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Ethnic identity and immigrants' labour market outcomes*

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Abstract: The objective of this paper is to analyse how immigrants' ethnic identity correlates with their labour market outcomes. More precisely, we estimate the role of ethnic identity in employment, wages, under-employment (i.e., they would prefer to work more hours but are not given the opportunity), three measures of job satisfaction, overeducation and wages. We further explore whether economic downturn has a differentiated impact on our measures. Using Australian longitudinal data, we find that ethnic identity strongly is associated with employment and wages as well a number of job satisfaction measures. We then split our data and repeat the estimations for before and after the Great Financial Crisis of 2008-09. We find important differences in the way ethnic identity is associated with different measures of labour market outcomes under different economic conditions. Finally, we explore the mechanisms through which some of results could be explained.

JEL Classification: F22, J15, J16, J21, Z13

Keywords: Ethnic Identity, Assimilation, Employment, Wages, Job Quality, Overeducation

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1. Introduction

Recent literature has shown that ethnic identity plays an important role in the economic outcomes of immigrants (Constant and Zimmermann, 2008; Battu *et al*, 2010; Bisin *et al*, 2011; Cai and Zimmermann, 2020; Carillo *et al*., 2021). However, there is no consensus in the results obtained as these are highly dependent on the type of country under study and the type of data available to determine immigrant's ethnic identity. It is, therefore, important to further explore the conditions that affect ethnic identity in different settings and how those are related to the labour market performance of immigrants, especially given that different countries have different immigration as well as integration policies. We contribute to the literature by addressing the following questions: (i) do those who identify with the host country culture have a higher probability of getting a job as well as better wages than those who identify more with the culture of their country of origin? (ii) is the level of acculturation associated with measures of employment 'quality' such as under-employment, satisfaction with job and pay and whether they have job security? (iii) how is ethnic identity associated with labour market mismatch? and (iv) do the economic downturns affect immigrants with different level of acculturation differently? To the best of our knowledge, this is not only the first paper that uses Australian data to explore the association between ethnic identity and labour market outcomes but also the first one in this literature to analyse questions (ii), (iii) and (iv).[1]

While ethnicity is a fixed trait during a person's lifetime, ethnic identity can change over time. On one extreme the immigrants can reject the dominant culture whereas on the other extreme they can shun their own culture (language and/or religion) in favour of the dominant one. A particular ethnic group can therefore form 'oppositional identities' where some belong to one group while the others belong to the second group (Battu and Zenou, 2010). Akerlof and Kranton (2000) argue that these extreme positions could be a result of discrimination or perhaps due to preferences for solidarity to one's own culture and/or religion. Oppositional identities could produce economic and social conflict resulting in adverse economic outcomes for those who strongly identify with their own ethnic background (Bisin *et al*, 2011).[2]

[1] Using Canadian data, Islam and Raschky (2015) also include 'job satisfaction' in their estimation. Their (aggregated) job satisfaction variable ranges from 0-10, with higher values associated with higher job satisfaction. However, as explained later in this section, we differ from them because we use a disaggregated measure of 'job satisfaction', which also includes whether immigrants' are happy with their pay and whether they have job security etc. This is important because there could be heterogenous correlation of assimilation with different aspects of the job.

[2] For instance, African American students in some parts of the US could be stigmatized for 'acting white' if they learn standard English and perform well at school (see Bisin *et al*, 2011).

As stated above, the existing literature has not reached a consensus on the role ethnic identity plays in immigrant's economic outcomes. For instance, Carillo *et al* (2021) use Italian data and show that ethnic identity has a significant positive affect on the probability of finding employment. Similarly, using Chinese internal migration data, Cai and Zimmermann (2020) find a positive and significant impact of assimilation on hourly wages, and assimilation also reduces the number of hours worked. However, Islam and Raschky (2015), using Canadian data, find a negligible effect of assimilation on immigrants' labour market outcomes.

Casey and Dustmann (2010) and Constant and Zimmerman (2008, 2009) both use German data but do not find similar results, primarily because they use different definitions of ethnic identity and different immigrant groups. Casey and Dustmann (2010) follow the strand of literature in which identity measure is based on immigrants' self-reporting, generally in terms of their answer to two questions: (i) how strong do they feel to be from the host country, e.g. "how strongly 'German' do they feel" and (ii) how strongly they feel to be connected to the country of origin, e.g., Turkey. The answers are based on a scale, which then determines their level of attachment to a particular group, i.e. their identity. Using this measure, Casey and Dustmann find that ethnic identity does not play any role for men, though it does have a determinantal impact on female economic outcomes.[3] Constant and Zimmermann (2008, 2009), on the other hand, use a different measure which they call two-dimensional *ethnosizer*. The ethnosizer is constructed by using five measures of ethnic identity: language, culture, ethnic self-identification, social interactions and history of migration. Using this measure, they find that those who are assimilated are much more likely to find employment than those who are marginalized or separated.[4] Nekby and Rodin (2010) use data from Sweden and show that assimilated and integrated have similar positive outcomes in the labour market, though this result only holds for male immigrants.

[3] Casey and Dustmann (2010) also find that ethnic identity is negatively correlated with employment outcomes of second generation immigrants.

[4] The two-dimensional measure of ethnic identity assumes four possibilities: assimilation, integration, marginalization and separation (see Berry, 1998; Constant et al, 2008; Constant and Zimmermann, 2008). Assimilation is the one extreme where the immigrant adopts the native culture, which usually means she prefers the 'white social network', while giving up the culture of her country of origin. Separation, on the other hand, is the opposite of assimilation where the immigrant only identifies with her own ethnic background. The other two possibilities are integration and marginalization, which are defined as follows: in the former case the migrant keeps her own cultural traits (e.g., speaking her native language at home) but adopts significant aspects of the host country culture whereas latter is the weak dedication to both home and host country culture.

We contribute to the literature by exploiting information unique to the Household Income and Labour Dynamics in Australia (HILDA), a detailed annual longitudinal survey data that started in 2001. Like a number of other immigrant receiving countries in Europe and elsewhere, Australia has made adopting the host country's 'way of life' as one of the key elements of its immigration policy. For instance, the immigration policy change of 1995 increased the level of English required in its selective (points based) system, which was an implicit recognition of the importance of integration of migrants once they move to Australia.[5] A later policy document explicitly stated that immigrants are expected to "…embrace Australian values and integrate into the Australian society" (Department of Immigration and Citizenship, 2009). With this backdrop, it is important to analyse the association of ethnic identity with immigrant's economic outcomes in Australia. This is especially relevant because Australia uses selective immigration policy to address labour shortages in the country.

As important as it is to understand how immigrants' level of assimilation is related to their employment opportunities, it is also important to understand to what extent assimilation influences the quality of jobs they get, measured here using job satisfaction indicators. Like the concept of ethnic identity, the notion of job quality primarily comes from sociology, though it is inherent in labour economics within the idea of compensating wage differential. As Kalleberg and Vaisey (2005) point out, "people differ in their expectations and needs regarding work as well as their preferences about the importance of various job facets and so may differ in their conceptions of what constitutes a 'good' or a 'bad' job", which is why it is important to also look at different types and levels of job satisfaction.[6] Our job satisfaction measures are: happy with job, happy with pay and feel secure about the job. We also measure if ethnic identity is correlated with under-employment (i.e., they would prefer to work more hours but are not given the opportunity), which captures the under-utilization of immigrants' human capital. In addition, when analysing the labour market performance of immigrants, a common problem emphasised in the literature is the existence of education-occupation mismatch. This phenomenon has been widely studied in the literature emphasising on the determinants as well

[5] Manning and Roy (2010) point out that "If cultural diversity has costs and benefits then public policy needs to take account of them. This policy might be immigration policy (how many immigrants from what countries to allow in) or policy on the assimilation of immigrants once they are in the country, e.g., forcing them to learn the language….".

