

# High-skilled Immigrants in the Massachusetts Civilian Labor Force



City of Boston  
Office of the Mayor  
Martin J. Walsh

Boston Redevelopment Authority  
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**Produced by the BRA Research Division**

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## **Some Definitions:**

***Foreign-born Worker*** – used interchangeably with “immigrant worker” throughout this presentation to refer to persons born outside the United States, excluding those born abroad to American citizens. Puerto Ricans are U.S. citizens and are not considered immigrants

***Civilian Labor Force*** - A term used by the U.S. Bureau of Labor Statistics (BLS) to describe the subset of Americans who have jobs or are seeking a job, are at least 16 years old, are not serving in the military and are not institutionalized

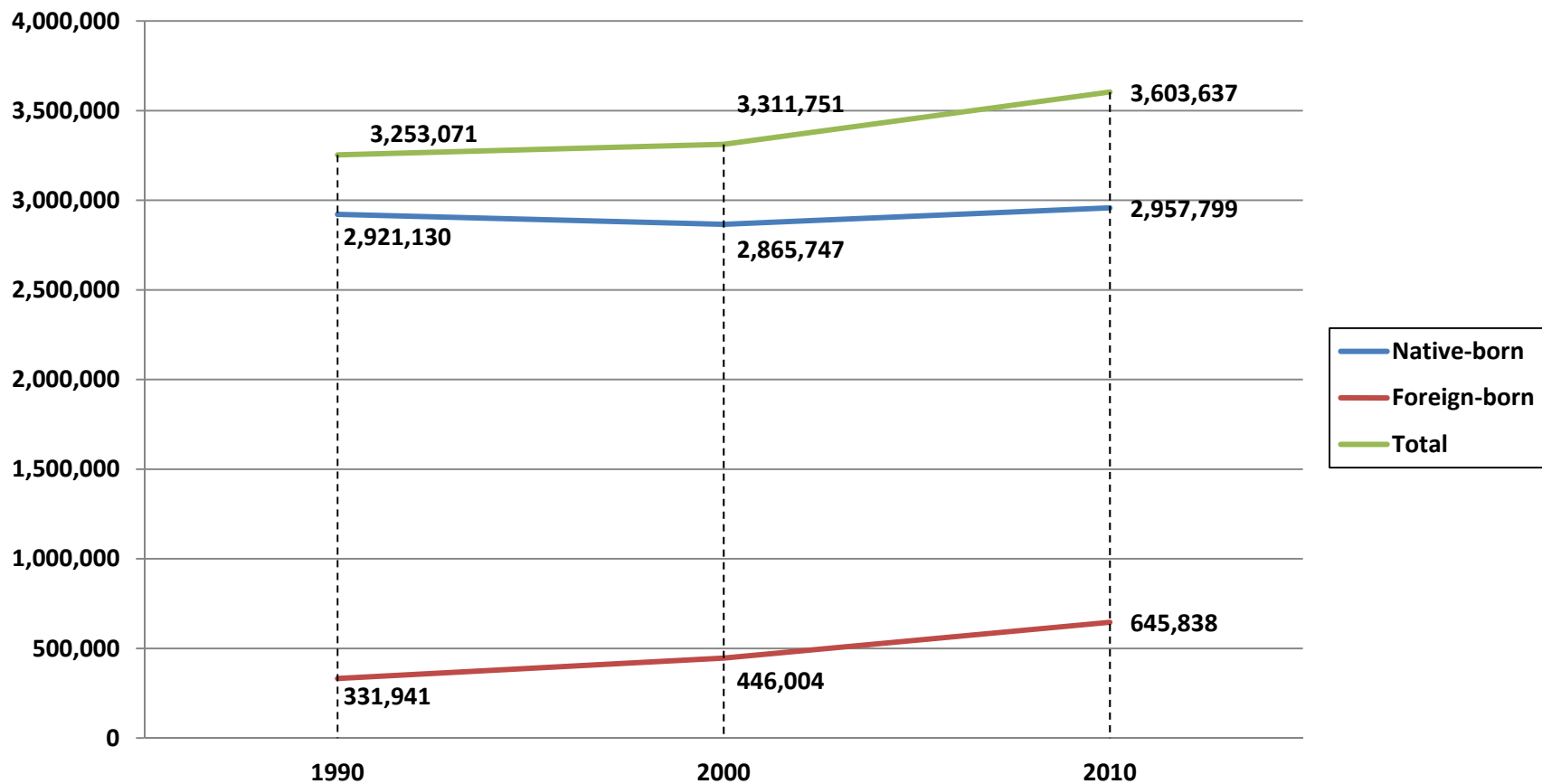
***High-Skilled/Mid-Skilled/Low-Skilled Foreign-born Worker*** – defined as foreign-born persons in the civilian labor force with at least a Bachelor’s degree (BA+) - high-skilled; or those with some college or associated degree – mid-skilled; and those lacking a high school diploma or less – low-skilled

***Limited English Proficiency (LEP)*** – the term refers to any person age 5 and older who reported speaking English “less than well,” as classified by the U.S. Census Bureau

***Average Wages*** - the sum of wages, tips, and the like subject to Federal income taxes as reported by employers on Form W-2

