged model estimates the population averaged effect across time. Both random effects and population averaged models take advantage of the panel structure of the data.

In the BNLA, the proficiency in English is measured on a four-point scale from low to high on four dimensions, notably understanding spoken English, and speaking, reading and writing English. This information allows us to examine the potential effects of the different dimensions of English ability. Most studies on refugees only measure general English proficiency. However, certain dimensions of English-language proficiency may be more important than others in the labour market. For example, a suitable English speaking ability may be more important than writing and reading abilities in jobs that require intensive oral communication (Husted *et al.* 2001).

Health status is measured as self-assessed general health on a six-point scale from very poor to excellent. This measure is validated and widely adopted in the literature (Doiron *et al.* 2015).

5.3.3 Control Variables

We include a set of control variables. These include age, gender, marital status, engagement in looking after family/home duties, household financial hardship, the length of stay in Australia, and whether the participant held a bridging visa in Australia while waiting for their permanent visa application to be reviewed, and the types of permanent humanitarian visa granted. To account for local socioeconomic conditions, we also include in the regressions the Australia Bureau of Statistics (ABS) Index of Relative Socio-Economic Disadvantage (IRSD) that summarises a range of information about the economic and social conditions of people and households within an area. We redefine the IRSD into deciles (1 = most disadvantaged; 10 = least disadvantaged). The IRSD includes variables on economic resources, labour market conditions, local education and occupation composition and so on.[2] Appendix A2 and A3 illustrate the correlations between variables.

Below we briefly explain the rationale for controlling for these variables in regression analysis. The literature finds that the labour market behaviour and outcome of humanitarian migrants are correlated with some individual characteristics. For instance, female and older refugees have been found to have weaker employment and earnings prospects (Husted *et al.* 2001; Waxman 2001). In addition, the greatest difference in employment has been found between men and women (Bloch 2008). However, Connor (2010) did not find age to be a significant predictor of wages among refugees. Another study concluded that, among men who are not self-employed, age at arrival has no significant impact on wages (Mamgain & Collins 2003). Husted *et al.* (2001) found that refugees who are married are more likely to be employed but have lower hourly wage than those who are not married and those who need to look after family/home duties are less likely to participate in the labour force or be less likely to be employed due to time constraints, work-family conflicts and lack of flexible work arrangements resulting from part-time work or working from home arrangements.

While it stands to reason that humanitarian migrants experiencing financial hardship may be more likely to actively looking for a job to meet financial needs, the theory of job search suggests that job searching is costly, which is therefore likely to make it harded forthose who lack the financial means to find a job. The length of stay in the host country has also been found to be significantly correlated with labour market outcomes of humanitarian migrants (Husted et al. 2001; Aydemir 2011; Correa-

[2] For the list of variables used to calculate the IRSD, see ABS Catalogue No. 2033.0.55.001 on http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2033.0.55.001main+features100052011.

Velez et al. 2013). Nonetheless, the existence of this effect may depend on the labour market outcome being examined. For instance, Connor (2010) found that spending more years in the US had no effect on working in skilled occupations but did have a significant impact on refugees' hourly wages.

As explained earlier, Australia's Humanitarian Programme has offshore and onshore pathways for refugees and asylum/protection seekers repectively. While onshore applications for refugee status are being processed, some refugees are granted bridging visas and allowed to live in the wider community but with limited or no work rights (Van Selm 2000; Fleay & Hartley 2015). On one hand, bridging and temporary visas have hampered humanitarian migrants' employment prospects (Marston 2004) and caused distress and fear particularly in regard to the uncertainty about their refugee claims in Australia (Fleay et al. 2013; Fleay & Hartley 2015; Crawford et al. 2016). On the other hand, being able to live in the community, instead of in immigration detention, provides opportunities for learning the local language and developing contacts with members of the majority groups and thus enhancing human and social capital. Such interaction is found to be important for refugees in other countries (Wachter et al. 2016). However, tittle is known about the potential effects of such refugee immigration experiences during their resettlement in Australia.

The characteristics of neighbourhoods where migrants live have also be found to affect their labour market outcomes (Cheng & Wang 2013). Local socioeconomic conditions encountered by immigrants have long-term effects on labour market outcomes (Åslund & Rooth 2007). Connor (2010) found that living in disadvantaged neighbourhoods has an adverse impact on refugees' economic outcomes. Rashid (2009) found that internal migration in the host country from places with few jobs to others with greater employment opportunities has a positive outcome for refugees. Accordingly, it is necessary to account for local socioeconomic conditions in the analysis of labour market behaviour and outcomes.

6. Results

6.1 Descriptive Analysis

Table 1 presents the descriptive statistics of the outcome variables (top panel) and explanatory variables (bottom panel) for Waves 1 and 2 of BNLA. The last column presents the level of significance between the means of variables in the two waves. The null hypothesis is that there is no statistically significant difference in means.

[Table 1 here]

As the Table shows, the labour force participation rate increased from 21.3 per cent in Wave 1 to 26.8 per cent in Wave 2. The employment rate in the active labour force also increased from 29.6 per cent in Wave 1 to 60 per cent in Wave 2. The increases in labour force participation and employment rates are statistically significant between the two waves.

Most humanitarian migrants had completed secondary education (47.5 per cent). More than half of them had a paid job before coming to Australia. Post-immigration human capital has been significantly improved in certain aspects between the two waves. These aspects include completion

of study/job training from 2.4 to 6.7 per cent, knowing how to find a job from 18.5 to 38.2 per cent, as well as all four aspects of proficiency in English. Among the control variables, there is was a significant increase in the percentage of households, which experienced financial hardship, from 25.6 per cent to 36.6 per cent.