[6] Pendaukar and Pendaukar (2005) explore something along the similar lines but they have an objective measure of job "prestige" using Blishen occupational score whereas our measure is whether the immigrant employee is satisfied/happy with his/her job and pay as well as feels to have job security.

as the consequences of mismatch and the corresponding potential wage loss individuals experience in the labour market (see Piracha and Vadean, 2013 for an overview of this literature). However, previous literature on ethnic identity has not analysed the relationship between ethnic identity and the education-occupation mismatch. Finally, it is possible that the role of assimilation in the different measures of labour market outcomes change when economic conditions change. For instance, it could be that when there are plenty of jobs available then assimilation is less important, although it might still be quite relevant for 'good' jobs (that pay well and are more secure than the 'bad' jobs). On the other hand, in an economic downturn, assimilation is relevant for both finding a job and keeping one, though perhaps people's views and expectations about the level of job satisfaction, in terms of wages or being overeducated, might change. We therefore repeat the analysis by looking at the role of ethnic identity, in all our measures, before and after the 2008 Great Financial Crisis (GFC).

We follow Constant and Zimmermann (2008) and build an index along the lines of the one-dimensional *enthnosizer* in their paper.[7] We call it the *assimilation index (AI)*, which is built using three measures: (i) language proficiency, (ii) whether an individual is happy to live in Australia (which is our proxy for self-identification) and (iii) ethnic concentration, which captures whether the immigrant lives in a high co-ethnic concentration area. The value of AI correlates *positively* with assimilation, i.e., the higher the value of the index, the more assimilated is the migrant.

The results show that ethnic identity has strong and positive effect on the probability of employment as well as a number of job quality/satisfaction indicators for both males and females. One key difference in the quality measures is that assimilated males are less likely to be overeducated whereas assimilation does not play a role for that measure for females. Assimilation is also positively associated with wages for males and females. When looking at the effect before and after the GFC of 2008, we find differences across different measures of labour market outcomes in the two periods as well as between the genders. Finally, we show that assimilation has a strong impact on the formation of networks which helps explain the channel through which ethnic identity plays a role in the labour market.

It is important to point out that none of the results discussed should be considered as causal. This is a common feature in this literature since finding a reasonable instrument in this setting

[7] HILDA does not have the kind of data that is needed to build a *two-dimensional* e*thnosizer*.

is not straightforward, especially when the data is limited in terms of information about the immigrants, like HILDA. We, therefore, cannot rule out reverse causality (see, for instance, Casey and Dustmann, 2010; Pendaukar and Pendaukar, 2005; Nekby and Rodin, 2007).

The rest of the paper is organized as follows. We discuss the theoretical background and explain the measurement of ethnic identity in Section 2. Descriptive statistics are presented in Section 3 while Section 4 explains the empirical strategy. Results on the role of ethnic identity in employment, wages, job satisfaction indicators, as well as social networks are presented in Section 5. The last section concludes the paper.

2. Theory and measurement of ethnic identity

The economics literature has identified a number of factors that affect immigrants' labour market performance. These include the country of origin, age at entry, migrant's gender, host country specific human capital as well as social network. In recent years, ethnic identity has become another important element of interest to the economists. Identity is primarily based on social differences (Akerlof and Kranton, 2000), in the sense that each individual belongs to a certain social group or category and his behaviour is thus "conditioned" or formed within the norms of that group. Changing behaviour to identify oneself with another category might bring benefits but these benefits are likely to come at a cost, possibly in terms of the impact it will have on group's utility.

The underlying notion of how ethnic identity manifests itself in economic outcomes comes through its importance in the formation of social networks. Battu *et al* (2007) argue that since whites don't suffer from discrimination, the non-whites (immigrants) might prefer interacting with whites as that social network is likely to be more rewarding in the labour market. However, because of peer pressure and social preferences within their own "community/group", each non-white person's interaction with the white person or group decreases the non-white group's overall utility. The individuals for whom the non-white group utility is more important than their own labour market performance might form *oppositional identities*, i.e., stay closer to their own ethnic group by not mixing with whites.

It is indeed possible that within the two extremes discussed above, immigrants (or non-whites) form plural identities, as also acknowledged by Battu *et al* (2007). We explore that element of identity in this paper. More precisely, we use three possible categories to determine whether a migrant has assimilated in the host country or keeps the ethnic of the their country of origin.

We use information based on three questions to determine which category a migrant belongs in. The information we use is: (i) their language ability, as measured by their spoken language skills; (ii) their happiness about living in Australia; and (iii) the proportion of immigrants living in an area with high ethnic concentration. Below we provide more detailed information on how each variable is constructed.

Language ability: HILDA indicates whether immigrants have poor, good or very good English language skills and whether they speak any other language at home. A four category variable is therefore constructed indicating (a) whether or not immigrants are able to communicate in the host country's language and (b) whether or not their English language skills are poor or good/very good. Based on that, we create a language-related variable with values ranging between 0 and 3. If a migrant has good/very good spoken English skills and speaks no other language at home then that is assigned a value of 3 (which means completely assimilated in this category); good/very good spoken English skills and speaks another language at home is assigned a value of 2; average spoken English and speaks another language at home gets a value of 1; and poor or no spoken English skills and speaks another language at home gets a value of 0.

Happy living in Australia: This set of indicators builds on a question asking to score one's happiness about living in Australia on a 0-10 scale. As in the case of language, we construct a four-category variable reflecting whether happiness is scored 9-10 (value: 3), which we associate with being more assimilated, and decreasing values the lower the assimilation (i.e., value of 2 for a score of 6-8; a value of 1 for a score of 3-5; and a value of 0 for a score of 0-2).

Ethnic concentration: Living in a neighbourhood with a high number of immigrants may increase chances of socialising with co-ethnics, thus, ethnic concentration was constructed as an indicator of social networks using the proportion of foreign-born living in the same local government area (this is similar to a county in the US and the UK), and creating a four-category dummy, each value representing a different quantile of the distribution: hence, being more assimilated is associated with the lowest concentration of foreign born living in the same local government area (value: 3), while being least assimilated is associated with the highest concentration (value: 0).

Making use of these three sets of indicators, we build our *assimilation index* by adding up the scores of each component rescaled so that it varies between 0 and 1. The resulting assimilation

index thus created has several possible categories, ranging from 0 to 3 – the highest value representing the fully assimilated migrants.

3. Data and descriptive statistics

We conduct the empirical analysis using the Household, Income and Labour Dynamics in Australia (HILDA) data. The data was collected annually from 2001 and tracked the same individuals over time, allowing for people to (re)enter and (re)exit the survey. To date 17 waves have been collected with more than 17,000 individuals surveyed each year. The longitudinal survey data provides information about family formation, socio-economic status, general and psychological health as well as life satisfaction.

The panel data nature of HILDA implies that its respondents include both those who drop out of the survey (e.g. emigrating from Australia), and those who join it at a later wave (e.g. immigrating to Australia). This feature leads to an unbalanced panel, and to reduce the bias and skewness arising from such attrition, the HILDA provides longitudinal sample weights on a regular basis.