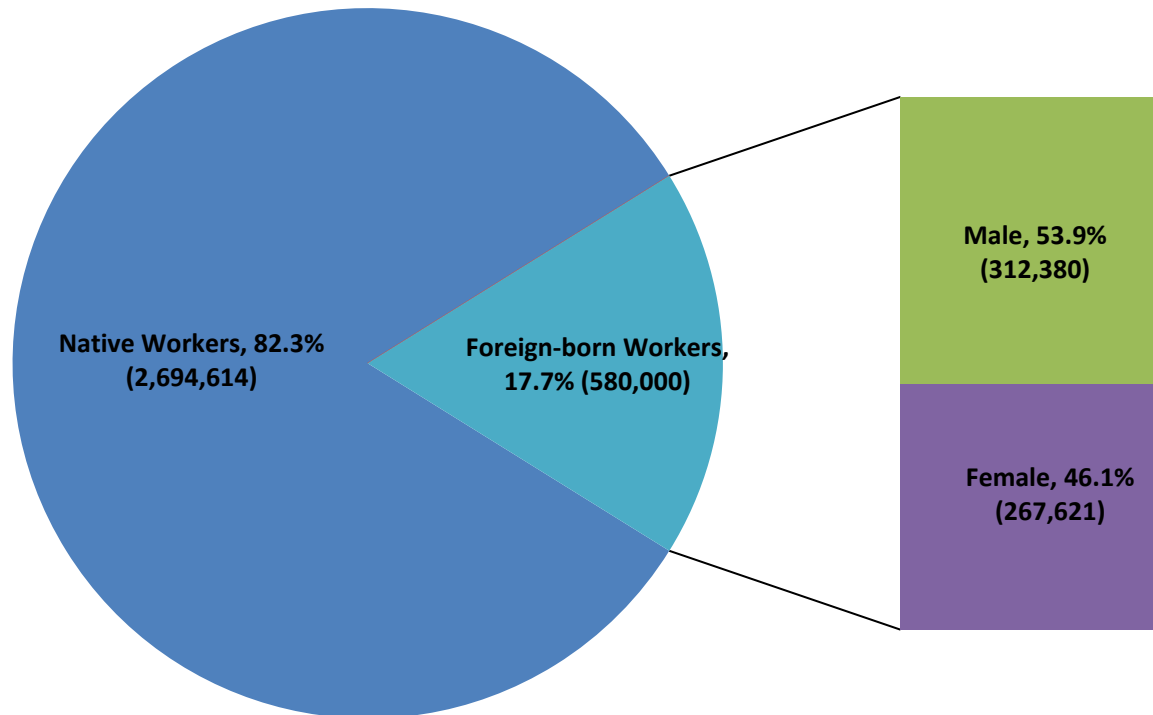
**Immigrants are an increasingly important source of labor for the Massachusetts economy. The share of the workforce that is foreign-born has increased from 10.2% in 1990 to 17.9% in 2010 with foreign-born workers almost doubling in number (94.6%)**

**Share of Workers in the Massachusetts Civilian Labor Force by Nativity**



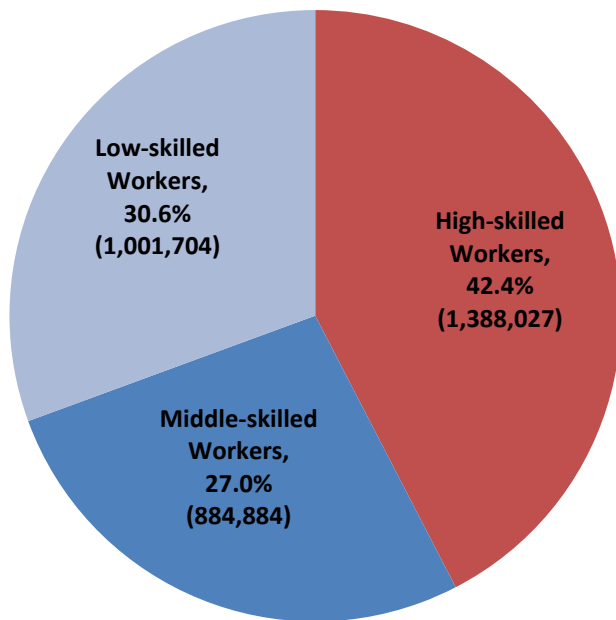
**According to the U.S. Census Bureau there were 580,000 foreign-born workers in the Massachusetts civilian labor force in 2011, accounting for 17.7% of the total workforce, the majority of which males (53.9%)**

**Share of Foreign-born Workers in the Massachusetts Civilian Labor Force - 2011**

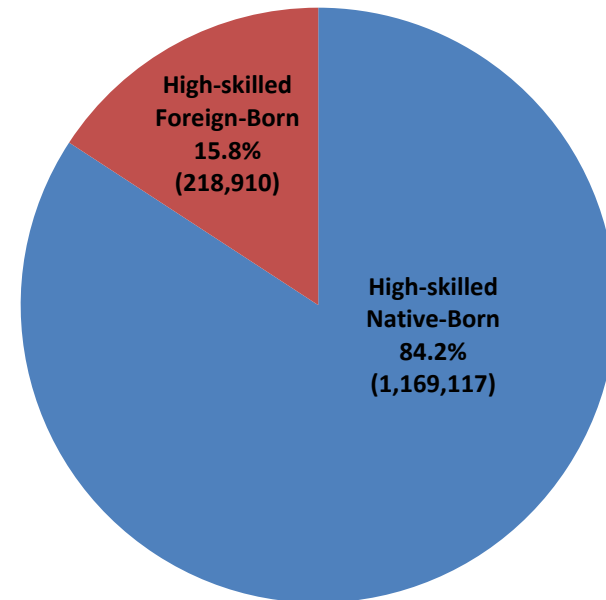


**As a result of the growth of the knowledge economy, there were 1,388,027 high-skilled workers in the Massachusetts workforce accounting for 42.4% of the state's total labor force. Of these, 218,910 or 15.8% were foreign-born**

