

# Employability and Labor Income of Immigrants in the US: A Special Focus on the Roles of Language and Home Country Income Level<sup>a</sup>

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*Speaking the most-demanded languages is an asset in the labor market. However, coming from a high-income country may give immigrants an advantage in the labor market as those may have more transferable skills. This article investigates the determinants of the employability and labor income of immigrants and newcomer immigrants in the United States (US) labor market, specifically focusing on the role of language and income level of the home country. It applies the Heckman two-step selection procedure to the American Community Survey between 2000 and 2019. The findings show that immigrating from both high-income countries and countries where internationally most widely used languages (English, French, Portuguese, Spanish, and Chinese) are spoken gives immigrants an advantage in the US labor market compared to those from the countries where only national languages are spoken. This article emphasizes the key role of the income level of the home country on immigrants' labor income in the US. It contributes to the literature by employing the interaction terms of being from the same-income-level countries and the same-languages-speaking countries.*

**JEL codes:** F22, J15, J61

**Keywords:** Employability, Foreign language knowledge, Income level of home country, Immigrants, Labor income

## 1 Introduction

The United States (US) is one of the countries that host the biggest immigrant population compared to any other country. As of 2019, in the US, more than 50 million people—15.4% of the overall population— have been international immigrants born in another country (United Nations, 2019).<sup>1</sup> Immigrants have some labor market assets due to their home countries' characteristics and personal achievements and carry them wherever they immigrate as a lifetime investment. Some labor market assets like the knowledge of the most-

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<sup>1</sup> The US Census Bureau uses the term “foreign-born” to define “naturalized US citizens, lawful permanent residents (immigrants), temporary migrants (e.g. foreign students), humanitarian migrants (e.g. refugees and asylees), and unauthorized migrants” (USCB, 2020). This article uses the term “immigrants” to define people who did not have US citizenship at birth— naturalized US citizens or not US citizens.

demanding languages (Flubacher et al., 2018) are acquired through self-education or official education in their home countries. There is widespread language diversity in the labor market of the US due to the large immigrant population, and employers demand multilingual employees (Damari et al., 2017). Some studies (Chiswick & Miller, 2018; D. R. Williams, 2011) supported the positive contribution of bilingualism to earnings because knowing a foreign language— also a part of education (Becker, 1993)— is human capital. The human capital theory assumes that immigrants overcome labor market obstacles with their personal characteristics and by improving job-related skills like participating in an educational institution in the host country (Constant & Massey, 2005; Mancinelli et al., 2010) or learning the most-demanded languages.

On the other hand, some characteristics affect the immigrants in the labor market that are unchangeable, like the home country. All immigrants come from different home countries with different socioeconomic backgrounds, which also play key roles in the labor income of immigrants in the host country (Borjas, 1987; Duleep & Dowhan, 2008; Jasso & Rosenzweig, 1985; Johnston et al., 2015; Mattoo et al., 2008). Segmented labor market theory suggests that immigrants have challenges that are hard to overcome by improving their skills, such as the stringent anti-immigrant legal barriers in the host countries (Anderson & Huang, 2019) and labor market discrimination (Becker, 1971). In addition, some studies (Borjas, 1987; Duleep & Dowhan, 2008; Fleischmann & Dronkers, 2010; Jasso & Rosenzweig, 1985; Johnston et al., 2015) found that coming from high-income countries brings immigrants advantages in the labor market. By taking this finding a step further, this article investigates the employability and labor income of immigrants and newcomer immigrants in the US labor market, specifically focusing on the role of language and income level of the home country.

This article emphasizes the key role of the income level of the home country on immigrants' labor income in the host country, by limiting its scope to immigrants in the US that are in the working-age population who are either naturalized US citizens or not US citizens. The data of the American Community Survey (ACS 1% sample) based on the Integrated Public Use Microdata Series (IPUMS USA) database (Ruggles et al., 2021) from 2000 to 2019 is used. It contributes to the literature by interacting the characteristics of coming from the same-income-level countries (according to the World Bank categorization based on the income level of countries) and the same-languages-speaking countries (in which at least one common language is spoken; for example, Spanish is a common language for Argentina and Paraguay). In the ACS, the question related to language asks the respondents the language spoken in their home country and gets only one response. However, in some immigrants' home countries, more than one language is spoken. Moreover, even if the immigrants speak one language in their home country, they might know any other regional languages, such as Arabic, Chinese, English, French, German, Portuguese, Russian, or Spanish, almost at the native level (Graddol, 1999).<sup>2</sup> For example, Indians who speak Hindi in their home country can speak English almost at the native level because English is one of the official languages of India. Therefore, this study takes the possible knowledge of immigrants on the most demanded regional languages into consideration by grouping the birth countries of immigrants according to the languages spoken in their home country. However, this article

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<sup>2</sup> Graddol (1999) defines English and French as the major languages and Arabic, Chinese, German, Portuguese, Russian, and Spanish as regional languages, which are the most demanded languages in the trade and labor market.

cannot evaluate the contribution of the foreign language knowledge of immigrants learnt by their personal efforts to their employability and labor income in the US due to the lack of data. Thus, for example, this article cannot analyze the effect of having Portuguese knowledge on an Indian immigrant's labor market outcomes.

The remainder of this study is as follows. The next section summarizes the literature review on the employability and labor income level of immigrants, their language skills, and the income level of their home country. Section 3 introduces the data and describes the samples and variables. Section 4 presents the Heckman two-stage selection procedure details. Section 5 discusses the empirical findings, and Section 6 concludes the article by highlighting the findings.