We focus on 25 to 65 years old migrants living in Australia, in order to avoid the effect of part-time work during schooling years, using an age window that moves with the waves of the survey. As a result, the working sample looses those who become 65 during the period examined and acquires new entrants who become 25 during the 17 waves used. The relationship of interest is not affected by the changing composition of the sample and is therefore not further discussed, as adding a cohort indicator in the empirical analysis or performing separate regressions does not modify the results presented.

In total, our unbalanced panel contains more than 25,000 observations of about 2,700 individuals who are born abroad and are between the ages of 25 and 65 during the period. Table 1 summarises the unconditional mean demographic and labour market characteristics of the working sample as well as the means of the assimilation index.

Migrants are predominantly middle-aged (46.63 is the average age), females (51.7%) and married (78.5%). Many have migrated when very young, as the average number of years since migration is just over 28 years. The fact that many migrants arrive when still in schooling age generates a working sample almost equally split between individuals who complete their formal education in Australia (45.6%) and abroad (53.4%), respectively. This in turn makes it possible to disentangle the effects of ethnic identity of migrants from similar countries of origin

and with similar profiles but acquiring their human capital in home and host countries, which is generally not possible in most databases.

Migrants are typically born in English-speaking countries (67.4%), many in the UK, Ireland, New Zealand, Canada and the US, but the under-representation of non-English speaking migrants diminishes over time, as HILDA over-samples them in subsequent waves. Among non-English speaking migrants, several originate from Europe and especially Germany, the Netherlands, and Italy: the 3% of the sample for each country is low compared with the historical volume of migrants from these countries. Asian migrants are now the largest group of immigrants in Australia and account for larger shares of respondents (about 5% each from the Philippines, Vietnam, China and India).

Migrants are relatively well educated, as about a third has completed university or higher tertiary degree. Migrants with less than 12 years of schooling represent a sizeable 20% of the working sample: they are typically older migrants, arrived in Australia in the post-WWII boom and carry with them the educational features of the time: lower age levels to complete mandatory schooling and migration carried out after educational choices are carried out. In contrast, recent migrants from Asia include individuals who arrived in Australia as students and then stayed on, reflecting a specific migration policy implemented from 2000 which gave extra points towards permanent residence to individuals acquiring education in Australia.

Migrants typically live in small households of about 3 individuals. Australian lineage is small, with less than 5% of migrants having an Australian parent.

We use the Australian Classification of Occupation (ASCO) to match immigrants' employment to the corresponding education level as outlined in Australia's Department of Immigrant and Citizenship (DIAC). Based on that, those who hold a higher level of education than the one required to be employed in a particular occupation are considered over-educated. In particular, the educational level required to perform the job in the occupational category manager, administrators etc (categories 1-3) as classified in the ASCO is 'bachelor or higher'. Similarly, those who are classified in ASCO occupations 4-7 include associate professionals, tradespersons, clerks, salespersons and personal service workers and plant and machine operators. For these occupational categories, the required level of education is a 'diploma or vocational degree'. Finally, the required level of education for labourers and related workers (ASCO categories 8-9) is 'secondary education or less'.

The sample covers the first 18 years of the new millennium, a time of relative prosperity in Australia despite the inclusion of years before and especially after the GFC of 2008-2009. Australia suffered the GFC only to a limited extent, thanks to rapid and decisive government intervention amounting to about 5% of the country's GDP. Subsequent close economic relationships with a recovering China contributed to a fast recovery thanks to exports of material, higher education (due to the policy changes favouring a two-step migration), and tourism. On average, 96% of the respondents in the age 25-65 are employed, and a substantial component includes self-employed. They are mostly professionals on the higher end of the wage income distribution. Despite the high share of employed, about 12% of respondents report to want to work more hours than currently experienced, suggesting a phenomenon of under-employment which becomes more prominent and persistent after the GFC. Overall, however, migrants in Australia feel good about their jobs: on average they are happy with their employment and pay (7.567 and 6.987 out of 10, respectively). Most importantly, they feel to have job security (7.739/10)

Our key independent variable is the assimilation index built using the three measures explained above. As evident from Table 1, migrants feel well assimilated, as the average value of the index is just over 2 out of a maximum value of three. The minimum value of the index is 0.67, and it applies to 0.18% of the working sample, while 6.5% has the maximum index score of 3. The skew towards higher values of the index is not surprising given that Australia is generally considered as a successful destination for migrants, suggesting *a priori* that the role of ethnic identity is not as striking as in other destination countries.

4. Empirical strategy

To analyse the relationship between ethnic identity and various measures of labour market outcomes, we initially estimate the following micro-econometric model:

$$Y_{it} = \mathbf{a}_0 + X_{it}\mathbf{a}_1 + \mathbf{a}_2 AI_{it} + \mathbf{t}_t\mathbf{a}_3 + u_i + v_{it} \qquad (1)$$

where Y is one of the labour market outcomes chosen (employment, self-employment, hourly wage, various measures of job satisfaction, over-education) for individual i at time t. X_{it} is a vector of individual characteristics that includes age, gender, marital status, educational level, household size, place of origin, whether one or both parents are Australian, and years since migration. AI_{it} is the assimilation index; t is a year dummy. The parameters u_i and v_{it} form the composite error term: u_i captures time-invariant individual unobserved heterogeneity; v_{it} is an

i.i.d. component. The parameter of interest in Eq. (1) is $\mathbf{a}_2$ as that captures the effect of ethnic identity on labour market outcomes, conditional on demographic and employment characteristics.

To partially eliminate the problem of likely serial correlation in the composite error term as OLS pools data across time, Eq. (1) is estimated using a panel data estimator. Since several covariates are time-invariant (gender, household size, education), the random effects panel estimator is used.[8] Model (1) is augmented with the time-averaged values of the time-varying variables (Mundlak, 1978; Chamberlain, 1980; Wooldridge, 2010) as a way to control for unobserved time-invariant heterogeneity and, crucially, to relax the assumption of orthogonality between u_i and the observed covariates ("Mundlak correction"). We use random effects probit model with Mundlak corrections in all estimations.

5. Identity and labour market outcomes

5.1 Full sample

Tables 2 and 3 report results of the association between ethnic identity and the probability of being wage employed and self-employed for males and females, respectively. In addition, Tables 2 and 3 also present estimates for individuals' satisfaction with their job (Job Happy), with their pay (Pay Happy), whether they have job security (Job Security), if they are underemployed (i.e., they would prefer to work more hours but are not given the opportunity) and finally whether they are overeducated. Extant literature on over-education shows that overall migrants are more overeducated than the natives (see for instance, Green *et al*, 2007). A priori one would expect that assimilated migrants are least likely to be overeducated, since they behave most like the natives.