In sum, Table 1 suggests that humanitarian migrants were more likely to participate in the labour force and obtain a paid job after spending a certain period in Australian under the permanent humanitarian visa scheme. An increased proportion of humanitarian migrants experienced financial hardship between the two waves. Meanwhile, they significantly improved their human capital by accumulating job searching skills, improving their proficiency in English and completing study/job training. Below we present results from random effects logistic regression of labour market behaviour and outcomes on these explanatory variables.

6.2 Longitudinal Results

Table 2 presents the marginal effects of the explanatory variables on labour market behaviour and outcomes using the random effects logistic model. Model 1 presents the results for labour force participation and shows that participants who were employed before coming to Australia, completed study/training in Australia, know how to look for a job in Australia and have better English speaking skills are 3.3, 2.3, 3.0 and 1.9 times more likely to participate in the labour force, respectively. These findings support Hypotheses 2a, 4a and 5a. Hypothesis 6a is partially supported.[3]

Consistent with the directions of predictions in Hypotheses 1a and 3a, we also find that education is negatively related to, and that unpaid work experience in Australia is positively related to, labour force participation; but their coefficients are statistically significant only at the 10 per cent level.

[Table 2 here]

Model 2 presents the results for the employment status of labour force participants. Compared with humanitarian migrants who never attended school, those who completed secondary and tertiary education are 0.5 and 0.3 times likely to be employed. Hypotheses 1b is supported.

We also see that pre-immigration employment and post-immigration study/job training, which are a significant predictor in model 1, are not a significant predictor in model 2. Hypotheses 2b and 4b are not supported. Those who have unpaid work experience in Australia, know how to find a job in Australia and have better health are more likely to be employed. Hypothesis 3b, 5b and 7b are supported. None of the four dimensions of proficiency in English is significant in predicting employment status. Hypothesis 6b is not supported.

Summarizing the main results on human capital variables in Table 2, humanitarian migrants who were employed prior to coming to Australia, completed study/job training in Australia, have better job searching skills and have better English speaking skills have a higher probability of participating in the labour force. Humanitarian migrants who had unpaid work experience in Australia, know how

[3] We conduct variance inflation factor (VIF) analysis for the specifications on labour force participation and employment status. All VIF values are well below ten. As a rule of thumb, a VIF of ten or greater is a cause for concern.

to search for a job and have better health have an increased chance of becoming employed. However, humanitarian migrants who completed secondary and tertiary education overseas are less likely than those who never attended school to find a job.

In models 1 and 2 we included a set of control variables. In model 1, older age and having family/domestic duties were found to have negative impacts on labour force participation. Those who are males, are married and live in less disadvantaged suburbs are more likely to participate in the labour force. Those who had held bridging visas and spent longer time in Australia are more likely to participate in the labour force. This is probably because they are more familiar with the local labour market, have more local connections and because employers are more inclined to employ humanitarian migrants who have stayed in Australia longer.

Model 2 shows that household financial hardship will decrease the probability of being employed. One potential explanation is that refugees in financial hardship lack the necessary resources to search for jobs and succeed in selection processes. For example, in Australia, owning a car can help refugees to search for jobs in a larger geographic area and it has been correlated with successfully finding a job (Colic-Peisker & Tilbury 2007; Correa-Velez *et al.* 2013). Many refugees in financial difficulty cannot dress well for job interviews, thus lowering their chance of being recruited.[4] Model 2 also shows that being in Australia for longer than a year is associated with a 227 per cent higher chance of employment.

In summary, in models 1 and 2, the findings of some of the statistcially significant control variables in predicting labour force participation and employment status are consistent with some existing studies, such as age (Waxman 2001; Australian Survey Research Group 2011); gender (Potocky-Tripodi 2001); proficiency in English (Hugo 2011; Correa-Velez *et al.* 2013); and length of time in host society (Waxman 2001; Aydemir 2011).

6.3 Heterogeneity across Genders and Migration Pathways

Humanitarian migrants are not necessarily positively selected based on earnings capacity in the immigrant country (Chiswick 1999). Compared to natives and skilled immigrants, humanitarian migrants usually have a lower proficiency in the local language, less education and more difficulties to have their qualifications and work experiences recognised by employers. In other words, there may be a negative selection of low-skilled humanitarian migrants into developed countries with highly compressed wage structures and relatively generous and universal welfare benefit systems (Andersen *et al.* 2009; Bratsberg *et al.* 2014; Chin & Cortes 2015). Humanitarian migrants can also be positively selected on socio-demographics and human capital resources preferred by the host society through different migration pathways. For example, wealthier and healthier humanitarian migrants are more likely to afford the costs, and endure the difficulty, of immigration (Sherlock & Malouf 2013; McHugh 2015). The selection of humanitarian immigration implies that heterogeneity in labour

[4] Recognizing this issue, some organizations offer free service that provides professional business attire to humanitarian migrants who are unable to afford quality clothing. This helps them to make a good first impression at job interviews for refugees, and thus improve their likelihood to get appointed. See, for example, the Dress for Work program (https://dressforwork.org.au/).

market performance may exist across different sub-samples of humanitarian migrants. However, most existing research in Australia has not examined this issue.

The above discussion on selection of immigration implies potential heterogeneity across gender groups and migration pathways. We examine in more details of the relationships between human capital and labour force participation and employment by comparing males and females and onshore and offshore humanitarian migrants.

Models 1 and 2 in Table 3 present the marginal effects of the explanatory variables on labour force participation by gender. There are several findings. First, males who completed pre-immigration primary and secondary education are less likely to participate in the labour force (odd ratios = 0.5). Second, pre-immigration work experience and higher proficiency in spoken English increase the probability of labour force participation. Their positive effects are stronger for females than males. Third, completion of study/training and knowledge about how to find jobs are significant predictors for males only. The male samples support Hypothesis 1a, 2a, 4a, 5a and 6a. The female samples support Hypothesis 2a and 6a.