## **2 Literature Review**

Employability is an ability to obtain and maintain jobs by achieving everyday tasks with job-specific skill sets (A. M. Williams, 2009) and includes the readiness to work (Flubacher et al., 2018). In short, employability, as an interactive concept (Gazier, 1998), refers to the sustainability of employment (Green et al., 2013). Employability includes the job-offer probability and the acceptance probability (Bloemen & Stancanelli, 2001). McQuaid & Lindsay (2005) indicate three components of employability: individual factors (skills and attributes, demographic characteristics, health and well-being, job seeking, adaptability and mobility), personal circumstances (household circumstances, work culture, access to resources), and external factors (demand factors and enabling support factors). For immigrants, one of the key factors is their legal status, which allows them to reside and work in the host country. Obviously, the immigrants who have work permits are more employable than other immigrants. Therefore, immigrant-friendly regulations of the host countries (Anderson & Huang, 2019; Carling, 2002) are mostly affected by the political and historical context (Green et al., 2013) and help immigrants get a job. Although immigrants benefit from the migration networks to find a job (Beine et al., 2010), having high qualifications is more effective in being employed. For example, Mancinelli et al. (2010) found that a high-level education contributes to employability more than belonging to an ethnic network in Italy. Another dimension increasing the employability of immigrants is the unemployment level of the host country. Fleischmann & Dronkers (2010) pointed out that the unemployment rate of immigrants is lower in countries with abundant low-skill jobs, dense immigrant populations and high GDP per capita than in the countries where the unemployment rate of native workers is high in Europe. Also, the immigrants from wealthier, more politically stable and developed countries are more likely to be employed (Fleischmann & Dronkers, 2010). 'Trailing immigrants', who are accompanying persons like spouses, children, and elder relatives, are less likely to be employed (A. M. Williams, 2009) due to the probable lack of working experience, work permit, language skills or qualifications (Green et al., 2013).

Employability is also highly related to reservation wage, the minimum wage offered to an individual to accept a particular job (Coen et al., 2010; Mortensen, 1986). Therefore, there is a reverse relationship between reservation wage and employability. Ahn & García-Pérez (2002) found that being older, having a working partner, holding high-level education, and living where the unemployment rate is low and generous unemployment benefits are accessible increase the reservation wage. Wealth affects reservation wage positively and employability negatively though small (Bloemen & Stancanelli, 2001). In general, as the

reservation wage of immigrants tends to be lower than native workers (Nanos & Schluter, 2014), citizenship status is a highly effective factor. However, the reservation wage of the second generation is higher than that of the first-generation (Constant et al., 2017).

The intersectionality of employment and migration regulations forces immigrants to face labor market flexibilities- numerical, functional, temporal and wage. As a result, immigrants may have more casual and seasonal jobs due to the work permit or visa restrictions, hold more than one job simultaneously with multitasking functionality, and show consent to accept low wages (A. M. Williams, 2009). The fact remains that immigrants face some obstacles in the labor market, such as more precarious working conditions than native workers (Bruno, 2015), asymmetric information about work experience between employers and employees (Akerlof, 1970; Bauer & Zimmermann, 1995), downskilling— working in a lower qualified job than formal education level due to the poor recognition of equivalent qualifications (Barbone et al., 2013; Kahanec, 2013; Kahanec et al., 2013), and labor-market discrimination (Bell, 1997; Bellante & Kogut, 1998; Constant & Massey, 2005; King, 1990), especially taste-based discrimination which is related to be unfitted of the employers' desired race, nationality, gender, sexual orientation, or other relevant characteristics (Becker, 1971). As the human capital theory suggested, immigrants may overcome some of these obstacles like asymmetric information (Akerlof, 1970; Bauer & Zimmermann, 1995) and downskilling (Barbone et al., 2013; Kahanec, 2013; Kahanec et al., 2013) by increasing their labor market experiences via stepping-stones, that are mostly sub-optimal initial jobs in the host country (A. M. Williams, 2009). However, there are unchangeable factors, such as features that are related to taste-based discrimination and the income level of the home country of an immigrant, which may affect the employability and labor income of the immigrant in the host country. Mattoo et al. (2008) stated that the immigrants from low- and middle-income countries are not treated equally with the immigrants from high-income countries in the US labor market even though these immigrants have ostensibly identical educational degrees. The reason is that developing countries face a lack of educational standards, and there is poor recognition of foreign educational qualifications in the host countries. Duleep & Dowhan (2008) also underlined the importance of the income level of immigrants' home country, which impacts the initial earnings due to its relationship with the education quality taken by immigrants and the skill transferability to the US. Moreover, the employers' attitudes are one of the keystones of the employability of immigrants. Lucas et al. (2014) found that liberal employers' attitudes toward having immigrant workers are more positive than conservative employers' attitudes in the US.

In the literature, it is more frequent to investigate the earnings of immigrants by comparing them with the earnings of native workers. Many studies confirmed that immigrant workers earn less than native workers in general (Anderson & Huang, 2019; Barrett & McCarthy, 2007; Barrett et al., 2012; Chiswick, 1978; Constant & Massey, 2005). Chiswick (1978) found that immigrant earnings may be equal to native worker earnings after 10 to 15 years of their migration. Several factors are influential on immigrants' labor income, such as education level, work experience (Anderson & Huang, 2019; Constant & Massey, 2005), ability in the language of the host country (Adserà & Pytliková, 2016; Barrett & McCarthy, 2007; Bellante & Kogut, 1998; Chiswick, 2008; Chiswick & Miller, 2015; Dustmann & Fabbri, 2003), English proficiency in the case that the dominant language used in the host country is not English (Chiswick, 1998), immigrant-friendly policies of the host country (Anderson & Huang, 2019; Carling, 2002), the duration of the stay in the host country (Bellante &

Kogut, 1998; Chiswick & Miller, 2015; Constant & Massey, 2005), age at migration (Borjas, 1987; Chiswick, 2008), and citizenship status (Anderson & Huang, 2019; Bauder, 2006).