**Share of Workers by Skill Levels - 2011**

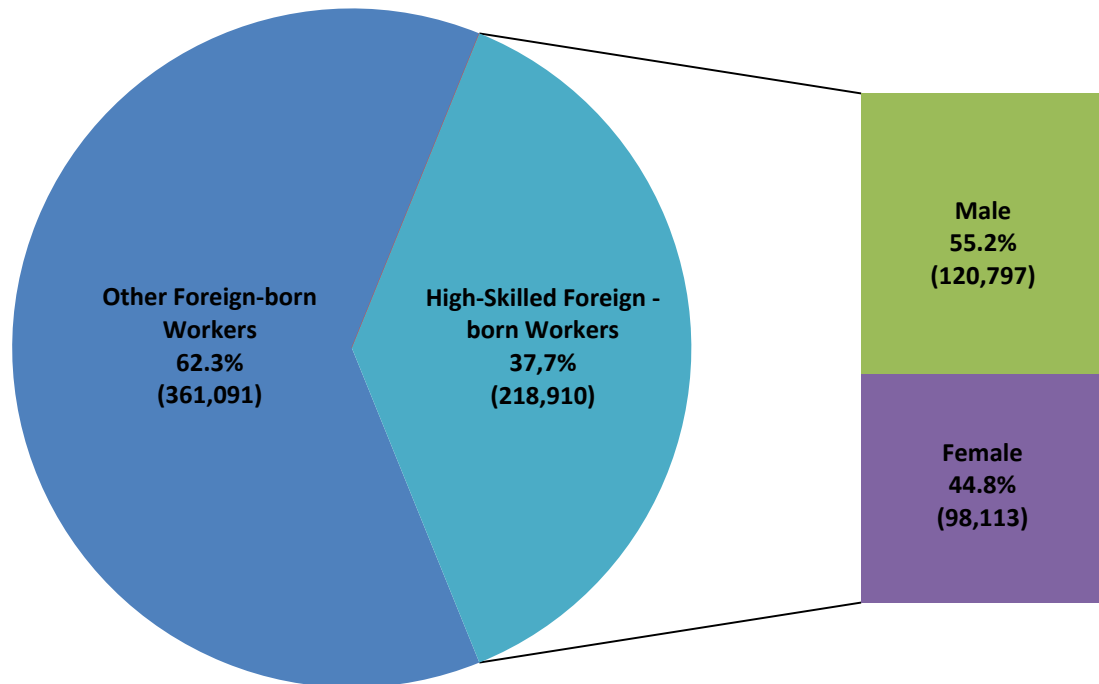


**Share of High-Skilled Workers by Nativity - 2011**

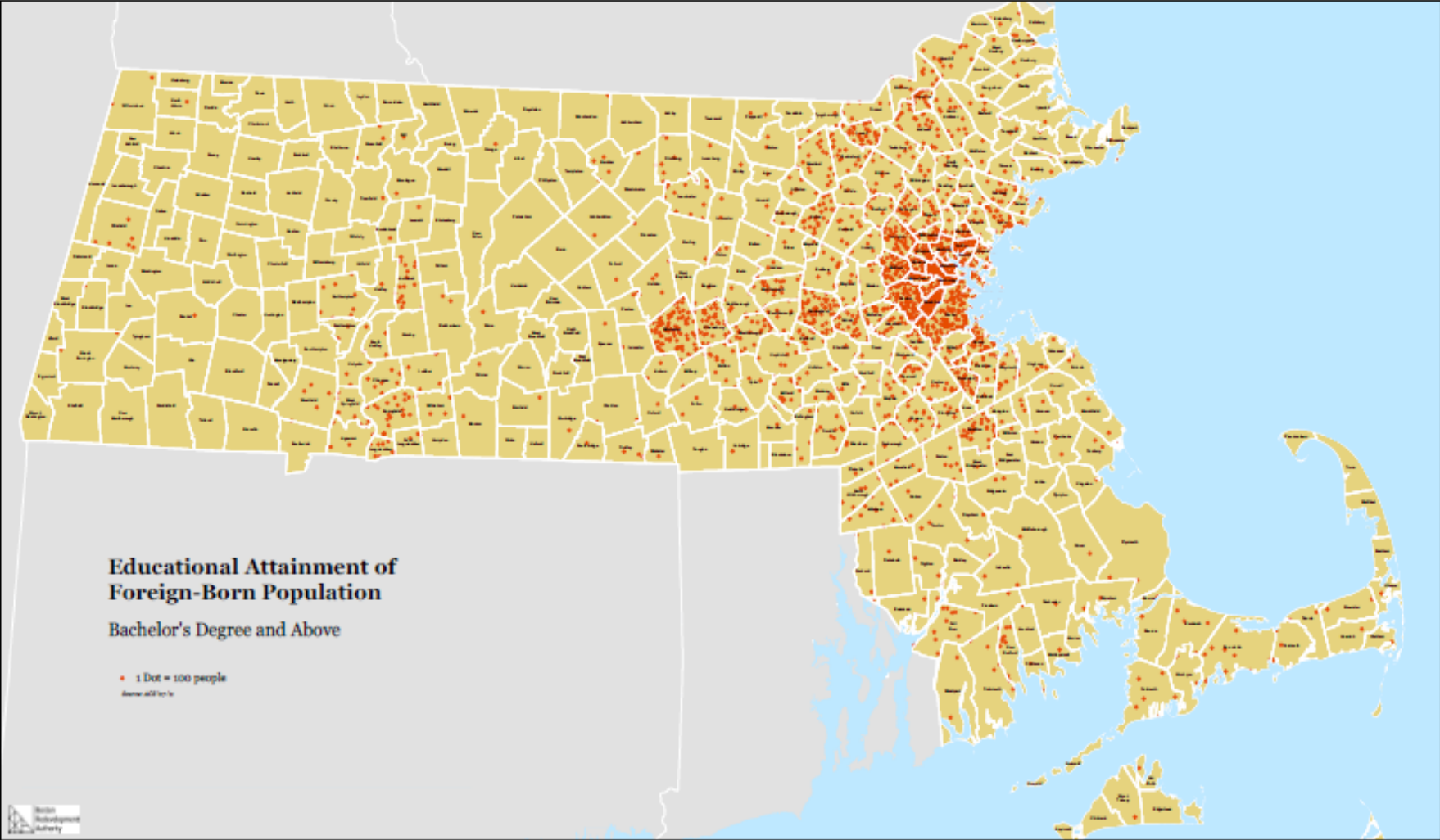


**Almost thirty eight percent (37.7%) of all foreign-born workers in the Massachusetts workforce are high-skilled workers, the majority of which were males (55.2%)**