Our results show that assimilated immigrants' are more likely to be wage employed (as opposed to self-employed) and more likely to be happy with their job and with their pay. Similar effects and signs are observed for these three measures for both males and females (columns 1, 4 and 5 in Tables 2 and 3 respectively), though the impact is stronger for male

[8] The panel random estimator transforms the data by subtracting from each observation a portion h of its time average, where h depends on the variance of $\mathbf{u_i}$ and $\mathbf{v_{it}}$ and the number of period for which data are observed (Wooldridge, 2010). Although h is not known in practice it can always be estimated (various methods are discussed in Wooldridge, 2010). An estimated h close to zero results in random effect estimates being close to those obtained by pooled OLS, implying that time-invariant unobserved heterogeneity is relatively unimportant, as the variance of $\mathbf{u_i}$ is small relative to that of $\mathbf{v_{it}}$. Conversely and more commonly, if the estimated h is close to 1, then the variance of $\mathbf{u_i}$ is large relative to that of $\mathbf{v_{it}}$, and the bias caused by unobserved time-invariant heterogeneity is large.

immigrants in two of the three categories. More precisely, one standard deviation increase in the assimilation index results, respectively, in a 1.2 and 10 percentage points increase in the probability of employment and being 'happy with job' for males while it is 0.8 and 7 percentage points increase, respectively, for females. However, assimilated females are relatively more happy about their pay than their male counterparts. Assimilated males are more likely to feel secure about their job and less likely to be overeducated while assimilated female immigrants are less likely to be underemployed (there is no association between assimilation and being overeducated for females). These results suggest that the level of assimilation plays an important role not only in obtaining employment but on the characteristics of the job as well, especially in terms of the reduction in the incidence of overeducation. Our results are in line with those in Constant and Zimmermann (2008) and Cai and Zimmermann (2020) though they are contrary to those found by Gorinas (2014), Casey and Dustmann (2010) and Nekby and Rodin (2010).

Table 4 reports wages for males and females. Consistent with some of the existing literature, we find a positive correlation between ethnic identity and wages for both males and females, though these are significant only at 10% level. While there are a number of papers that study the association between ethnic identity and employment, only a small number look at wage effects as well. Within that literature, Mason (2004) and Cai and Zimmernann (2020) also found a positive effect of ethnic identity on wages whereas Casey and Dustmann (2010) and Islam and Raschky (2015) found no such effect. As discussed in the Introduction, one reason for varied results in this literature is possibly because the way ethnic identity is measured as well as the host country characteristics, including the country's immigration policy. In the case of Australia, which has a points-based immigration policy with a strong labour market focus, there is a strong emphasis on the assimilation of immigrants, which is clearly stated in their immigration policy (Department of Immigration and Citizenship, 2009).

5.2 Labour market outcomes before and after the Great Financial Crisis

Our sample covers the first 18 years of the new millennium, which was a time of relative prosperity in Australia. At the macro level Australia was relatively less adversely affected by the GFC of 2008-2009, primarily due to sound economic policy and close trade relations with China, another country that was not much affected by the GFC (OECD, 2010). However, at the micro level it became more difficult to gain permanent employment after 2008 (Junakar,

2015). We therefore split our sample into before and after GFC and run the same estimations as before.

Tables 5 and 6 show the wage employment, self-employment and under-employment while Tables 7 and 8 show different aspects of job satisfaction for males and females separately, for before and after GFC. Results for employment before the GFC are generally the same as those in the full sample, but association disappears after GFC (see Tables 5 and 6). This is an interesting result as it shows that ethnic identity matters when economic conditions are good but does not play a significant role when there is economic uncertainty; perhaps because productivity and necessity (to remain in employment) trump all other aspects. The other key difference from the full sample is that assimilated males are less likely to be overeducated after GFC whereas females are more likely to be overeducated before the GFC, with ethnic identity having no correlation with overeducation after the GFC for females and before the GFC for males (although the coefficient is still negative). This seems to imply that assimilated males are much more likely to get a correctly matched occupation. In the next subsection we explore possible channels that could generate these results.

Tables 7 and 8 show different aspects of job satisfaction. All three measures are positive and highly significant for females before the GFC showing strong association with ethnic identity but the results are insignificant after the GFC. The most interesting result for males is that assimilation is much more important when it comes to job security after the GFC. It could be that more assimilated are more likely to keep their jobs as they are now the 'insiders', but one cannot rule out reverse causality as well: those who stay in their jobs are more likely to have higher 'level' of assimilation, perhaps established through their network with native colleagues. Either way it shows that the more assimilated are more likely to be better off than the less assimilated immigrants.

Overall, these results show that being assimilated has a differential association with at least some aspects of migrants' labour market performance, especially being overeducated for females who benefit from assimilating in terms of getting better matching jobs when economic conditions are more suitable. Ethnic identity, therefore, does play an important role in the labour market outcomes of immigrants in terms of different attributes of employment, especially in different economic conditions.

Finally, Table 9 shows that being assimilated has no correlation with hourly wages before or after the GFC, for both males and females. Since the gradient is steeper in the post-GFC period, especially in the case of women, these results do not contradict the positive and statistically significant point estimates reported in Table 4, which cover the entire period considered. Our interpretation is that the relationship between hourly wages and ethnic identity is weak at best, as the effect of assimilation tends to manifest through 'quantity' measures such as quality of the job carried out and happiness about it rather than through 'price' measures such as wages. For example, women are 5% more likely to hold a permanent rather than casual job after the GFC if they are highly assimilated.

5.3 Ethnic identity and social network

In this section we explore the channels through which ethnic identity and employment outcomes might be correlated. It has been shown in the literature that social networks has a significant impact on the labour market outcomes of immigrants and it also plays a role in determining the kind of jobs migrants get (see, for instance Montgomery, 1991; Mouw, 2003; Kalfa and Piracha, 2018). If more assimilated immigrants are more likely to have a native social network then that might be an important channel to succeed in the labour market. Based on the information available in the data, we explore four possible ways in which an immigrant can build a network. These are based on the following information: (i) 'have many friends', (ii) frequency of contact, (iii) social participation, which is split into two aspects: (a) club member and (b) trade member. These variables cover individuals' level of activity and the extent of connections beyond immediate family (living in the same household). The four variables were constructed from the following questions in the data:

Have many friends: This was based on the reply to a general question about the amount of support, using the following statement: *'I seem to have a lot of friends'*. The response ranges from 1 (strongly disagree) to 7 (strongly agree).

Frequency of contacts: The following question was asked in HILDA:

- *'In general, about how often do you get together socially with friends or relatives not living with you?'*

The response ranges from 1 to 7 (every day, several times a week, about once a week, 2 or 3 times a month, about once a month, once or twice every 3 months). A dummy variable has

been created equal to one if the individuals report to socially interact with friends and relatives at least twice a month, and zero if contact is less frequent than that.

Social Participation: The following questions were asked as part of this measure (we present these separately in Table 10; *club member* refers to the answer to first question while *trade member* refers to answer to the second question. Answer to each question was 'yes' or 'no').

- *'Are you currently an active member of a sporting, hobby or community-based association?'*
- *'Do you belong to a trade union or employee association?'*

These aspects of social network are based on the notion of 'weak' ties. One key finding in the literature is that weak ties have a more significant impact on finding a job than do 'strong' ties. Strong ties are associated with social contacts and resources within an individual's own network (Barbieri *et al* 2000; Lin 1999), while weak ties are classified as contacts individuals have in networks that are distant from the individual's own network (e.g., close family members who maybe living in the same household). Using a theoretical model, Granovetter (1973) argues that weak ties increase individuals' economic outcomes as they provide them with information and resources of the distant network.