When comparing earnings among immigrants (rather than comparing earning differences with native workers), the income level of the home country of immigrants and being multi-lingual also come forward as the determinants of their earnings in the host country. The studies focusing on the income level of immigrants' home countries agreed that the immigrants from high-income countries earn more than immigrants from low-income countries (Borjas, 1987; Duleep & Dowhan, 2008; Jasso & Rosenzweig, 1985; Johnston et al., 2015). Some studies (Borjas, 1987; Dudu, 2022; Duleep & Dowhan, 2008; Ikpebe & Seeborg, 2018; Johnston et al., 2015; Maskileyson, 2019; Mattoo et al., 2008) underlined the importance of the income level of the home country of immigrants prominently in the US and the UK. Since low-income countries cannot provide educational opportunities as good as high-income countries (Mattoo et al., 2008), non-citizen immigrants, mainly from low-income countries, may not be close substitutes for native workers (Hill et al., 2018). Dudu (2022) addressed that the earning gap among immigrant groups may differentiate at different educational levels in the US. Moreover, Duleep & Regets (2002) found that the earnings growth for immigrants from developing countries is higher than that for immigrants from developed countries in the US. Similarly, Ikpebe & Seeborg (2018) underlined the significant effect of the income level of the home country on African immigrants' earnings in the US. Also, Maskileyson (2019) remarked that the income level of the home country has long-term consequences for immigrants' health due to the effects on their income level in the US. Borjas (1987) reported that immigrants' initial earnings declined from 1970 to 1980 based on their entry year to the US.

Language spoken in the household and language spoken outside the family is mostly different from each other for immigrants. As stated by several studies (Adserà & Pytliková, 2016; Barrett & McCarthy, 2007; Bellante & Kogut, 1998; Chiswick & Miller, 2015; Dustmann & Fabbri, 2003; Hwang et al., 2010), speaking the host country's language gives a great advantage to immigrants in the labor market. Moreover, some studies (Chiswick & Miller, 2018; Robinson-Cimpian, 2014; D. R. Williams, 2011) found that a language spoken by an immigrant except for the language of the host country impacts earnings. For example, D. R. Williams (2011) found that the return of speaking a second language at work may increase earnings by 8%-30% in several European countries. Moore et al. (2014) pointed out that non-US workers with English-Spanish bilingual ability earn more and have higher employability than monolingual Spanish speakers in the US. On the other hand, Robinson-Cimpian (2014) studied US citizens who are monolingual English speakers or Spanish speakers with very well English levels and concluded that Spanish-speaker males earn slightly lower than monolingual males. Although the findings of Chiswick & Miller (2018) for the US-born English-Spanish bilinguals are similar to the findings of Robinson-Cimpian (2014), they revealed that the US-born bilinguals in other languages, such as Dutch, Italian, Greek, Hebrew, Chinese, Korean earn more due to the contribution of these languages to the economy and finance. In contrast, Carliner (1981) and Fry & Lowell (2003) did not find any significant effects of knowing a language except for the host country's language on the immigrants' earnings. This article contributes to the literature by focusing on the interactions of two characteristics of the immigrants' birth countries: being from a high-income country and speaking the most-demanded languages.

### 3 Data

This article uses the data of the American Community Surveys (ACS 1% sample), which is the US census surveys, based on the Integrated Public Use Microdata Surveys (IPUMS USA) database (Ruggles et al., 2021) from 2000 to 2019. After omitting the outliers based on labor income and missing values, the main sample, namely ‘overall immigrants’, covers aged 15 to 64 in labor force and includes 2,567,588 observations. The sub-sample, namely ‘newcomers’, contains 87,747 new immigrants who came to the US in the survey year or the previous year. These samples do not include self-employed people. Since the surveys do not ask the respondents whether they got an education in the US or not, there is no information for evaluating the contribution of getting an education in the US to the employability and labor income of the immigrants. However, certainly, newcomers do not hold a degree from the US. Thus, this sub-sample allows us to investigate the effects of the immigrants’ human capital (such as the education level or English language knowledge) brought from their home countries on their employability and labor income in the US.

In the employability analyses, ‘Employment Status’ of the respondent in labor force is used as the dependent binary variable: ‘employed’ and ‘unemployed.’ In analyzing the determinants of labor income, ‘Labor Income’ was used as the continuous dependent variable. It was the total pre-tax wage and salary income, including commissions, cash bonuses, tips and other income received from an employer, deflated by the consumer price index (World Bank, 2021c) to convert into real income. After omitting the outliers, zero and missing real income values, we used their logarithmic values in the analyses.