**Share of High-skilled Foreign-born Workers in the Foreign-born Labor Force - 2011**



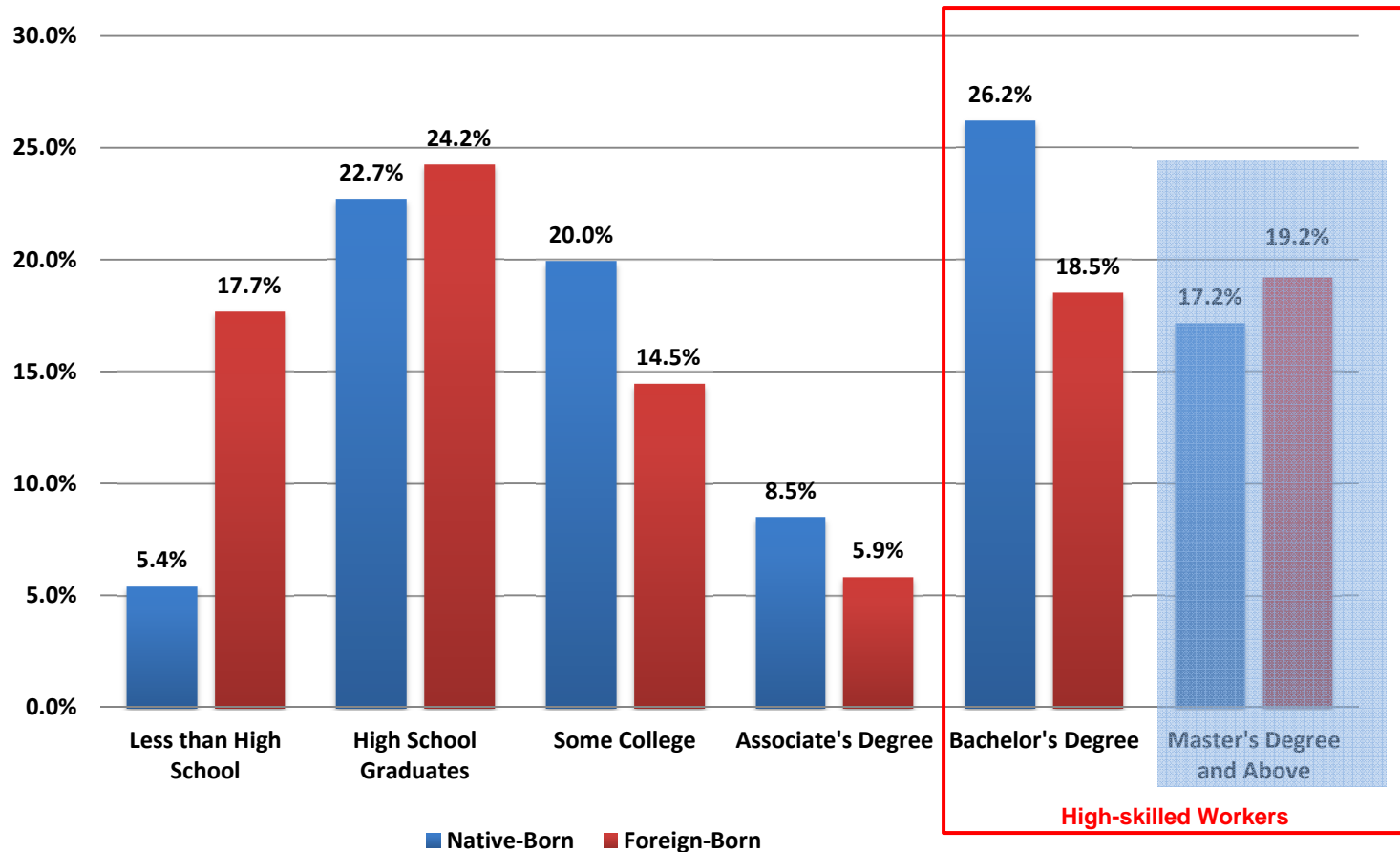
**The majority of high-skilled foreign-born workers in Massachusetts are concentrated in three counties, Suffolk (20.2%), Norfolk (18.7%) and Middlesex (51.2%)**





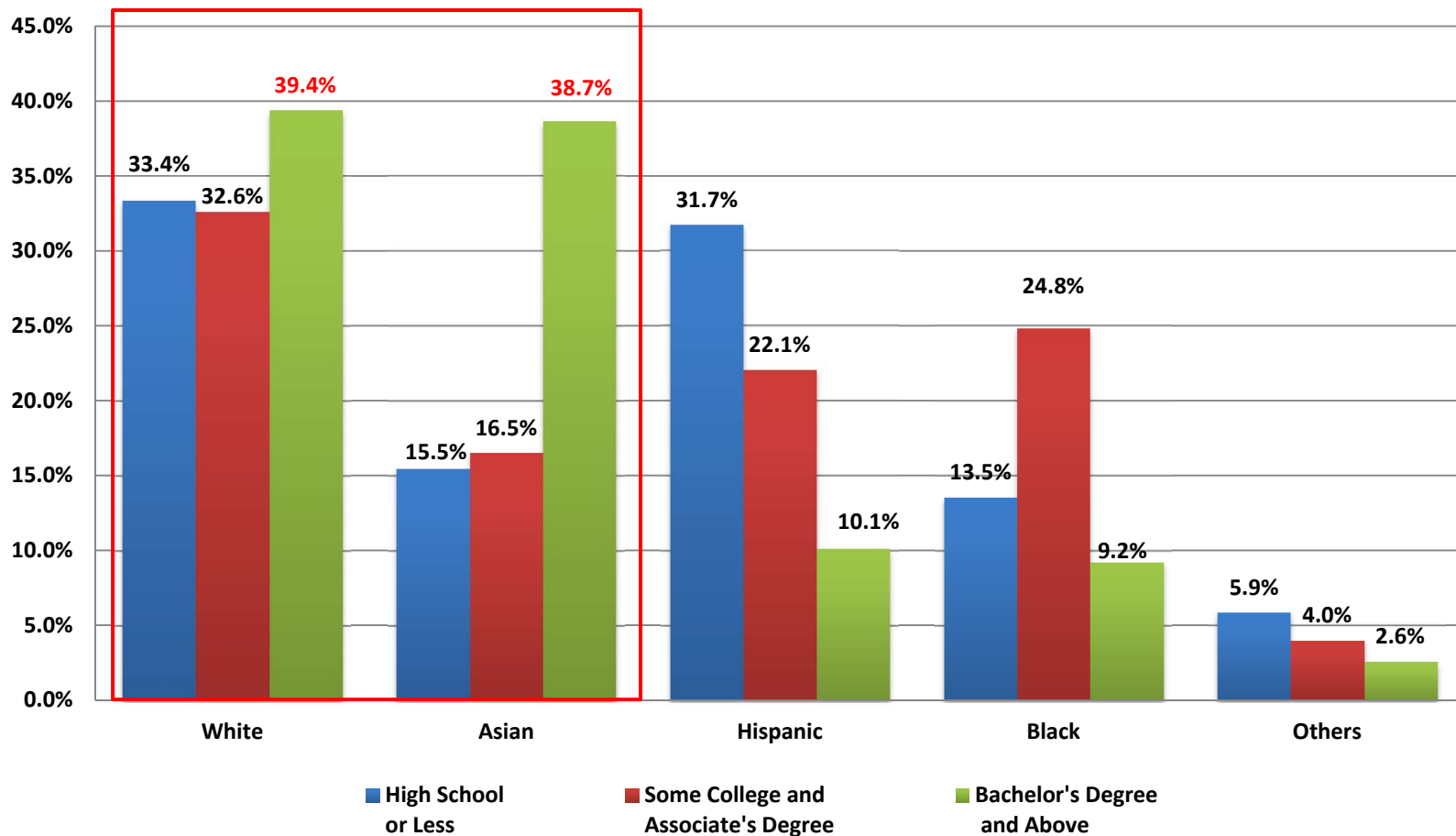
**Of all high-skilled foreign-born workers, 19.2% have at least a Master's degree, a higher proportion than that of their U.S.-born counterparts (17.2%)**