[Table 3 here]

Models 3 and 4 in Table 3 present the marginal effects of explanatory variables on labour force participation by migration pathways. First, among both onshore and offshore humanitarian migrants, those having better job searching skills are more likely to be in the labour force. Second, among onshore humanitarian immigrants, those who had pre-immigration job experience and completed post-immigration study/job training are likely to be in the labour force. Third, among offshore humanitarian migrants, those who speak better English are more likely to participate in the labour force. The onshore pathway samples support Hypothesis 5a and the offshore pathway samples support Hypothesis 2a, 4a, 5a and 6a. The results of Table 3 highlight the heterogeneity in labour force participation among male/female and onshore/offshore humanitarian migrants. However, no single explanatory variable can consistently predict labour force participation across all sub-samples.

Table 4 presents the marginal effects of the explanatory variables on employment status across sub-samples of male and onshore and offshore humanitarian migrants. The female sample cannot be estimated due to the small sample of employed women. The results of model 1 (males) support Hypotheses 1b, 3b, 5b and 7b. The results of model 2 (onshore) support Hypothesis 5b and those of model 3 (offshore) support Hypotheses 1b and 5b.

[Table 4 here]

6.4 Cross-Sectional Results

The two sub-sections above present the random effects logistic estimations using the longitudinal data. This sub-section further investigates whether the statistical relationships differ in each wave. We use logistic regression to estimate the cross-sectional data from individual waves. Results on labour force participation and employment status are presented in Tables 4.

[Table 4 here]

Models 1 and 2 present the marginal effects of explanatory variables on labour force participation. The marginal effects of pre-immigration work experience, knowledge about finding a job and spoken English ability are higher in Wave 2 than in Wave 1. Completion of study/job training has a positive effect in Wave 2 only.

Models 3 and 4 show the marginal effects for employment status. None of the explanatory variables is statistically significant in Wave 1. In Wave 2 knowledge of how to find a job is a positive predictor of employment status, while secondary and tertiary education have negative effects on employment status.[5]

7. Robustness Checks

Below we discuss robustness checks of our results. The results are not presented here to conserve space but they are available from the authors.

Immigrants usually experience downward occupational mobility from the last job in the country of origin to the first job in the destination country (Chiswick *et al.* 2005). Humanitarian migrants who were in certain occupations in their home countries may choose not to join the labour force in Australia, perhaps to avoid the negative shocks of downward occupational mobility. In addition, humanitarian migrants in certain pre-immigration occupations may be less likely to find a job in Australia due to discrimination, or low supply of suitable jobs. If pre-immigration occupations play a systematic role in our model, the dummy variable on 'employed in a paid job before immigration' may not be able to capture the potential effects of occupations on labour force participation and employment status. Therefore, in the first robustness check of the results in Table 2, we replaced the dummy variable on 'employed in a paid job before immigration' with occupations (the reference group is 'not employed in a paid job before immigration').[6] The results show that none of the pre-immigration occupations had a significant effect on labour force participation or employment status in the short-term. The immigrant assimilation model suggests that, in the longer term, there may be upward occupational mobility from the first job to subsequent jobs in the destination country (Chiswick *et al.* 2005). Therefore, it is possible that humanitarian migrants accepted the initial job offers available to them, without worrying about or because they had no control over remuneration, working hours or occupational match and status. It is possible that the longer that they remain in Australia, they will be better able to choose jobs that best match their abilities and aspirations. If this hypothesis is correct, then wage, work hours and occupational status will be better explained by the explanatory variables using future data. We leave this to future research when more waves of data become publicly available.

[5] We used a *t*-test to examine whether the estimated coefficients are significantly different between the two waves. In the labour force participation models, none of the coefficients are significantly different between the two waves. In the employment status models, the coefficients on knowing how to find a job and the length of stay in Australia are significantly different between the two waves.

[6] In the BNLA pre-immigration occupations were analysed and coded under 8 major occupations or 43 sub-major occupations according to the 2009 Australian and New Zealand Standard Classification of Occupations (ANZSCO) (ABS Catalogue No. 1220.0). Neither major nor sub-major occupations are statistically significant in the estimates.

Besides human capital, social capital is also found to be associated with successful assimilation of humanitarian migrants in host societies and economies (Calvo-Armengol & Jackson 2004; Cheung & Phillimore 2014). Although in our models the length of stay in Australia can capture some potential effects of social capital, we have not specifically examined the domain of social capital. In other words, the remaining effects of social capital, if any, are captured by the residuals of the model. The second robustness check of the results in Table 2 was conducted by adding several variables to the model pertaining to local social capital, such as ease in making new friends in Australia; ease in understanding Australian ways/culture; and support received from national/ethnic, religious and/or other communities in Australia. The results show that these variables are not statistically significant and do not qualitatively change the results found in relation to human capital and control variables. One potential reason may be that the respondents were relatively new to Australia so their local social capital was limited or yet to be useful in the labour market. Nonetheless, future research should consider the role of social capital as well as its interaction with human capital and other individual and local characteristics. For example, while it is believed that larger social networks have beneficial effects on employment outcomes in general (Calvo-Armengol & Jackson 2004), the number of social network members can, according to Beaman (2012), negatively affect refugees' labour market outcomes in certain circumstances in the US.

The third robustness check addressed potential reverse causality that may run from contemporaneous positive labour force participation/employment experience to the contemporaneous measure of knowing how to find a job.[7] To rule out reverse causality, we regressed labour force participation/employment status in Wave 2 on the lagged variable of knowing how to find a job (measured in Wave 1), controlling for a full set of other variables. The results show that lagged job searching knowledge has a significantly positive effect on labour force participation (marginal effect = 9 per cent; $p < 0.001$) and employment status (marginal effect = 17 per cent; $p < 0.05$).