‘Gender’ was a binary variable that included males and females. ‘Citizenship’ was a binary variable that included naturalized US citizens and non-US immigrants. This variable was used only for the sample of overall immigrants because newcomers did not meet the naturalization requirements in the US. ‘Region’ variable indicated where the respondent lives, namely Northeast, Midwest, Southern, and Western regional divisions.<sup>3</sup> ‘Occupation’ variable was categorized by the 2018-onward census occupational classification system IPUMS USA (2021). ‘Education’ variable represented the degree that the respondent holds. ‘Marital Status’ variable had two categories: married and not married. ‘Age’ variable consisted of three cohorts: 16-29, 30-49, and 50-64. ‘Race’ variable was categorized as white, black, and other races (including mixed races).<sup>4</sup> ‘Age at Migration’ variable, used only for overall immigrants, was classified as to whether the respondent came to the US before 18 years old or not. ‘Duration of Stay’ in the US categorical variable was used for only newcomers and took two values: first year and second year. ‘English Speaking Level’ variable showed the English-speaking level of the respondent.

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<sup>3</sup> See the states covered by each region in Appendix A.1.

<sup>4</sup> The race question in the ACS includes the major race groups in the US: ‘White’, ‘Black/African American/Negro’, ‘American Indian or Alaska native’, ‘Chinese’, ‘Japanese’, ‘Other Asian or Pacific Islander’, ‘Other Race, nec.’, ‘Two Major Races’, and ‘Three or More Major Races.’, but excludes major ethnic groups in the world like Arabs and Slavs, except for the biggest immigrant group in the US; Hispanics. The ACS controls for the Hispanic/Spanish/Latino origin with a separate question. On the other hand, several studies (Alim, 2016; Fought, 2011) underline the powerful connection between language and race. Therefore, this article controlled for the relation between language and race. The correlation analysis showed an 87% correlation between having Hispanic/Spanish/Latino origin and speaking Spanish and 89% correlation between having Chinese origin and speaking Chinese. Since the language groups and ethnic groups are highly correlated, this article divided the race question into three main groups not to control it twice in the analysis.

‘Language’ variable referred to the possible knowledge of a regional language. According to the language hierarchies of Graddol (1999), who conceptualized a world hierarchy of languages, English and French are major languages as the global *lingua franca*, and they are most frequently learned as second languages. In addition, Graddol (1999) listed regional languages like Arabic, German, Chinese, Portuguese, Spanish, and Russian and stated that major and regional languages are the most demanded languages in the trade and labor market. In some countries like India, Ireland, Cameroon, and Malta, there is more than one official language, and one of them is English. Although people in these countries do not speak English at home, they know English at a particular level. Similarly, in some countries like Haiti (French is an official language in Haiti along with Haitian Creole) and Kyrgyzstan (Russian is an official language in Kyrgyzstan along with Kyrgyz), one of the regional languages is an official language. Moreover, in some countries, although one of the regional languages is not an official language, a regional language is the most frequently spoken language in some parts of the country. For example, in Ukraine, the official language is Ukrainian, but Russian is the language of communication (Gradirovski & Esipova, 2008). In countries like Tunisia and Belgium, more than one major or regional language is official. This article focused on any knowledge level of a language and paid no attention to knowledge in that language at the native level. In addition, the ‘Language’ variable was classified based on the birthplace of the respondents because only 12.8% of overall international immigrants worldwide are children (UNICEF, 2021). Therefore, this article assumed that people learn these languages in their home countries.

‘Income Level of home country’ variable was the income level classification of the home countries annually calculated by the World Bank (2021a). Each year, the World Bank classifies countries as low-income, lower-middle-income, upper-middle-income, and high-income. However, the income level of a country is changeable year by year. Therefore, if a country is classified as a low-income country by the World Bank for a longer period between 2000 and 2019, it is accepted as a low-income country. Since there is not enough observation for each level when using the World Bank’s four-level classification, this article merged low, lower-middle and upper-middle-income countries. It used two categories: low-and-middle-income countries and high-income countries.

This article benefited from the interaction terms of the language variables (‘Language’ and ‘English Speaking Level’) and ‘Income Level of Home Country’. It classified 190 countries in total (138 low-and-middle-income countries and 52 high-income countries) based on the most spoken regional languages in the countries.<sup>5</sup> Russian and German regional languages were classified as if they are national languages because of the lack of Russian-speaking high-income countries and German-speaking low-and-middle-income countries.

The descriptive statistics provided in Table 1 show that the unemployment rate of immigrants from low-and-middle-income countries (4%) was higher than that for immigrants from high-income countries (3.4%) in the 2000-2019 period. The share of overall unemployed immigrants (3.9%) was low. The share of overall unemployed people in the labor force of the US (5.8%) for the given period was higher World Bank (2021b). Similarly, for newcomers, the unemployment rate of immigrants from low-and-middle-income countries (5.5%) is higher than that of immigrants from high-income countries (3.8%).

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<sup>5</sup> Table A.2 provides the classification details.

**Table 1:** Average Real Labor Income and Unemployment Rate by Language and Income Level of Home Countries

	Overall Immigrants				Newcomer Immigrants			
	HIC		non-HIC		HIC		non-HIC	
Language	Income	UNR	Income	UNR	Income	UNR	Income	UNR
English	30,459	3.7%	29,875	3.2%	26,847	6.1%	21,999	5.0%
French	31,520	3.1%	22,341	4.4%	25,397	2.5%	12,438	6.6%
Spanish	30,597	2.8%	20,308	4.4%	23,490	2.6%	12,679	5.6%
Chinese	32,720	3.0%	26,186	3.2%	21,950	4.6%	15,856	4.3%
Arabic	26,310	5.0%	22,319	5.4%	19,853	3.6%	13,016	9.9%
Portuguese	29,993	4.0%	24,812	3.6%	26,602	6.3%	17,252	4.4%
Multiple Regional	30,999	3.4%	27,564	4.4%	27,735	3.7%	18,417	7.3%
Only National	28,265	3.2%	25,704	3.7%	24,093	2.8%	14,937	6.3%
Total	29,860	3.4%	23,242	4.0%	25,149	3.8%	15,804	5.5%

Source: Ruggles et al. (2021).