Given the role social networks play in the labour market outcomes of immigrants[9], the estimations presented in Table 10 could be used to explore the mechanism through which assimilation has an impact on employment and wages etc. The first two columns show that more assimilated are likely to have a lot of friends and are more likely to socialise regularly as well. Since more assimilated live in low ethnic concentration areas (one measure of our assimilation index), their friendships are more likely to be with the natives. Similarly, club membership in those localities will also mean more connections with natives, and these aspects could jointly create more possibilities of finding a job, and perhaps a 'good' job – better pay, lower possibility of mismatch etc. Finally, more assimilated immigrants are likely to have more information about the benefits of belonging to a trade union which could then be helpful in creating job security and also getting better wages. However, we cannot rule out reverse causality here: being a trade member helps establish strong links with native co-workers which could result in higher level of assimilation. However, it is clear that assimilation is strongly

[9] See Piracha and Vadean (2013) for a review of this literature.

associated with the four social network variables which can help explain the channels through which labour market outcomes are materialised.

6. Conclusions

This paper examined immigrants' ethnic identity status and its association with their labour market performance in the host country. Using the Household, Income and Labour Dynamics in Australia (HILDA), we built an *assimilation index* utilising information on three measures of ethnic identity available in the data: (i) language proficiency, (ii) whether an individual is happy to live in Australia (which is our proxy for self-identification) and (iii) ethnic concentration, which captures whether the immigrant lives in a high co-ethnic concentration area.

In order to understand the relationship between ethnic identity and labour market outcomes, we not only examined employment and wages as outcomes but also immigrants' satisfaction with their employment, especially exploring whether individuals are happy with their job and pay as well as they feel to have job security and required number of hours of work. Since the extant literature on overeducation has shown that immigrants are more overeducated than natives, we also explored to what extent assimilation mitigates this negative outcome. Furthermore, we split the longitudinal data set in order assess whether the Great Financial Crisis impacted our results. Finally, we explore the different mechanisms through which assimilation might be associated with our measures of labour market outcomes of immigrants.

Using a random effects probit model with Mundlak corrections, we first used all the waves of the data together and showed that ethnic identity is strongly associated with employment and wages, a result that is consistent with some of the recent literature in this area. We also showed that ethnic identity has a strong correlation with different measures of what we call job satisfaction indicators, including happy with the job and less likely to be overeducated. This is a novel and important result as employment is not the only measure of how immigrants' fare in the host country's labour market.

In order to further explore the role of ethnic identity, we ran the same estimations above for two separated time periods: before and after the Great Financial Crisis (GFC) of 2008/09. The main aim was to see whether social identity (i.e. the level of assimilation) has differentiated impact under different economic conditions. We found that ethnic identity is still strongly correlated with a number of job satisfaction indicators though there are important differences

when the during economic boom versus a recession. Results also different between males and females, especially when economic conditions change with ethnic identity less important for females job satisfaction indicators during a recession (i.e., after the GFC).

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Table 1 Unconditional means

	Mean	St.d	N
Dependent variable			
Employed	0.960	0.196	19,685
Self-employed	0.126	0.332	18,894
Log hourly wage	3.269	0.569	16,357
Under-employed	0.120	0.325	25,389
Over-educated	0.281	0.450	25,389
Happy with job (Job Happy) (scale 0-10)	7.567	1.742	18,889
Happy with pay (Pay Happy) (scale 0-10)	6.987	2.000	18,635
Feel to have job security (Job Security) (scale 0-10)	7.739	2.084	18,660
Controls			
Age (censored to be between 25 and 65 included)	46.63	11.12	25,389
Female	0.517	0.500	25,389
Married	0.785	0.411	25,388
Nr people in household	2.921	1.354	25,389
Education Year 11 or less (reference)	0.206	0.404	25,389
Education Year 12	0.128	0.334	25,389
Certificate III or IV	0.207	0.405	25,389
Diploma/Advanced Diploma	0.110	0.313	25,389
BA or Honours	0.195	0.396	25,389
Postgrad Diploma/Certificate	0.075	0.264	25,389
Masters/PhD	0.079	0.269	25,389
Completed highest education in Australia	0.456	0.498	25,389
Has at least 1 Australian parent	0.048	0.214	25,389
Migrated from: English-speaking country (reference)	0.674	0.469	25,389
Germany	0.037	0.188	25,389
Netherlands	0.030	0.170	25,389
Italy	0.032	0.177	25,389
Vietnam	0.054	0.226	25,389
Philippines	0.065	0.246	25,389
China	0.051	0.219	25,389
India	0.058	0.234	25,389
Years since migration	28.30	14.94	25,389
% employed with second job	0.046	0.209	25,389
Average unemployment in local govt. area	5.168	1.079	25,389
Assimilation Index (scale 0-3)	2.092	0.473	25,389

Source: HILDA wave 1-17. Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65.

Table 2 Ethnic identity, employment, under-employment and job quality indicators - Random effects wage regression with Mundlak correction (males)

	Employed	Self-empl	Under-empl	Job Happy	Pay Happy	Job Security	Over-education
Assimilation Index	0.026***	-0.002	-0.007	0.212**	0.179*	0.182*	-0.036**
	(0.01)	(0.01)	(0.01)	(0.09)	(0.09)	(0.10)	(0.02)
Age	-0.005	-0.020	0.016	0.068	0.092	-0.039	-0.005
	(0.01)	(0.01)	(0.01)	(0.08)	(0.09)	(0.10)	(0.02)
Married	0.006	0.014	0.028**	0.021	0.117	0.049	-0.004
	(0.01)	(0.01)	(0.01)	(0.08)	(0.09)	(0.09)	(0.02)
Educ.:Year 12	-0.016	-0.034	0.000	-0.126	-0.081	-0.016	0.131***
	(0.02)	(0.03)	(0.03)	(0.17)	(0.18)	(0.19)	(0.04)
_ Cert III, IV	-0.008	0.000	-0.070***	-0.085	-0.147	-0.127	0.505***
	(0.02)	(0.03)	(0.03)	(0.15)	(0.17)	(0.18)	(0.03)
_ Diploma	-0.009	-0.047	-0.103***	-0.139	-0.131	-0.055	0.488***
	(0.03)	(0.04)	(0.04)	(0.23)	(0.25)	(0.27)	(0.05)
_ BA, Hons	-0.007	-0.098**	-0.169***	-0.026	0.176	-0.003	0.510***
	(0.03)	(0.04)	(0.05)	(0.27)	(0.30)	(0.31)	(0.06)
_ Postgrad Dip	-0.007	-0.094*	-0.193***	0.059	0.048	0.228	0.444***
	(0.04)	(0.05)	(0.05)	(0.32)	(0.35)	(0.37)	(0.07)
_ MA, PhD	-0.024	-0.111*	-0.248***	-0.229	-0.159	-0.250	0.431***
	(0.04)	(0.06)	(0.06)	(0.37)	(0.41)	(0.42)	(0.08)
Nr members	-0.001	-0.001	-0.002	-0.014	-0.062**	0.016	-0.015***
in household	(0.00)	(0.00)	(0.00)	(0.02)	(0.03)	(0.03)	(0.00)
Local area unemp	-0.005**	0.000	0.001	-0.045**	-0.046**	-0.141***	0.006
rate	(0.00)	(0.00)	(0.00)	(0.02)	(0.02)	(0.02)	(0.00)
Constant	0.916***	-0.093	-0.424***	7.087***	6.470***	8.259***	-0.103
	(0.07)	(0.11)	(0.10)	(0.58)	(0.60)	(0.66)	(0.13)
Fixed effects							
State	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak correction	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2 within	.0038	.0034	.0297	.0078	.0135	.0416	.0645
between	.0604	.0588	.2532	.0847	.0897	.1026	.2197
overall	.0266	.0460	.1450	.0308	.0461	.0699	.1645
N	9,601	9,211	11,474	6,769	6,712	6,685	6,769

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Estimates obtained by performing linear probability model if dependent variable is binary. Random effects estimator includes Mundlak correction terms – namely the average value of each time-varying covariate. Control variables not reported in the table include whether one of the parents lives in Australia, whether the highest level of education was acquired in Australia, years since migration, country of origin (Germany, Netherlands, Italy, Vietnam, Philippines, China, India, other non-English speaking countries, and English-speaking countries, which is the reference group) and the state of residence in Australia (New South Wales, the reference group, Australian Capital Territory, Victoria, Queensland, Tasmania, South Australia, Northern Territory, and Western Australia). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.