The fourth robustness check considered whether those who failed to find a job did not participate in subsequent surveys, resulting in potential missing not at random (MNAR) in the outcome variables. First, the BNLA project team found that employment was not a significant factor in predicting the participation of Wave 1 participants' in Wave 2 (Australian Institute of Family Studies 2016). Second, only two labour force participants in the Wave 1 did not participate in the Wave 2 survey. We imputed the data for these two missing observations and re-estimated the regression on employment status. The results are almost the same. Therefore, potential MNAR does not affect the findings.

Finally, as a robustness check of the random effects model, we employed a hybrid model (or within-between estimator) which decomposes each time-varying component into a within-person component (i.e. the deviation from individual-specific mean) and between-personal component (i.e. the mean of each individual-specific variable). This estimator is equivalent to the conventional fixed effects estimator. The results from the within-between estimator are consistent with the results from random effects estimator.

[7] In this study, we do not intend to address potential endogeneity of other independent variables due to limited variations between the two waves which were collected within 18 months. Some studies in labour economics use lags and/or leads of independent variable as instrumental variables to identify causal relations (Wang *et al.* 2017). However, we cannot find valid instrumental variables in the BNLA data. Future research can reconsider this when more waves are released.

8. Discussion and Future Research

The random effects logistic estimates using the full sample in Table 2 show that labour force participation and employment status are predicted by different combinations of human capital variables. For instance, humanitarian migrants who completed secondary and tertiary education prior to immigration are less likely to be employed. Those who had pre-immigration job experience are more likely to participate in the labour force; but pre-immigration job experience has no significant effect on getting a job. The reason may be that highly educated refugees were unable to fully utilize their overseas qualifications in the Australian labour market (Bloch 2006; Hugo 2011), and that overseas educational and professional attainments cannot transfer over to a more comprehensive measure of a migrant's human capital (Borjas 2014). The negative or zero labour market returns to pre-immigration education and job experience are consistent with Aydemir (2011). Overall, the contribution of observed characteristics, including varied forms of human capital and control variables, for explaining labour market participation and employment status is modest in the full sample. This is consistent with literature that shows that demographic, human capital and local characteristics explain a relatively small portion of differences in labour market behaviour and outcomes among immigrants/refugees (De Silva 1997; Aydemir 2011; Borjas 2014). This also reflects the importance of unobserved differences in humanitarian migrant characteristics (Aydemir 2011). Nonetheless, the insignificant or negative effects of human capital in the short-term should be interpreted with caution. In the longer-term, humanitarian migrants with better education and experience may invest in local human capital and go through qualification or professional accreditations (Aydemir 2011; Hugo 2011).

A more detailed examination of labour market participation and employment status across genders and immigration pathways reveals the strong heterogeneity among humanitarian migrants. For example, the results in Tables 3 and 4 show that the negative effects of pre-immigration education on labour force participation and employment status are observed for males but not for females.[8] This is consistent with Aydemir (2011), who suggested a possible pattern of family investment decisions among immigrants where males invest more in skill upgrading. These findings imply that more tailored employment assistance may be required for improving employment prospects for different genders. However, the current policies, services and programs designed to improve humanitarian migrants' labour market performance generally do not target different labour market behaviour and outcome or distinguish different sub-groups.

In Canada, spoken English ability has been found to be a significant predictor of immigrants' labour force participation, employment and earnings (Aydemir 2011). However, our results for Australia show that higher proficiency in spoken English improves labour force participation but it does not have a significant effect on getting a job. Empirical evidence shows that this may due to the segregated labour market for humanitarian migrants, where higher proficiency in English is not highly valued in low-level jobs. This was the case for a study conducted in Italy (Ortensi 2015). Difficulties in English language acquisition facing humanitarian migrants could also be a factor as was shown in a Canadian case study (Chiswick & Miller 2001). In Australia, the Adult Migrant English Program (AMEP) is available to refugees who do not have a functional level of English.

[8] Again, note that employment status of females cannot be estimated in Table 4 due to a small sub-sample.

Improving employment prospects is a critical motivation for AMEP students (AMES Australia 2010). However, the AMEP is not adequate for humanitarian migrants with little formal past education to become functional in English (Hebbani & Colic-Peisker 2012), and the hours of tuition are considered insufficient (Australian Survey Research Group 2011). In general, our results are in line with the recommendation that AMEP service should be further refined to be more flexible and better integrated into educational and skills pathways (Joint Standing Committee on Migration 2013).

Although the BNLA data does not provide detailed information on the types of study or job training that participants have participated in, existing qualitative research can provide some potential explanations as to why completing study/job training in Australia increases labour force participation rates but not employment rates. For instance, the Refugee Council of Australia (2010) argued that humanitarian migrants who had completed certificate-level courses found no clear pathways into relevant industries, that acquired certificates were not recognised within the industry in which they wished to work due to the large number of small registered training organisations (RTOs) offering courses that employers are unfamiliar with, the variation in the quality of RTOs, and that employment service providers are not accountable for the employment outcomes of their services. It is suggested to the Australian government that a clear link should be established between training providers and particular industries with work opportunities provided in the industry as part of the accredited training (Refugee Council of Australia 2010). We concur with this proposal from the Refugee Council, as it echoes our finding on the importance of having local work experience in securing a job. We believe that a greater understanding of the factors that drive refugees' short-term labour market behaviour and outcomes can be obtained by using a mixed methods approach that combines quantitative and qualitative data.

This study has several limitations. These may be useful for identifying future research directions. The results from the cross-sectional data (Table 5) suggest that the relationships between personal characteristics, human capital and labour market behaviour and outcomes may differ over time. Dynamic interactions may exist between human capital and other personal characteristics, such as financial hardship, which can affect the capacity to obtain paid employment and further reinforce hardship and future employability. The current short longitudinal data does not allow us to examine such potential dynamics. Examining more waves of data is crucial to understand how these relationships evolve. We leave this to future research.