**Educational Attainment by Nativity - 2011**



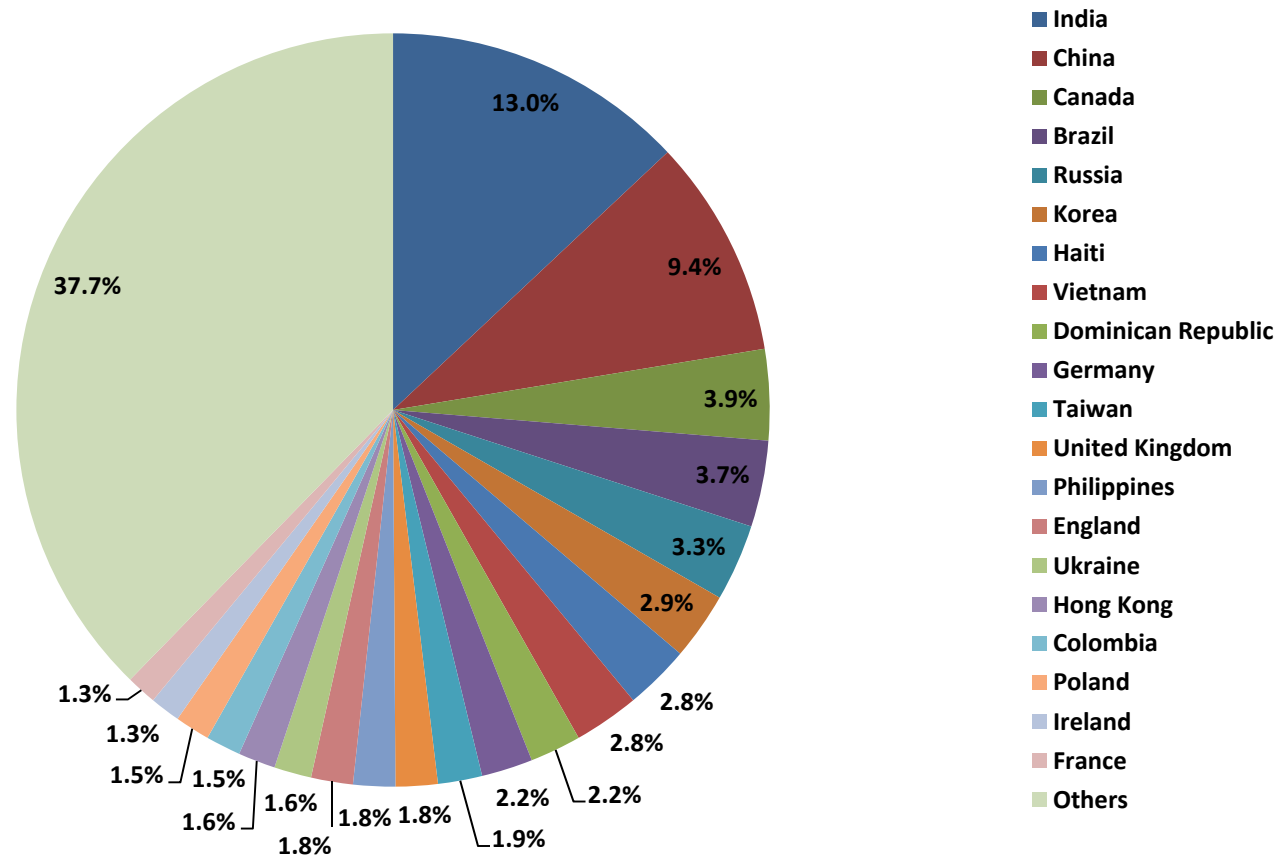
**Nearly eighty percent (78.1%) of all employed high-skilled foreign-born workers are White or Asian even though they make up only 29.5% of the foreign-born workforce**