Table 3 Ethnic identity, employment, under-employment and job quality indicators - Random effects wage regression with Mundlak correction (females)

	Employed	Self-empl	Under-empl	Job Happy	Pay Happy	Job Security	Over-education
Assimilation Index	0.017*	-0.011	-0.040***	0.151*	0.206**	0.079	0.015
	(0.01)	(0.01)	(0.01)	(0.08)	(0.10)	(0.10)	(0.02)
Age	-0.019*	-0.009	0.050***	-0.014	0.048	-0.043	0.014
	(0.01)	(0.01)	(0.02)	(0.07)	(0.09)	(0.08)	(0.02)
Married	0.023***	0.023**	0.015	-0.012	0.020	0.307***	0.013
	(0.01)	(0.01)	(0.01)	(0.07)	(0.08)	(0.09)	(0.01)
Educ.:Year 12	-0.004	0.014	-0.154***	0.184	0.325*	0.300*	0.273***
	(0.02)	(0.02)	(0.03)	(0.14)	(0.17)	(0.17)	(0.03)
_ Cert III, IV	0.020	0.035	-0.233***	0.118	0.138	0.225	0.651***
	(0.02)	(0.02)	(0.03)	(0.15)	(0.18)	(0.18)	(0.03)
_ Diploma	0.020	0.094***	-0.236***	0.170	0.251	0.442*	0.668***
	(0.03)	(0.03)	(0.04)	(0.22)	(0.25)	(0.25)	(0.05)
_ BA, Hons	0.010	0.052	-0.303***	0.534**	0.916***	0.558*	0.471***
	(0.03)	(0.04)	(0.05)	(0.25)	(0.29)	(0.29)	(0.05)
_ Postgrad Dip	-0.000	0.092**	-0.293***	0.478	0.926***	0.614*	0.393***
	(0.03)	(0.04)	(0.06)	(0.29)	(0.34)	(0.34)	(0.06)
_ MA, PhD	-0.027	0.089*	-0.362***	0.492	1.272***	0.465	0.350***
	(0.04)	(0.05)	(0.06)	(0.32)	(0.37)	(0.37)	(0.06)
Nr members	-0.005*	0.007**	0.010**	0.039	0.029	-0.056*	-0.001
in household	(0.00)	(0.00)	(0.00)	(0.03)	(0.03)	(0.03)	(0.00)
Local area unemp	-0.006**	0.000	0.010***	-0.058***	-0.065***	-0.100***	-0.006
rate	(0.00)	(0.00)	(0.00)	(0.02)	(0.02)	(0.02)	(0.00)
Constant	0.759***	-0.035	0.023	6.535***	6.574***	7.166***	-0.288**
	(0.08)	(0.10)	(0.13)	(0.60)	(0.72)	(0.70)	(0.15)
Fixed effects							
State	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak correction	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2 within	.0044	.0076	.0186	.0032	.0137	.0261	.0666
between	.0660	.0463	.2669	.0820	.0864	.0882	.3269
overall	.0166	.0330	.1519	.0320	.0534	.0525	.2525
N	8,638	8,261	13,082	7,074	7,006	7,018	7,079

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Estimates obtained by performing linear probability model if dependent variable is binary. Random effects estimator includes Mundlak correction terms (for a full list of the other covariates, please see the description in Table 2). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.

Table 4 Ethnic identity and wages - Random effects wage regression with Mundlak correction

	Males	Females
Assimilation Index	0.040*	0.049**
	(0.02)	(0.02)
Age	0.048**	0.006
	(0.02)	(0.02)
Married	0.025	0.029*
	(0.02)	(0.02)
Educ.:Year 12	-0.015	0.097**
	(0.04)	(0.04)
_ Cert III, IV	-0.042	0.005
	(0.04)	(0.04)
_ Diploma	0.063	0.069
	(0.06)	(0.06)
_ BA, Hons	0.119*	0.203***
	(0.07)	(0.06)
_ Postgrad Dip	0.175**	0.249***
	(0.07)	(0.07)
_ MA, PhD	0.139	0.363***
	(0.09)	(0.08)
Nr members in household	0.011**	0.009
	(0.01)	(0.01)
Local area un. rate	-0.022***	-0.004
	(0.00)	(0.00)
Constant	3.694***	3.401***
	(0.17)	(0.18)
Fixed effects		
State	Yes	Yes
Country of birth	Yes	Yes
Mundlak correction	Yes	Yes
R^2 within	.3059	.2593
between	.2257	.2595
overall	.2766	.2959
N	6,719	7,015

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Random effects estimator includes Mundlak correction terms (for a full list of the other covariates, please see the description in Table 2). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.

Table 5 Employment and under-employment before and after GFC (males)

	Before GFC				After GFC			
	Employed	Self-empl	Under-empl	Over-ed	Employed	Self-empl	Under-empl	Over-ed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Assimilation Index	0.023*	0.017	-0.007	-0.006	-0.003	0.001	0.021	-0.046*
	(0.01)	(0.02)	(0.02)	(0.03)	(0.01)	(0.02)	(0.02)	(0.02)
Age	-0.007	-0.004	0.044	-0.014	-0.020	0.010	-0.014	-0.023
	(0.02)	(0.03)	(0.03)	(0.04)	(0.02)	(0.04)	(0.03)	(0.05)
Married	0.020	0.011	0.004	-0.023	-0.009	0.005	0.009	0.048**
	(0.01)	(0.02)	(0.02)	(0.03)	(0.01)	(0.02)	(0.02)	(0.02)
Educ.:Year 12	-0.001	-0.034	0.001	0.075	-0.014	-0.041	-0.034	0.197***
	(0.02)	(0.04)	(0.04)	(0.05)	(0.03)	(0.04)	(0.04)	(0.06)
_ Cert III, IV	-0.017	0.033	-0.026	0.432***	0.007	-0.021	-0.118***	0.697***
	(0.03)	(0.04)	(0.04)	(0.05)	(0.03)	(0.04)	(0.04)	(0.05)
_ Diploma	-0.028	-0.023	-0.054	0.461***	0.028	-0.111**	-0.154**	0.707***
	(0.04)	(0.06)	(0.06)	(0.08)	(0.04)	(0.05)	(0.06)	(0.07)
_ BA, Hons	-0.025	-0.025	-0.148**	0.508***	0.013	-0.235***	-0.188**	0.763***
	(0.05)	(0.08)	(0.07)	(0.10)	(0.05)	(0.07)	(0.08)	(0.09)
_ Postgrad Dip	-0.035	-0.023	-0.139*	0.468***	0.009	-0.277***	-0.178*	0.742***
	(0.06)	(0.09)	(0.08)	(0.11)	(0.06)	(0.08)	(0.09)	(0.11)
_ MA, PhD	-0.032	-0.040	-0.184**	0.424***	-0.043	-0.265***	-0.202*	0.832***
	(0.07)	(0.11)	(0.09)	(0.14)	(0.07)	(0.10)	(0.11)	(0.13)
Nr members	-0.010**	-0.011*	0.006	0.004	0.000	-0.002	0.008	-0.021***
in household	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)
Local area un.	-0.006	0.007	0.008	0.014	0.004	0.003	-0.007	0.000
rate	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)
Constant	0.920***	-0.089	-0.323**	-0.106	0.756***	-0.239	-0.221	0.141
	(0.06)	(0.11)	(0.10)	(0.13)	(0.10)	(0.15)	(0.15)	(0.19)
Fixed effects								
State	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak correction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2 within	.0078	.0038	.0062	.0236	.0099	.0088	.0322	.0878
between	.0638	.0556	.2433	.2321	.0839	.0740	.2052	.2252
overall	.0339	.0482	.1745	.1774	.0364	.0573	.1278	.1819
N	4,528	4,350	5,502	3,169	5,073	4,861	5,972	3,600