Completion of study/job training was found to play no significant role in improving humanitarian migrants' employment status in the short-term. However, this may change in the longer-term. According to prior research, humanitarian migrants' labour market outcomes will converge with natives and other immigrants over time after they invest more in host country human capital. Therefore, our study cannot be regarded as an evaluation of the Humanitarian Programme or the resettlement system. From an economic point of view, more patience should be given to any programmes that aim to improve the human capital and wellbeing of humanitarian migrants.

As discussed earlier, some of our findings are consistent with the literature in Australia and/or other countries. Nonetheless, our results may not be suitable to be directly compared with those in other studies in Australia. As the first survey of the population of humanitarian migrants in Australia, the BNLA data is unique. Most studies in Australia and other countries have used a relatively small, and

often non-random, sample of a specific ethnic group (Fleay *et al.* 2016), or used general-purpose survey data, which was not representative of humanitarian migrants (Hugo 2013). Our findings may not be generalized to other countries due the inter-country differences in immigration/refugee and welfare policies, geopolitical circumstances, geographical locations and so on that contribute to systematic differences in the populations of humanitarian migrants.

Under the new legislation that came into effect in Australia in late 2014, asylum seekers who arrive by boat and who were formally recognised as refugees can no longer be granted a permanent visa. Instead, they receive a Temporary Protection Visa for three years or a Safe Heaven Enterprise Visa for five years. These temporary visas disadvantage their holders in finding a job and settling in Australia (Refugee Council of Australia 2017). Currently approximately 30,000 people are eligible to apply for these temporary visas (Settlement Services International 2016b). The BNLA data only includes humanitarian migrants who were granted permanent visas. Thus, the BNLA data cannot capture this important change in legislation.

9. Conclusion

This study examined the early labour market behaviour and outcome of recently arrived/approved humanitarian migrants in Australia using the newly available longitudinal data collected from the population of humanitarian migrants.

The decripitive analysis shows that, within approximately one year of arrival, humanitarian migrants' labour force participation and employemnt rates increased. Also, certain indicators of human capital, notably completion of study/job training in Australia, knowledge of job searching skills in Australia, proficiency in English and general health improved significantly between the two waves. These statsistics imply that humanitarian migrants made significant progress in improving their human capital in a short period of time after being granted a permanante visa. Therefore, more careful examination is needed to understand humanitarian migrants and the consequences and effectiveness of the Humanitarian Programme.

The random effects regression results suggest that the probability of participating in the labour force is higher for humanitarian migrants who were employed prior to coming to Australia, completed study/job training in Australia, have better job searching skills and have better English speaking skills. The chance of getting a job increases if a humanitarian migrant has unpaid work experience in Australia, knows how to search for a job and has better health increase. However, secondary and tertiary education completed overseas has a negative effect on finding a job, compared to those who never attended school.

We also found heterogeneity of these correlations across gender and migration pathways, and we used cross-sectional data to show that these relationships also differ between waves. Our findings suggest that government policies should account for such heterogeneity and the time dynamics of these correlations.

In sum, this study concludes that the sets of statistically significant correlates are different for labour force participation and employment status and that some traditional predictors of labour market

performance for other immigrant groups appear to not be applicable to humanitarian migrants. These findings are not unexpected, but they are important. For instance, the (United States Government Accountability Office 2011)found that little is know about the effectiveness of different approaches for improving refugees' employment outcomes. Ott (2013) found that refugee studies with null findings are less likely to be reported and suggested that the lack of findings of significant correlates is also important for the development of scholarship. This study represents a useful step to better understanding of the effectiveness and/or ineffectiveness of the measures designed to improve the labour market performance of humanitarian migrants.

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Table 1. Descriptive statistics

	Wave 1		Wave 2		
	Mean/ percentage	Standard deviation	Mean/ percentage	Standard deviation	Difference in means
Outcome variables					
Labour force participation	21.31%		26.80%		***
Employment status	29.63%		60.04%		***
Explanatory variables					
Human capital variables					
Education before immigration					
Never attended school	15.56%		-		n.a.
Primary education	20.18%		-		n.a.
Secondary education	47.47%		-		n.a
Tertiary education	16.79%		-		n.a.
Employed before immigration	54.62%		-		n.a.
Has unpaid work in Australia	2.41%		1.94%		
Completed study/job training in Australia	2.39%		6.65%		***
Know how to find a job in Australia	18.47%		38.23%		***
Proficiency in English					
Understanding spoken English	2.16	0.81	2.34	0.77	***
Speaking	2.01	0.82	2.25	0.76	***
Reading	2.14	0.88	2.35	0.81	***
Writing	2.10	0.86	2.27	0.79	***
General health	3.94	1.34	3.86	1.33	
Control variables					
Age	34.65	12.32	35.71	12.31	**
Male	54.30%		54.96%		
Married	58.52%		58.59%		
Household financial hardship	25.83%		39.26%		***
Held bridging visa	13.48%				n.a.
Stayed in Australia for more than a year	21.87%		95.40%		***
Has family/domestic duties	39.47%		35.60%		*
Decile of the Index of Relative Socio-economic Disadvantage (IRSD)	2.55	2.19	2.54	2.19	
Observations	2037		1750		

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; n.a. indicates not applicable.