Notes: *HIC* stands for high-income countries, *non-HIC* stands for low-and-middle-income countries, *Income* is the average real labor income in USD in 2000 prices, and *UNR* is the unemployment rate.

According to the characteristics of knowing the same languages, Table 1 shows that the unemployment rate was higher among immigrants from the low-and-middle-income countries where French, Spanish, Arabic, national languages, and multiple regional languages are spoken. Surprisingly, the unemployment rate of immigrants from the low-and-middle-income countries where English and Portuguese are spoken was lower. For the sample of newcomers, Table 1 indicates that the unemployment rate was higher for the immigrants from the low-and-middle-income countries than those from high-income countries. However, the unemployment rate for newcomers from Chinese-speaking countries was almost the same for both income level country groups. The unemployment rate of immigrants from English- and Portuguese-speaking countries was higher for immigrants from high-income countries. For all languages, descriptive statistics show that immigrants from high-income countries earn higher than those from low-and-middle-income countries, which is valid in both samples. This gap between these two groups is larger for newcomers. Çolakoglu et al. (2018) suggested that this gap may occur due to non-linear career entry.

#### 4 Methodology

Heckman two-step selection procedure was applied to analyze the determinants of employability and earnings for both samples: overall immigrants and newcomers. Six models were used in total: three models for overall immigrants (Model 1, Model 1A, Model 1B) and three models for newcomers (Model 2, Model 2A, Model 2B).

For overall immigrants, Model 1 was used as the benchmark model as follows:

$$\begin{aligned}
 EmploymentStatus_{j,t} &= \beta_0 + \sum_i \beta_{1,i} X_{i,j,t} + \sum_i \beta_{2,i} Y_{i,j,t} + \epsilon_{j,t} \\
 \ln(LaborIncome)_{j,t} &= \alpha_0 + \sum_i \alpha_i X_{i,j,t} + u_{j,t}
 \end{aligned} \tag{1}$$

where  $i, j, t$  denotes the variable, individual, and time, respectively. The set of variables  $X$

includes Gender, Age, Marital status, Citizenship, Region, Education, Race, and Income level of home country, and the set of variables Y contains Occupation and Age at migration. Model 1A extends Model 1 by including the interaction terms of ‘English Speaking Level’ and ‘Income Level of Home Country’. Model 1B also extends Model 1 by adding the interaction term of ‘Language’ and ‘Income Level of Home Country’.

For newcomer immigrants, Model 2 was used as the benchmark model as follows:

$$\begin{aligned} EmploymentStatus_{j,t} &= \gamma_0 + \sum_i \gamma_{1,i} K_{i,j,t} + \sum_i \gamma_{2,i} M_{i,j,t} + v_{j,t} \\ \ln(LaborIncome)_{j,t} &= \theta_0 + \sum_i \theta_i K_{i,j,t} + \varepsilon_{j,t} \end{aligned} \quad (2)$$

where  $i, j, t$  denotes the variable, individual, and time, respectively. The set of variables K includes Gender, Age, Marital status, Region, Education, Race, and Income level of home country, and the matrix M includes Occupation and Duration of stay. Model 2A extends Model 2 by including the interaction term of ‘English Speaking Level’ and ‘Income Level of Home Country’ and Model 2B extends Model 2 by adding the interaction term of ‘Language’ and ‘Income Level of Home Country’. Moreover, year dummies are included in all specifications to control for year fixed effects.

## 5 Empirical Findings and Discussion

This part is divided into four sub-sections: demographic variables, language skills, income level of birth country and interactions of language skills and income level of the birth country.

### 5.1 Demographic Variables

All models show that all variables are significant in determining the employability and earnings of immigrants for both samples. The results for overall immigrants and newcomers are presented in Table 2 and Table 3, respectively. Female immigrants are less likely to be employed and earn less than male immigrants for both samples. For overall immigrants, getting older is an advantage to being employed, compared to the 16-29 age cohort. Newcomers older than 50 are less likely to be employed, but they earn higher wages, which shows that their reservation wage is high, as [Ahn & García-Pérez \(2002\)](#) suggested. For the sample of overall immigrants, married people are more employable and earn higher than singles. On the other hand, singles are more likely to be employed for the sample of newcomers, but they earn less than married people. For both samples, people who live in Southern states are more employable but earn less than in other regions, i.e. the reservation wages of the immigrants in the region are lower than in other regions. The employability and earnings are higher for the occupations related to management, business, science, and arts than the other occupations for both samples. Compared to white immigrants, black immigrants are less employable and earn less for both overall and newcomer immigrants. Therefore, as several studies ([Bell, 1997](#); [Bellante & Kogut, 1998](#); [Constant & Massey, 2005](#); [King, 1990](#)) pointed out, black immigrants in the US may suffer from labor market discrimination.