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Estimates obtained by performing linear probability model if dependent variable is binary. Random effects estimator includes Mundlak correction terms (for a full list of the other covariates, please see the description in Table 2). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.

Table 6 Employment and under-employment before and after GFC (females)

	Before GFC				After GFC			
	Employed	Self-empl	Under-empl	Over-ed	Employed	Self-empl	Under-empl	Over-ed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Assimilation Index	0.036**	0.027	-0.034	0.054*	-0.003	-0.024	-0.018	-0.020
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)	(0.02)	(0.02)	(0.02)
Age	-0.080**	0.010	0.112**	0.040	-0.007	0.016	0.030	-0.000
	(0.03)	(0.04)	(0.05)	(0.06)	(0.02)	(0.03)	(0.04)	(0.04)
Married	0.028*	0.010	-0.008	-0.018	0.019*	0.001	0.021	0.022
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)	(0.01)	(0.02)	(0.02)
Educ.:Year 12	0.028	0.017	-0.191***	0.255***	-0.022	0.019	-0.146***	0.303***
	(0.03)	(0.03)	(0.04)	(0.04)	(0.02)	(0.03)	(0.04)	(0.04)
_ Cert III, IV	0.091***	0.050	-0.315***	0.709***	-0.033	0.026	-0.184***	0.660***
	(0.03)	(0.04)	(0.04)	(0.06)	(0.02)	(0.03)	(0.04)	(0.04)
_ Diploma	0.117***	0.090*	-0.404***	0.794***	-0.019	0.110***	-0.241***	0.684***
	(0.04)	(0.05)	(0.06)	(0.08)	(0.03)	(0.04)	(0.06)	(0.06)
_ BA, Hons	0.121**	0.073	-0.478***	0.604***	-0.017	0.054	-0.242***	0.529***
	(0.05)	(0.06)	(0.08)	(0.09)	(0.04)	(0.05)	(0.07)	(0.07)
_ Postgrad Dip	0.118*	0.090	-0.544***	0.586***	-0.011	0.130**	-0.309***	0.462***
	(0.06)	(0.07)	(0.09)	(0.11)	(0.05)	(0.06)	(0.08)	(0.08)
_ MA, PhD	0.059	0.118	-0.556***	0.550***	-0.047	0.090	-0.324***	0.499***
	(0.07)	(0.09)	(0.11)	(0.13)	(0.05)	(0.06)	(0.09)	(0.09)
Nr members	-0.007	0.017***	0.027***	0.009	-0.004	0.006	0.023***	-0.013*
in household	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)
Local area un.	-0.000	0.007	-0.011	-0.007	-0.007**	-0.004	0.002	0.002
rate	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)
Constant	0.808***	-0.114	-0.061	-0.206	0.631***	0.064	0.176	-0.115
	(0.08)	(0.10)	(0.12)	(0.14)	(0.12)	(0.16)	(0.19)	(0.22)
Fixed effects								
State	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak correction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2 within	.0124	.0059	.0227	.0463	.0067	.0101	.0249	.0650
between	.0790	.0575	.2485	.3333	.0457	.0557	.2074	.2966
overall	.0292	.0484	.1754	.2617	.0171	.0365	.1363	.2553
N	3,840	3,651	6,052	3,122	4,798	4,610	7,030	3,957

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Estimates obtained by performing linear probability model if dependent variable is binary. Random effects estimator includes Mundlak correction terms (for a full list of the other covariates, please see the description in Table 2). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.

Table 7 Job quality indicators before and after GFC (males)

	Before GFC			After GFC		
	Job Happy	Pay Happy	Job Security	Job Happy	Pay Happy	Job Security
	(1)	(2)	(3)	(4)	(5)	(6)
Assimilation Index	0.242*	0.249*	0.232	0.182*	0.098	0.290**
	(0.14)	(0.15)	(0.15)	(0.11)	(0.12)	(0.13)
Age	0.151	0.226	-0.234	-0.158	-0.394*	-0.086
	(0.20)	(0.22)	(0.25)	(0.19)	(0.21)	(0.22)
Married	0.114	0.232	0.102	0.071	0.103	0.140
	(0.15)	(0.17)	(0.16)	(0.11)	(0.12)	(0.13)
Educ.:Year 12	-0.204	-0.063	-0.116	0.192	-0.033	-0.156
	(0.23)	(0.24)	(0.25)	(0.23)	(0.26)	(0.27)
_ Cert III, IV	-0.121	-0.283	-0.453	0.411*	0.328	0.018
	(0.28)	(0.30)	(0.30)	(0.23)	(0.25)	(0.27)
_ Diploma	-0.317	-0.474	-0.457	0.342	0.461	0.003
	(0.40)	(0.44)	(0.43)	(0.34)	(0.38)	(0.40)
_ BA, Hons	-0.463	-0.294	-0.416	0.622	1.006**	-0.253
	(0.52)	(0.57)	(0.57)	(0.43)	(0.48)	(0.51)
_ Postgrad Dip	-0.368	-0.620	-0.211	0.813	1.216**	0.100
	(0.61)	(0.67)	(0.66)	(0.52)	(0.58)	(0.62)
_ MA, PhD	-0.473	-0.695	-0.722	0.553	0.966	-0.514
	(0.73)	(0.80)	(0.79)	(0.61)	(0.68)	(0.73)
Nr members in household	-0.030	-0.070	-0.028	-0.004	-0.017	0.027
	(0.05)	(0.06)	(0.05)	(0.03)	(0.04)	(0.04)
Local area un. rate	0.014	-0.009	-0.145**	-0.032	-0.007	-0.096***
	(0.05)	(0.06)	(0.06)	(0.03)	(0.03)	(0.03)
Constant	7.525***	6.633***	8.666***	5.994***	6.796***	7.459***
	(0.60)	(0.63)	(0.69)	(0.80)	(0.88)	(0.95)
Fixed effects						
State	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak correction	Yes	Yes	Yes	Yes	Yes	Yes
R^2 within	.0045	.0079	.0372	.0085	.0118	.0388
between	.0834	.0853	.1065	.0643	.0923	.1027
overall	.0423	.0498	.0765	.0356	.0639	.0715
N	3,169	3,140	3,123	3,600	3,572	3,562

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Estimates obtained by performing linear probability model if dependent variable is binary. Random effects estimator includes Mundlak correction terms (for a full list of the other covariates, please see the description in Table 2). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.