Table 2. Random effects logistic estimates for the full sample

	(1) Labour force participation			(2) Employment status		
	Coefficient		Odds ratio	Coefficient		Odds ratio
Human capital variables						
Education before immigration (ref: never attended school)						
Primary education	-0.43	[-1.53]		-0.19	[-0.47]	
Secondary education	-0.43	[-1.67]		**-0.77***	[-2.02]	**0.46**
Tertiary education	-0.39	[-1.26]		**-1.27****	[-2.66]	**0.28**
Employed before immigration (ref: no)	**1.21*****	[5.96]	**3.34**	-0.05	[-0.15]	
Has unpaid work in Australia (ref: no)	0.63	[1.25]		**1.91***	[2.20]	**6.75**
Completed study/job training in Australia (ref: no)	**0.83***	[2.49]	**2.29**	0.25	[0.67]	
Know how to find a job in Australia (ref: no)	**1.11*****	[6.54]	**3.02**	**0.94*****	[3.80]	**2.57**
Proficiency in English						
Understanding spoken English	-0.00	[-0.02]		-0.49	[-1.44]	
Speaking	**0.64****	[3.09]	**1.90**	0.47	[1.32]	
Reading	-0.20	[-0.89]		0.12	[0.34]	
Writing	0.28	[1.30]		-0.00	[-0.01]	
General health	0.10	[1.63]		**0.22***	[2.20]	**1.25**
Control variables						
Age	-0.05***	[-4.89]	0.96	-0.02	[-1.53]	
Male (ref: female)	2.04***	[7.85]	7.67	0.03	[0.05]	
Married (ref: no)	0.53**	[2.72]	1.70	0.02	[0.08]	
Household financial hardship (ref: no)	0.31	[1.92]		-0.77**	[-3.08]	0.46
Held bridging visa (ref: no)	1.11**	[2.97]	3.04	-0.12	[-0.24]	
Stayed in Australia for more than a year (ref: no)	0.74***	[4.38]	2.10	2.27***	[6.07]	9.63
Has family/domestic duties (ref: no)	-0.42*	[-2.28]	0.65	-0.41	[-1.26]	
Decile of IRSD	0.11**	[3.29]	1.12	-0.02	[-0.46]	
Observations		2751			734	

Notes: z statistics in brackets; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3. Random effects logistic estimates for labour force participation by gender and migration pathway

	Labour force participation									
	(1) Male			(2) Female			(3) Onshore			(4) Offshore		
	Coefficient		Odds ratio	Coefficient		Odds ratio	Coefficient		Odds ratio	Coefficient		Odds ratio
Human capital variables												
Education before immigration (ref: never attended school)												
Primary education	**-0.75***	[-2.40]	**0.47**	1.09	[1.33]		-0.83	[-1.40]		-0.30	[-0.92]	
Secondary education	**-0.67***	[-2.34]	**0.51**	0.82	[1.05]		-1.09	[-1.88]		-0.24	[-0.82]	
Tertiary education	-0.50	[-1.45]		0.48	[0.52]		-1.06	[-1.58]		-0.18	[-0.51]	
Employed before immigration (ref: no)	**1.14*****	[4.93]	**3.12**	**1.70****	[3.28]	**5.48**	0.27	[0.70]		**1.49*****	[6.11]	**4.45**
Has unpaid work in Australia (ref: no)	1.01	[1.66]		0.10	[0.09]		-1.57	[-1.11]		0.96	[1.78]	
Completed study/job training in Australia (ref: no)	**1.03****	[2.77]	**2.81**	0.10	[0.10]		0.52	[0.88]		**1.06****	[2.64]	**2.87**
Know how to find a job in Australia (ref: no)	**1.19*****	[6.52]	**3.28**	0.45	[0.83]		**1.23*****	[3.94]	**3.43**	**1.10*****	[5.36]	**2.99**
Proficiency in English												
Understanding spoken English	0.11	[0.50]		-0.50	[-0.99]		0.68	[1.46]		-0.14	[-0.64]	
Speaking	**0.49***	[2.14]	**1.64**	**1.42***	[2.48]	**4.15**	0.39	[0.82]		**0.73****	[3.06]	**2.08**
Reading	-0.13	[-0.50]		-0.54	[-0.94]		-0.40	[-0.76]		-0.24	[-0.95]	
Writing	0.14	[0.57]		0.91	[1.69]		-0.08	[-0.17]		0.43	[1.72]	
General health	0.13	[1.81]		-0.02	[-0.11]		0.11	[0.92]		0.10	[1.28]	
Control variables												
Age	-0.05***	[-4.44]	0.95	-0.05*	[-1.98]	0.95	-0.03	[-1.49]		-0.05***	[-4.57]	0.95
Male (ref: female)	-	-		-	-		2.79***	[4.40]	16.20	1.82***	[6.32]	6.15
Married (ref: no)	0.53*	[2.36]	1.70	0.68	[1.39]		0.38	[1.04]		0.57*	[2.43]	1.77
Household financial hardship (ref: no)	0.25	[1.40]		0.64	[1.54]		0.06	[0.19]		0.41*	[2.17]	1.50
Held bridging visa (ref: no)	0.99*	[2.42]	2.70	1.45	[1.23]		1.04*	[2.46]	2.83	0.62	[0.75]	
Stayed in Australia for more than a year (ref: no)	0.78***	[4.16]	2.19	0.42	[0.94]		-0.66	[-0.52]		0.77***	[4.34]	2.15
Has family/domestic duties (ref: no)	-0.55*	[-2.54]	0.57	0.03	[0.07]		0.07	[0.15]		-0.50*	[-2.39]	0.61
Decile of IRSD	0.10**	[2.67]	1.11	0.19*	[2.20]	1.20	0.18**	[2.58]	1.20	0.09*	[2.27]	1.10
Observations	1660			1091			487			2264		

Notes: z statistics in brackets; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4. Random effects logistic estimates for employment status by gender and migration pathway