By being consistent with the findings of some studies ([Borjas, 1987](#); [Chiswick, 2008](#)), the findings indicate that immigrating to the US in adulthood affects employability positively and labor income negatively for overall immigrants. Therefore, since immigrating to the US

in childhood may allow them to get an education and to have higher English proficiency, the reservation wage of immigrants who came to the US in adulthood may be lower than immigrants who came to the US in childhood. A longer stay in the US, which is highly effective for immigrants in the labor market (Bellante & Kogut, 1998; Chiswick & Miller, 2015; Constant & Massey, 2005), may also ease the naturalization process. Consistent with Anderson & Huang (2019) and Bauder (2006), this article found that naturalized immigrants are more likely to be employed and earn more than immigrants who are not US citizens. As the duration of their stay increases, newcomers' employability increases.

The findings related to the education level are consistent with the human capital theory (Becker, 1993). Compared to the bachelor's degree holders, people who do not hold a degree and hold a high school degree are less likely to be employed than master's and doctoral degree holders for overall immigrants, and the earnings are higher as the education level increases. On the other hand, for newcomers, immigrants who do not have a degree are more likely to be employed than immigrants who hold high school and bachelor's degrees while they earn less than the others. This finding shows that the reservation wage of newcomers who do not have a degree may be lower than the others.

### 5.2 Language Skills

In the sample of overall immigrants, compared to only English-speaking immigrants, other immigrants earn less, and their employability may change to their English-speaking levels. Possibly, native English-speaking immigrants are a good substitute for satisfying the labor demand in the US because they may integrate into the US labor market in a shorter term than the immigrants who are not native English speakers. As several works (Adserà & Pytliková, 2016; Barrett & McCarthy, 2007; Bellante & Kogut, 1998; Chiswick, 2008; Chiswick & Miller, 2015; Dustmann & Fabbri, 2003) suggested, this article confirmed that the language ability of the host country is highly effective on the employability and labor income of immigrants. Moreover, the immigrants who speak English very well and are from high-income countries are more likely to be employed and earn more than the immigrants who can speak only English or those from low-and-middle-income countries.

**Table 2:** Estimation Results for Overall Immigrants

	Employability (Probit)			Labor Income (OLS with Heckman selection)		
	Model 1	Model 1A	Model 1B	Model 1	Model 1A	Model 1B
Female	-0.095***	-0.092***	-0.097***	-0.355***	-0.356***	-0.353***
Not Married	-0.092***	-0.09***	-0.093***	-0.140***	-0.143***	-0.138***
Adulthood in the US	0.076***	0.081***	0.081***			
HIC	0.017***	0.002***	0.084***	0.092***	0.061***	0.079***
Not Citizen	-0.071***	-0.063***	-0.08***	-0.234***	-0.18***	-0.241***
<b>Age, Ref.: 16-29</b>						
30-49	0.099***	0.097***	0.097***	0.456***	0.475***	0.452***
50-64	0.059***	0.059***	0.055***	0.402***	0.439***	0.398***
<b>Region, Ref.: Northeast</b>						
Midwest	-0.027***	-0.029***	-0.02***	-0.083***	-0.094***	-0.076***
Southern	0.056***	0.057***	0.053***	-0.074***	-0.076***	-0.079***

Western	-0.036***	-0.034***	-0.038***	-0.048***	-0.051***	-0.05***
<b>Race, Ref.: White</b>						
Black	-0.146***	-0.151***	-0.144***	-0.022***	-0.075***	-0.04***
Other	0.003***	0.001***	0.001	0.004***	0.008***	0.004***
<b>Education, Ref: Bachelor's degree</b>						
No Degree	-0.111***	-0.097***	-0.123***	-0.557***	-0.457***	-0.557***
High School	-0.047***	-0.046***	-0.053***	-0.357***	-0.328***	-0.355***
Masters	-0.003***	-0.004***	-0.001	0.227***	0.21***	0.231***
PhD	0.059***	0.058***	0.064**	0.331***	0.309***	0.355***
<b>Occupation, Ref.: Management, Business, Science, and Arts</b>						
Service	-0.078***	-0.076***	-0.08***			
Sales & Office	-0.146***	-0.147***	-0.144***			
Cons. & Main.	-0.320***	-0.313***	-0.327***			
Prod. &Trans.	-0.192***	-0.189***	-0.193***			
<b>English Level, Ref.: Only English</b>						
Very Well		-0.004***			-0.016***	
Well		0.013***			-0.113***	
Not Well		-0.01***			-0.223***	
No English		-0.09***			-0.362***	
<b>Interaction: HIC and English level</b>						
HIC*Very Well		0.015***			-0.035***	
HIC*Well		0.025***			-0.029***	
HIC*Not Well		0.016***			-0.004	
HIC*No English		0.125***			-0.021***	
<b>Language, Ref.: National language</b>						
English			0.054***			0.102**
French			-0.03***			-0.095***
Spanish			0.061***			0.057***
Chinese			0.029***			-0.06***
Arabic			-0.157***			-0.209***
Portuguese			0.09***			0.08***
Multiple Reg. Lang.			-0.065***			-0.018***
<b>Interaction: HIC and Language</b>						
HIC*English			-0.101***			0.026***
HIC*French			0.015***			0.167***
HIC*Spanish			-0.015***			0.018
HIC*Chinese			-0.083***			0.069***
HIC*Arabic			-0.161***			-0.045***
HIC*Portuguese			-0.135***			0.168***
HIC*Multiple Reg. Lang.			0.048***			0.126***
invMillsRatio	1.622	1.701	1.527			
R2				0.191	0.2	0.194

*Note:* HIC stands for high-income country. Each model includes an intercept and year dummies but not reported to save space. \*\*\*, \*\*, and \* denotes significance at 1%, 5%, and 10%, respectively. Number of observations is 2,567,588.