**Educational Attainment of Foreign-born Workers by Race and Ethnicity - 2011**



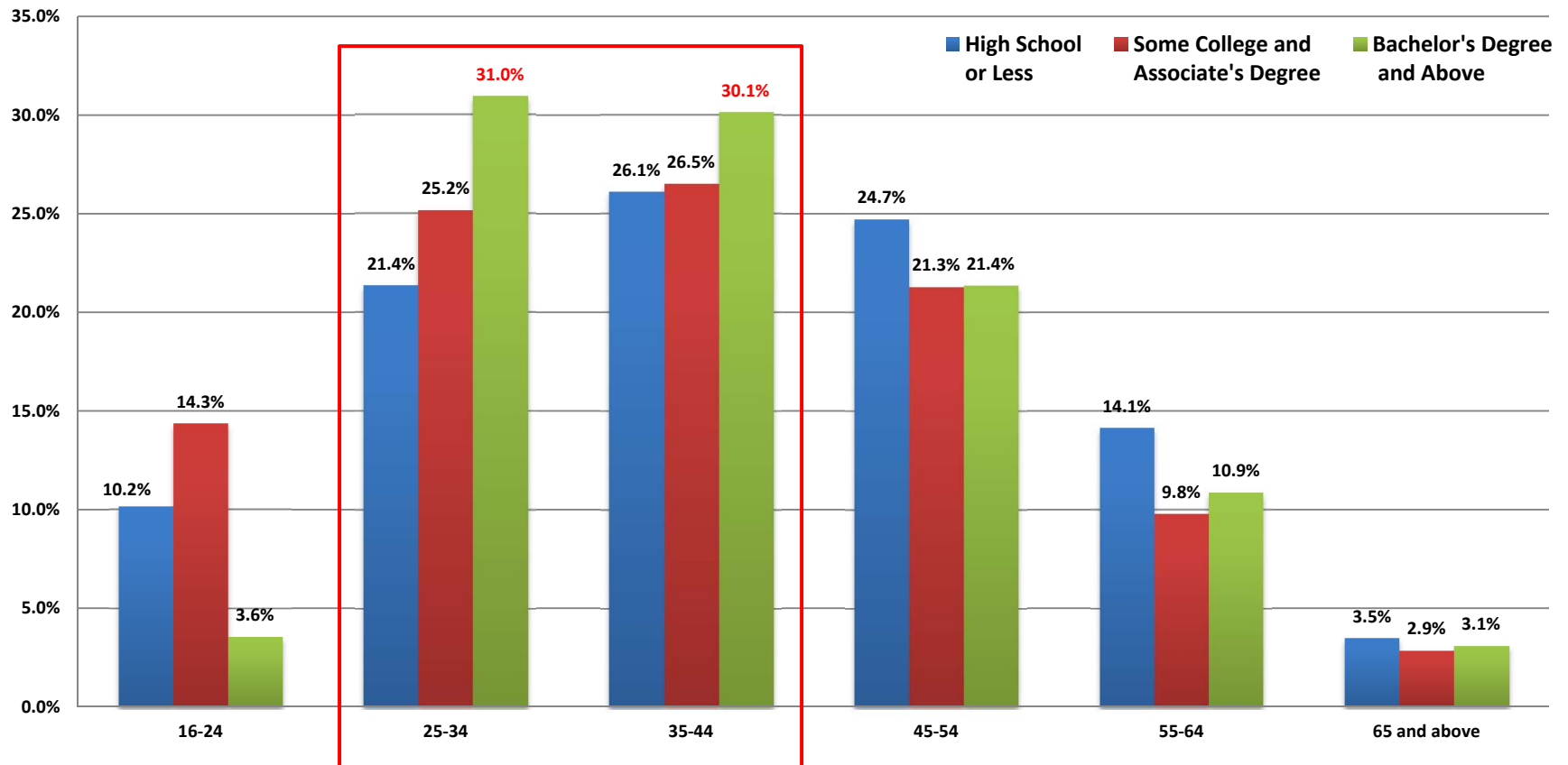
**Ten sending countries are responsible for almost forty four per cent (43.4%) of all high-skilled workers with almost a quarter of them coming from India and China**

**Place of Birth of High-skilled Foreign-Born Workers - 2011**



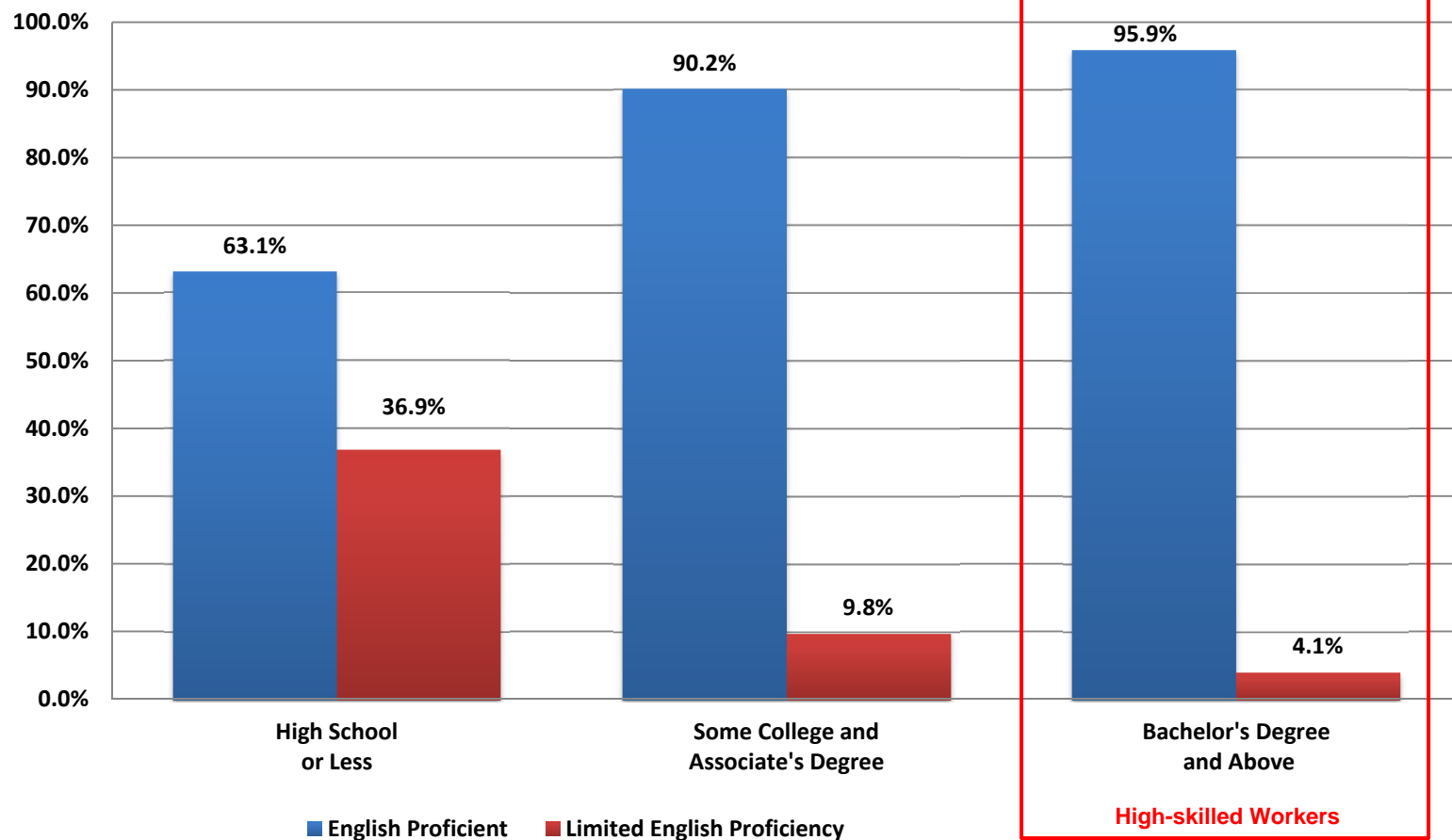
# More than sixty percent (61.1%) of high-skilled foreign-born workers are between the ages of 25 and 44