	Employment status								
	(1) Male			(2) Onshore			(3) Offshore		
	Coefficient		Odds ratio	Coefficient		Odds ratio	Coefficient		Odds ratio
Human capital variables									
Education before immigration (ref: never attended school)									
Primary education	-0.15	[-0.38]		0.56	[0.94]		-0.73	[-1.28]	
Secondary education	**-0.82***	[-2.10]	**0.44**	-0.56	[-1.00]		-0.87	[-1.66]	
Tertiary education	**-1.08***	[-2.23]	**0.34**	-1.18	[-1.62]		**-1.44***	[-2.16]	**0.24**
Employed before immigration (ref: no)	-0.20	[-0.61]		0.09	[0.21]		-0.14	[-0.32]	
Has unpaid work in Australia (ref: no)	**2.30***	[2.49]	**9.93**				1.32	[1.33]	
Completed study/job training in Australia (ref: no)	0.22	[0.57]		-0.47	[-0.84]		0.78	[1.45]	
Know how to find a job in Australia (ref: no)	**0.91*****	[3.61]	**2.48**	**1.12****	[3.05]	**3.07**	**0.88***	[2.45]	**2.42**
Proficiency in English									
Understanding spoken English	-0.48	[-1.29]		-0.34	[-0.64]		-0.70	[-1.48]	
Speaking	0.47	[1.25]		0.48	[0.91]		0.44	[0.86]	
Reading	0.17	[0.45]		0.12	[0.23]		0.34	[0.66]	
Writing	0.01	[0.02]		0.35	[0.74]		-0.52	[-1.09]	
General health	**0.21***	[2.06]	**1.24**	0.24	[1.58]		0.20	[1.38]	
Control variables									
Age	-0.03	[-1.92]		-0.01	[-0.46]		-0.03	[-1.39]	
Male (ref: female)				0.35	[0.35]		-0.11	[-0.18]	
Married (ref: no)	0.11	[0.40]		0.23	[0.57]		-0.16	[-0.42]	
Household financial hardship (ref: no)	-0.76**	[-2.94]	0.47	-0.68	[-1.87]		-0.87*	[-2.35]	0.42
Held bridging visa (ref: no)	-0.30	[-0.61]		0.05	[0.09]		-1.92	[-1.34]	
Stayed in Australia for more than a year (ref: no)	2.24***	[5.76]	9.36				2.28***	[4.57]	9.74
Has family/domestic duties (ref: no)	-0.54	[-1.50]		-0.44	[-0.79]		-0.46	[-1.10]	
Decile of IRSD	-0.01	[-0.16]		-0.01	[-0.10]		-0.01	[-0.20]	
Observations	664			320			409		

Notes: z statistics in brackets; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; the specification for females cannot be estimated due to the low employment rate.

Table 5. Cross-sectional logistic estimates for full sample by waves

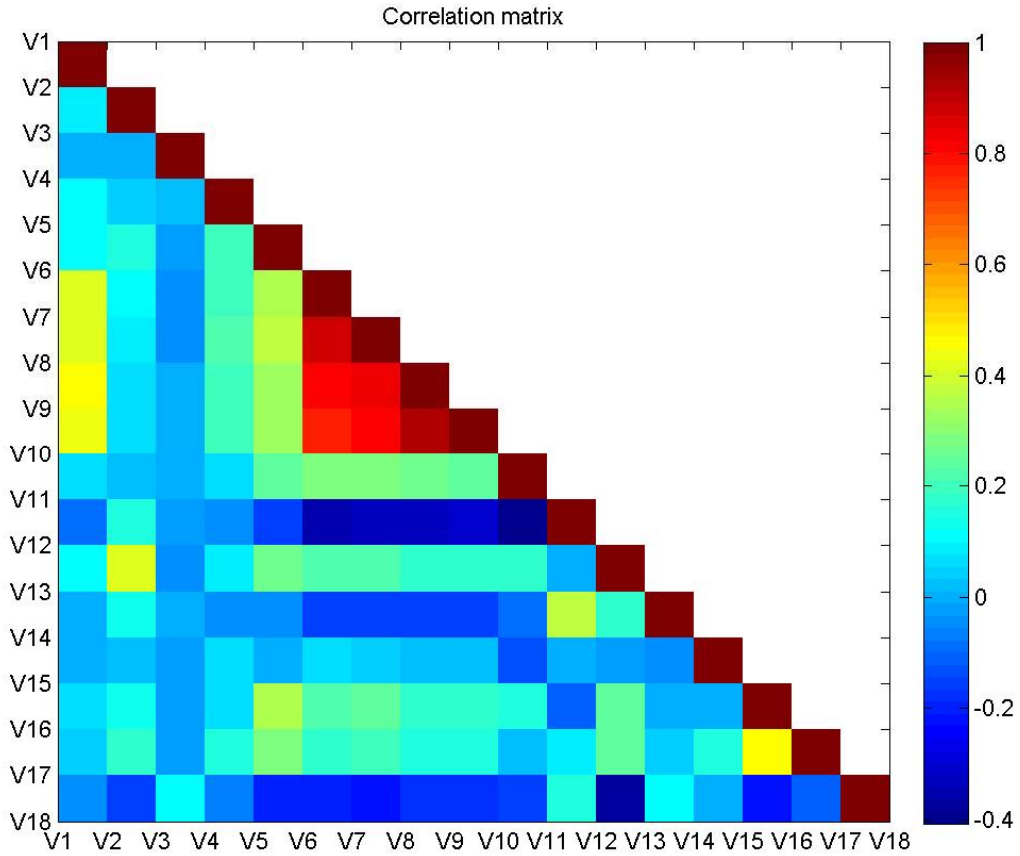
	Labour force participation						Employment status					
	(1) Wave 1			(2) Wave 2			(3) Wave 1			(4) Wave 2		
	Coefficient		Odds ratio	Coefficient		Odds ratio	Coefficient		Odds ratio	Coefficient		Odds ratio
Human capital variables												
Education before immigration (ref: never attended school)												
Primary education	-0.45	[-1.67]		-0.29	[-0.94]		0.23	[0.52]		-0.62	[-1.38]	
Secondary education	-0.36	[-1.47]		-0.45	[-1.54]		-0.33	[-0.80]		**-1.02***	[-2.32]	**0.36**
Tertiary education	-0.23	[-0.79]		-0.65	[-1.80]		-0.81	[-1.58]		**-1.40***	[-2.57]	**0.25**
Employed before immigration (ref: no)	**1.02*****	[5.67]	**2.78**	**0.66****	[2.99]	**1.94**	-0.04	[-0.11]		-0.08	[-0.22]	
Has unpaid work in Australia (ref: no)	0.72	[1.63]		0.14	[0.20]		**1.73***	[2.22]	**5.63**	0.52	[0.46]	
Completed study/job training in Australia (ref: no)	0.05	[0.11]		**1.09****	[3.13]	**2.97**	-0.16	[-0.30]		0.38	[0.94]	
Know how to find a job in Australia (ref: no)	**0.89*****	[5.30]	**2.44**	**0.89*****	[4.54]	**2.44**	0.29	[1.00]		**1.38*****	[4.75]	**3.97**
Proficiency in English												
Understanding spoken English	0.10	[0.50]		-0.24	[-0.86]		-0.31	[-0.83]		-0.56	[-1.25]	
Speaking	**0.50***	[2.52]	**1.65**	**0.59***	[2.02]	**1.80**	0.43	[1.08]		0.08	[0.19]	
Reading	-0.12	[-0.49]		-0.03	[-0.12]		-0.16	[-0.37]		**0.91***	[2.04]	**2.48**
Writing	0.06	[0.29]		0.27	[1.04]		0.44	[1.05]		-0.66	[-1.65]	
General health	0.03	[0.52]		**0.20***	[2.45]	**1.22**	**0.34****	[2.84]	**1.40**	0.04	[0.35]	
Control variables												
Age	-0.04*****	[-4.11]	0.97	-0.03****	[-3.15]	0.97	-0.01	[-0.66]		-0.03	[-1.88]	
Male (ref: female)	1.55*****	[7.17]	4.71	1.87*****	[4.93]	6.48	0.20	[0.37]		0.29	[0.39]	
Married (ref: no)	0.43*	[2.36]	1.54	0.31	[1.33]		0.19	[0.60]		-0.31	[-0.99]	
Household financial hardship (ref: no)	0.34*	[2.06]	1.40	0.17	[0.88]		-0.51	[-1.72]		-0.57*	[-2.12]	0.56
Held bridging visa (ref: no)	0.96****	[2.93]	2.62	0.44	[1.02]		0.02	[0.03]		-0.21	[-0.39]	
Stayed in Australia for more than a year (ref: no)	-0.31	[-0.31]		0.26	[0.62]		14.09	[0.02]		0.77	[1.03]	
Has family/domestic duties (ref: no)	-0.20	[-1.12]		-0.63****	[-2.94]	0.53	0.02	[0.06]		-0.64	[-1.79]	
Decile of IRSD	0.09****	[2.89]	1.10	0.07	[1.70]		-0.06	[-1.02]		0.02	[0.35]	
Observations	1809			942			386			345		