**5.3 Income Level of Birth Country**

For both samples, this study, by suggesting that immigrants from high-income countries are more employable and earn more than immigrants from low-and-middle-income countries, confirms the findings of Borjas (1987); Duleep & Dowhan (2008); Ikpebe & Seeborg (2018); Johnston et al. (2015); Maskileyson (2019), and Mattoo et al. (2008). This article supports the findings of Mattoo et al. (2008), which suggested that immigrating from high-income countries—with a high quality of education—positively affects employability and labor income in the US.

**Table 3:** Estimation Results for Newcomer Immigrants

	Employability (Probit)			Labor Income (OLS with Heckman selection)		
	Model 2	Model 2A	Model 2B	Model 2	Model 2A	Model 2B
Female	-0.218***	-0.216***	-0.221***	-0.266***	-0.29***	-0.252***
Not Married	0.078***	0.079***	0.077***	-0.188***	-0.186***	-0.186***
HIC	0.101***	-0.004***	0.304***	0.26***	0.267***	0.18***
<b>Age, Ref.: 16-29</b>						
30-49	-0.003***	-0.001	-0.001	0.356***	0.367***	0.358***
50-64	-0.17***	-0.160***	-0.168***	0.373***	0.374***	0.371***
<b>Duration, Ref.: First year</b>						
Second year	0.117***	0.115***	0.12***			
<b>Region, Ref.: Northeast</b>						
Midwest	-0.038***	-0.043***	-0.035***	-0.127***	-0.13***	-0.122***
Southern	0.084***	0.082***	0.083***	-0.173***	-0.162***	-0.175***
Western	-0.059***	-0.059***	-0.057***	-0.046***	-0.044***	-0.057***
<b>Race, Ref.: White</b>						
Black	-0.132***	-0.145***	-0.119***	-0.064***	-0.176***	-0.129***
Other	0.082***	0.068***	0.072***	-0.06***	-0.054***	-0.04***
<b>Education, Ref.: Bachelor's degree</b>						
No Degree	0.017***	0.053***	0.016***	-0.48***	-0.353***	-0.475***
High School	-0.031***	-0.013***	-0.031***	-0.375***	-0.316***	-0.363***
Masters	0.063***	0.055***	0.058***	0.22***	0.214***	0.245***
PhD	0.445***	0.432***	0.427***	0.081**	0.13***	0.183***
<b>Occupation, Ref.: Management, Business, Science, and Arts</b>						
Service	-0.031***	-0.021***	-0.03***			
Sales & Office	-0.202***	-0.201***	-0.195***			
Cons.& Main.	-0.231***	-0.213***	-0.232***			
Prod. & Trans.	-0.18***	-0.167***	-0.172***			
<b>English Level, Ref.: Only English</b>						
Very Well		0.066***			-0.116***	
Well		0.02***			-0.295***	
Not Well		0.005			-0.32***	
No English		-0.048***			-0.429***	
<b>Interaction: HIC and English level</b>						

HIC*Very Well		0.128***		-0.202***
HIC*Well		0.187***		-0.128***
HIC*Not Well		0.4***		-0.035
HIC*No English		-0.147***		-0.096
<b>Language, Ref.: National language</b>				
English		0.067***		0.188***
French		-0.03***		0.045
Spanish		0.048***		0.134***
Chinese		0.05***		-0.123***
Arabic		-0.166***		0.172***
Portuguese		0.139***		0.124***
Multiple Reg. Lang.		-0.031***		0.243***
<b>Interaction: HIC and Language</b>				
HIC*English		-0.474***		0.38***
HIC*French		0.191***		-0.093
HIC*Spanish		0.025**		-0.264***
HIC*Chinese		-0.583***		0.312***
HIC*Arabic		0.025		-0.095
HIC*Portuguese		-0.515***		0.602***
HIC*Multiple Reg. Lang.		-0.023***		0.082*
invMillsRatio	-4.116	-3.677	-3.959	
R2				0.168 0.175 0.176

*Note:* HIC stands for high-income country. Each model includes an intercept and year dummies but not reported to save space. \*\*\*, \*\*, and \* denotes significance at 1%, 5%, and 10%, respectively. Number of observations is 87,747.

#### 5.4 Interactions of Language Skills and Income Level of Birth Country

For overall immigrants, immigrating from countries where English, Spanish, and Portuguese are spoken is an asset in the US labor market. The labor income of immigrants from these countries is higher than those from countries where only national languages are spoken. However, immigrants from countries that speak Arabic, French, Chinese, and multiple regional languages earn less than immigrants from countries that speak only national languages. Since a job applicant's name signals their ethnicity, religion, and race (Bertrand & Mullainathan, 2004; Leckcivilize & Straub, 2018), these immigrants may face taste-based discrimination. In this respect, immigrant-specific active labor market policies (ALMPs) may be a response to labor market discrimination. Counselling services about the labor market, job training, and wage supplement in Denmark (Liebig, 2007), aptitude test, job search training, and skill provision in Germany (Thomsen et al., 2013), and language courses in Estonia (Kivi et al., 2020) are examples of such policies.