Age Distribution of Foreign-born Workers by Educational Level - 2011



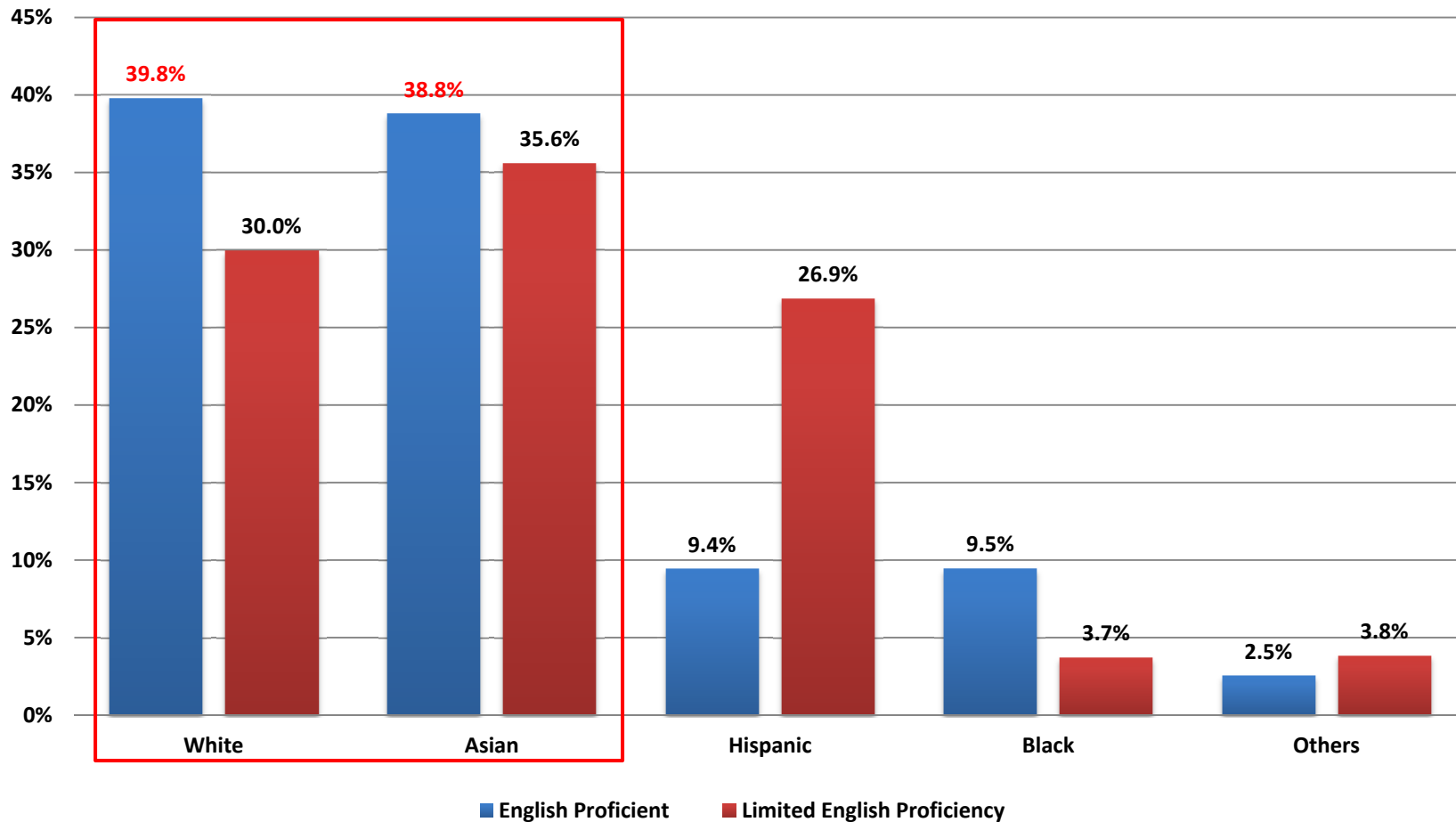
# Language proficiency tends to be positively related to education levels with almost 96% English proficiency (EP) among high-skilled foreign-born workers

English Proficiency of Foreign-born Workers by Educational Level - 2011



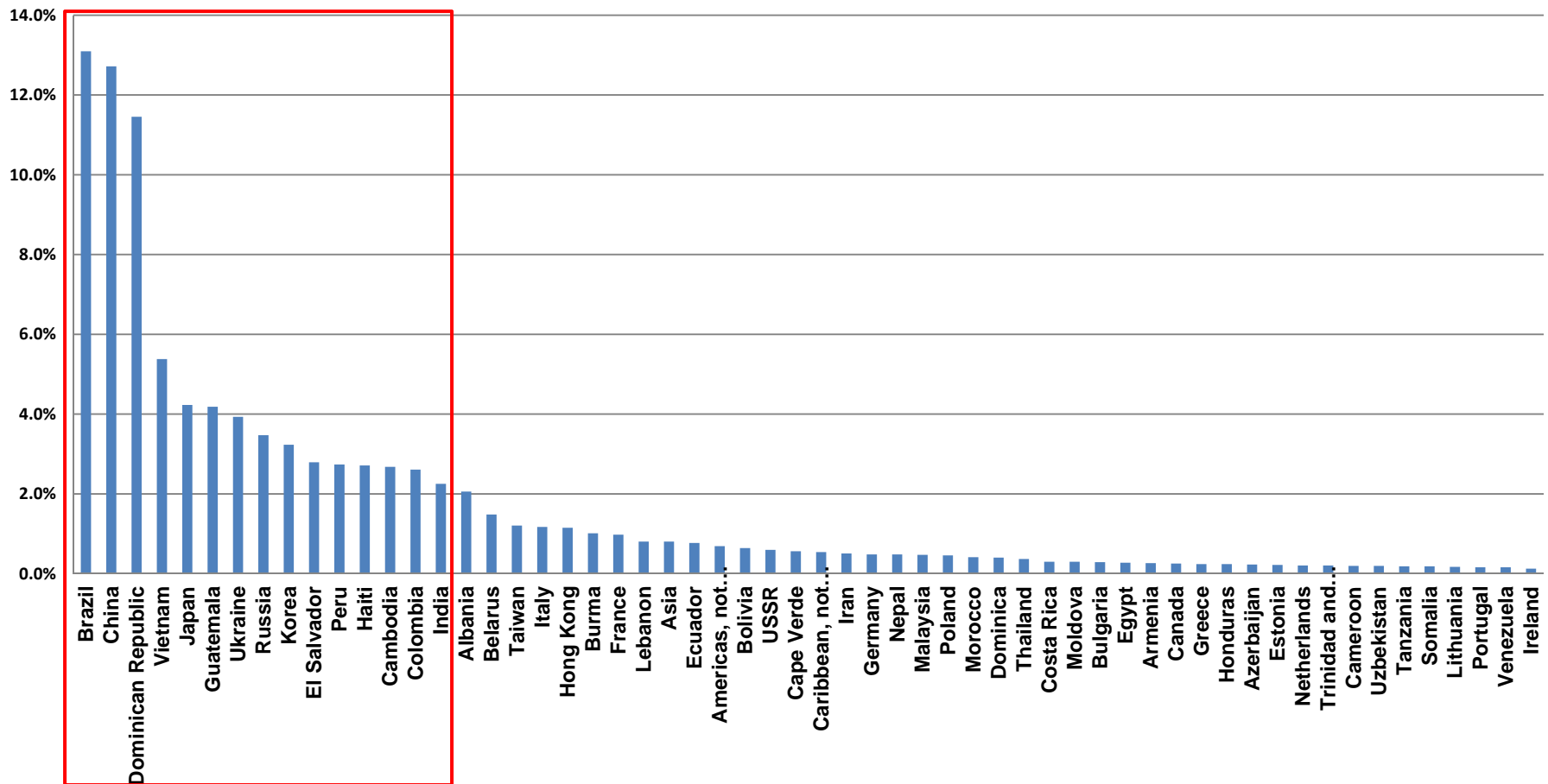
## Language ability also varies by race and ethnicity with Whites and Asians accounting for almost seventy nine percent (78.6%) of all EP workers