Notes: z statistics in brackets; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Appendix A1. Definitions of variables

	Variable	Definition
	Labour market behaviour and outcomes	
	Labour force participation	1 = employed in a paid job in the last seven days, or looked for a paid job in the past four weeks; 0 = otherwise
	Employment status	(Among the labour force participants) 1 = employed in a paid job in the last seven days; 0 = otherwise
	Explanatory variables	
	Human capital variables	
V1	Education before immigration	What is the highest level of education you completed before coming to Australia? 1 = never attended school (reference group); 2 = primary education 3 = secondary education 4 = tertiary education (including university and trade/technical qualifications)
V2	Employed before immigration	In your life before you came to Australia, did you do any paid work in a job, business or on a farm? (1= yes; 0 = no)
V3	Has unpaid work in Australia	1= yes; 0 = no
V4	Completed study/job training in Australia	1= yes; 0 = no
V5	Know how to find a job in Australia	1= yes; 0 = no
	Proficiency in English	
V6	Understanding spoken English	Scale: 1 = not at all; 2 = not well; 3 = well; 4 = very well
V7	Speaking	As above
V8	Reading	As above
V9	Writing	As above
V10	General health	Overall, how would you rate your health during the past 4 weeks? (scale: 1 = very poor; 2 = poor; 3 = fair; 4 = good; 5= very good; 6 = excellent)
	Control variables	
V11	Age	Years
V12	Male	1= male; 0 = female
V13	Married	1= married; 0 = not married
V14	Household financial hardship	1 = do not have adequate money to pay bills; 0 = otherwise
V15	Held bridging visa	Have you spent any time in Australia on a bridging visa? 1= yes; 0 = no A bridging visa E (BVE) is a temporary visa that allows people to stay in Australia while they finalise their immigration matter or make arrangements to leave Australia. Until December 2014, asylum seekers who arrived in Australia by boat after 13 August 2012 and subsequently released from immigration detention on bridging visas were not eligible to work. In December 2014, the Government decided to grant work rights to asylum seekers in this group.
V16	Stayed in Australia for more than a year	1 = more than a year; 0 = one year or less
V17	Has family/domestic duties	Currently looking after family/domestic duties (1= yes; 0 = no)
V18	Decile of the Index of Relative Socio-Economic Disadvantage (IRSD)	Scale: 1 = most disadvantaged; 10 = least disadvantaged; The Index of Relative Socio-economic Disadvantage (IRSD) at the suburb level is calculated by the ABS based on relative socioeconomic advantage and disadvantage, economic resources, labour market conditions, local education and occupation composition.

Appendix A2: Correlation of explanatory variables



Note: See Appendix A1 for the names and definitions of variables.