Table 8 Job quality indicators before and after GFC (females)

	Before GFC			After GFC		
	Job Happy	Pay Happy	Job Security	Job Happy	Pay Happy	Job Security
	(1)	(2)	(3)	(4)	(5)	(6)
Assimilation Index	0.512***	0.498***	0.464***	0.078	0.094	-0.087
	(0.13)	(0.15)	(0.15)	(0.11)	(0.12)	(0.13)
Age	-0.123	-0.135	0.264	0.093	-0.139	-0.059
	(0.25)	(0.30)	(0.29)	(0.16)	(0.18)	(0.19)
Married	-0.104	-0.111	0.229	0.039	0.010	0.324***
	(0.15)	(0.16)	(0.16)	(0.10)	(0.11)	(0.12)
Educ.:Year 12	0.225	0.229	0.198	0.280	0.307	0.265
	(0.20)	(0.24)	(0.23)	(0.19)	(0.21)	(0.22)
_ Cert III, IV	0.231	0.325	-0.010	0.180	0.028	0.398*
	(0.28)	(0.32)	(0.32)	(0.20)	(0.23)	(0.24)
_ Diploma	0.762**	0.670	0.315	0.110	0.042	0.369
	(0.39)	(0.44)	(0.44)	(0.28)	(0.32)	(0.33)
_ BA, Hons	0.978**	1.241**	0.227	0.442	0.604	0.705*
	(0.48)	(0.54)	(0.53)	(0.33)	(0.38)	(0.39)
_ Postgrad Dip	0.957	1.405**	0.149	0.374	0.664	0.842*
	(0.58)	(0.66)	(0.65)	(0.39)	(0.46)	(0.47)
_ MA, PhD	1.087	1.898**	0.059	0.374	0.647	0.636
	(0.68)	(0.76)	(0.75)	(0.43)	(0.50)	(0.52)
Nr members in household	0.010	-0.076	-0.015	0.028	0.072*	-0.101**
	(0.05)	(0.06)	(0.06)	(0.04)	(0.04)	(0.04)
Local area un. rate	-0.086	-0.068	0.051	-0.087***	-0.027	-0.176***
	(0.05)	(0.06)	(0.06)	(0.03)	(0.03)	(0.04)
Constant	6.516***	5.693***	6.875***	6.746***	6.404***	6.384***
	(0.60)	(0.73)	(0.70)	(0.89)	(1.01)	(1.03)
Fixed effects						
State	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth	Yes	Yes	Yes	Yes	Yes	Yes
Mundlak correction	Yes	Yes	Yes	Yes	Yes	Yes
R^2 within	.0044	.0196	.0225	.0073	.0068	.0274
between	.0987	.0999	.1071	.0545	.1002	.0733
overall	.0604	.0649	.0776	.0305	.0684	.0518
N	3,120	3,081	3,091	3,954	3,925	3,927

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Estimates obtained by performing linear probability model if dependent variable is binary. Random effects estimator includes Mundlak correction terms (for a full list of the other covariates, please see the description in Table 2). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.

Table 9 Wages before and after GFC

	Before GFC		After GFC	
	Males	Females	Males	Females
	(1)	(2)	(3)	(4)
Assimilation Index	0.023	-0.037	0.036	0.029
	(0.03)	(0.02)	(0.03)	(0.03)
Age	0.003	-0.041	0.019	-0.042
	(0.06)	(0.06)	(0.07)	(0.05)
Married	0.102***	0.016	0.024	0.006
	(0.03)	(0.02)	(0.03)	(0.02)
Educ.:Year 12	0.015	0.034	0.042	0.124**
	(0.06)	(0.06)	(0.05)	(0.05)
_ Cert III, IV	0.028	-0.072	-0.076	0.032
	(0.07)	(0.05)	(0.07)	(0.05)
_ Diploma	0.084	0.077	-0.001	0.074
	(0.10)	(0.08)	(0.09)	(0.07)
_ BA, Hons	0.157	0.097	0.126	0.192**
	(0.13)	(0.10)	(0.11)	(0.08)
_ Postgrad Dip	0.107	0.137	0.128	0.308***
	(0.14)	(0.11)	(0.14)	(0.10)
_ MA, PhD	0.143	0.028	0.166	0.303***
	(0.17)	(0.13)	(0.16)	(0.11)
Nr members in household	-0.006	0.010	0.008	0.012
	(0.01)	(0.01)	(0.01)	(0.01)
Local area un. rate	-0.017	0.002	0.002	0.005
	(0.01)	(0.01)	(0.01)	(0.01)
Constant	3.318***	3.567***	3.069***	3.357***
	(0.17)	(0.23)	(0.16)	(0.26)
Fixed effects				
State	Yes	Yes	Yes	Yes
Country of birth	Yes	Yes	Yes	Yes
Mundlak correction	Yes	Yes	Yes	Yes
R^2 within	.1242	.1325	.0779	.1092
between	.1845	.2560	.2343	.2199
overall	.1791	.2449	.2159	.2335
N	3,145	3,574	3,097	3,918

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Random effects estimator includes Mundlak correction terms (for a full list of the other covariates, please see the description in Table 2). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.

Table 10 Assimilation Index and social network

	Many friends	Socialise often	Club member	Trade member
Assimilation Index	0.113***	0.158***	0.053***	0.034***
	(0.04)	(0.04)	(0.01)	(0.01)
Age	-0.004	0.019	-0.017	0.005
	(0.04)	(0.03)	(0.01)	(0.01)
Married	0.282***	-0.116*	0.026	-0.015
	(0.05)	(0.05)	(0.01)	(0.02)
Gender	0.033	0.129***	0.015	-0.008
	(0.04)	(0.04)	(0.01)	(0.01)
Educ.:Year 12	0.067	-0.045	-0.007	0.014
	(0.08)	(0.07)	(0.02)	(0.02)
_ Cert III, IV	0.064	0.057	0.025	-0.007
	(0.08)	(0.07)	(0.02)	(0.02)
_ Diploma	0.148	0.039	-0.038	0.078*
	(0.12)	(0.11)	(0.03)	(0.03)
_ BA, Hons	0.186	-0.095	-0.071	0.038
	(0.14)	(0.13)	(0.04)	(0.04)
_ Postgrad Dip	0.272	-0.117	-0.013	-0.020
	(0.16)	(0.15)	(0.05)	(0.04)
_ MA, PhD	0.244	-0.057	-0.053	0.135**
	(0.18)	(0.17)	(0.05)	(0.05)
Nr members	-0.023	0.131***	-0.002	0.008*
in household	(0.01)	(0.01)	(0.00)	(0.00)
Local area un.	-0.017	-0.016	0.004	-0.002
rate	(0.01)	(0.01)	(0.00)	(0.00)
Constant	3.950***	3.040***	1.882***	2.08***
	(0.33)	(0.28)	(0.09)	(0.10)
Fixed effects	Yes	Yes	Yes	Yes
State	Yes	Yes	Yes	Yes
Country of birth	Yes	Yes	Yes	Yes
Mundlak correction	Yes	Yes	Yes	Yes
R^2 within	.0018	.0197	.0013	.0032
between	.0379	.0365	.0735	.0531
overall	.0268	.0295	.0477	.0434
N	21,974	21,853	21,933	17,467

Notes: Observations restricted to migrants that are either Australian citizen or permanent residents in the age group 25-65. Random effects estimator includes Mundlak correction terms (for a full list of the other covariates, please see the description in Table 2). Standard errors in parentheses: * p < .1; ** p < .05; *** p <.01.