For overall immigrants, except for immigrants from Arabic countries or high-income countries, immigrants from high-income major and regional languages spoken countries are more employable and earn more than those from low-and-middle-income countries where only national languages are spoken. The immigrants from high-income Arabic-speaking countries are less employable and earn less than those from low-and-middle-income countries where only national languages are spoken. These findings show that immigrants from

Arabic-speaking countries are more vulnerable than those from other countries in the US labor market. For newcomers, except for the immigrants from Arabic-speaking countries, immigrants from high-income countries and countries that speak major and regional languages are more employable than those from low- and middle-income countries that speak only national languages. On the other hand, the interactions of ‘Language’ and ‘Income Level of Home Country’ variables are statistically significant and positive for immigrants from English, French, Chinese, Portuguese, and multiple regional languages-speaking countries. This article contributes to the literature by grouping the birth countries of immigrants based on the languages spoken and the income level and interacting with these groups.

## **6 Conclusion**

The human capital and the segmented labor market theories are the two prominent theories in the literature related to migration and labor market. The human capital theory highlights that immigrant workers can increase the likelihood of employability and earn more by improving their skills or gaining transferable skills. On the other hand, the segmented labor theory deliberates challenges of immigrants like the stringent anti-immigrant legal barriers and labor market discrimination in the host countries. This article focuses on the possible advantages of immigrating from a high-income country and a country where regional languages are spoken to the US. To this end, Heckman two-step selection procedure is applied to the American Community surveys between 2000 and 2019.

The estimations show that immigrating from both the high-income countries and the countries where major and regional languages, such as Chinese, English, French, Portuguese, and Spanish but Arabic, are spoken gives immigrants an advantage in the US labor market, compared to those coming from the countries where only national languages are spoken. The Arabic-speaking immigrants have a disadvantage in the US labor market. Moreover, only English-speaking immigrants earn more than other immigrants. However, the immigrants who came from high-income countries and spoke only English are more likely to be employed and earn more than the immigrants who can speak English at some level or immigrants from low-and-middle-income countries. Therefore, immigrants who speak English in their home country and came from high-income countries are the most advantaged group among the immigrants in the US.

Like Denmark, Germany, and Estonia, the US may develop immigrant-specific ALMPs to mitigate the effects of labor market discrimination. Moreover, to reveal the effects of the foreign language knowledge of immigrants and the countries where immigrants get an education over the US labor market, it is important to collect data for future studies; because there is a possibility that employers may be assessing the skills of immigrants in the hiring process, taking into account the country where the immigrants were educated, not the place where the immigrants were born.

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## Appendix: Additional Tables

**Table A.1:** States by Regions

Northeast	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Atlantic Division: New Jersey, New York, Pennsylvania.
Midwest	Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota.
Southern	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma/Indian Territory, Texas.
Western	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Alaska, California, Hawaii, Oregon, Washington.

**Table A.2:** Classification of Countries by Language and Income Level

Language	Low-and-middle-income Countries	High-income Countries
English	Guyana, Micronesia, Marshall Islands, Kiribati, Tuvalu, Tonga, Solomon Islands, Papua New Guinea, Swaziland, Lesotho, Nigeria, Ghana, Pakistan, India, Philippines, Palau, Nauru, Fiji, S. Africa, Namibia, Botswana, Mauritius, Zimbabwe, Zambia, Uganda, Tanzania, Malawi, Kenya, Ethiopia, Sierra Leone, Liberia, Gambia, South Sudan	Bermuda, Bahamas, Barbados, Dominica, Grenada, Trinidad and Tobago, the UK, the Netherlands, Gibraltar, Malta, New Zealand, Australia, Cyprus, Brunei
French	Congo, Ivory Coast, Gabon, Central African Republic, Madagascar, Togo, Senegal, Niger, Mali, Guinea, Burkina Faso, Benin, Haiti	France, Monaco
Arabic	Morocco, Egypt, Syria, Iraq, Libya, Eritrea, Somalia, Mauritania, Yemen	UAE, Saudi Arabia, Qatar, Oman, Kuwait, Bahrain
Chinese	China	Taiwan, Macau, Hong Kong
Portuguese	Brazil, Sao Tome and Principe, Angola, East Timor, Cape Verde, Mozambique, Guinea-Bissau	Portugal
Spanish	El Salvador, Guatemala, Honduras, Nicaragua, Bolivia, Paraguay, Mexico, Costa Rica, Panama, Cuba, Jamaica, Argentina, Chile, Colombia, Ecuador, Peru, Uruguay, Venezuela	Spain
Multiple Regional Languages	Vanuatu, Cameroon, Seychelles, Djibouti, Burundi, Tunisia, Sudan, Palestine, Equatorial Guinea, Algeria, Malaysia, Lebanon, Chad, Rwanda, Comoros	Canada, Andorra, Israel, Singapore, Switzerland, Belgium, Luxembourg
National Language(s)	Georgia, Armenia, Kosovo, Albania, Sri Lanka, Bhutan, Vietnam, Thailand, Indonesia, Mongolia, Lithuania, Latvia, Bosnia and Herzegovina, Nepal, Myanmar, Bangladesh, Cambodia, Afghanistan, Laos, North Korea, Serbia, Montenegro, Croatia, Yugoslavia, Romania, Belize, Turkey, Suriname, Bulgaria, Maldives, Iran, Turkmenistan, Ukraine, Moldova, Uzbekistan, Kazakhstan, Azerbaijan, Belarus, Russia, Tadjikistan, Kirghizstan	Estonia, Slovenia, Poland, Hungary, Denmark, Finland, Iceland, Norway, Sweden, Liechtenstein, Greece, Italy, Czech Republic, Slovakia, South Korea, Japan, Germany, Austria

*Source:* Author's own classification.