Language Ability by Race and Ethnicity of high-skilled Foreign-born Workers - 2011



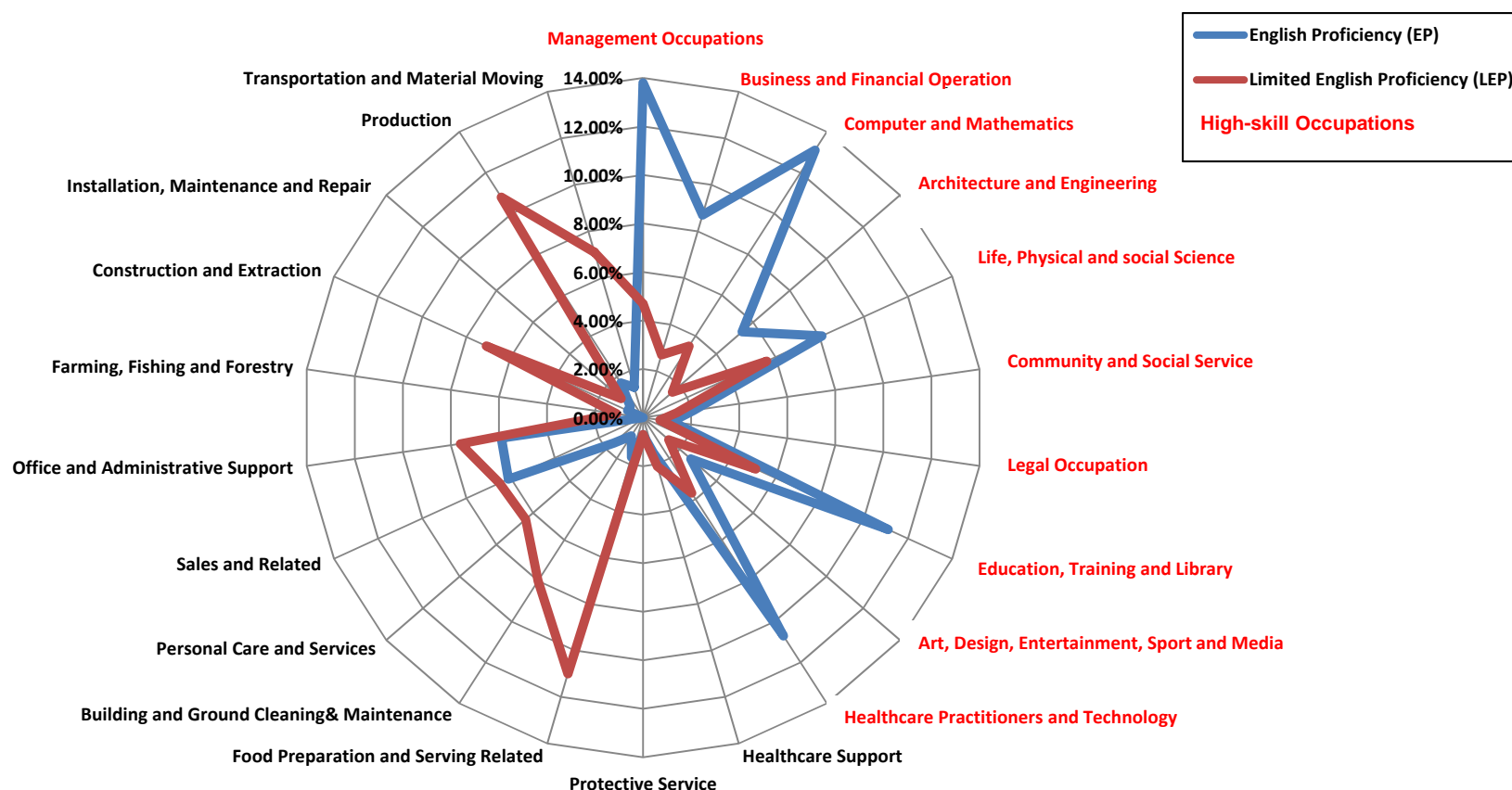
# There are 8,960 high-skilled, LEP, foreign-born workers with the majority of them coming from just a few countries

Limited English Proficiency (LEP) by Place of Birth of High-Skilled Foreign-born Workers - 2011



**Ninety six percent (96%) of all high-skilled foreign-born workers are English Proficient (EP) with 77% concentrated in high-skill occupations. Comparately, seventy percent (70%) of those with Limited English proficiency (LEP) are concentrated in low-skill occupations**

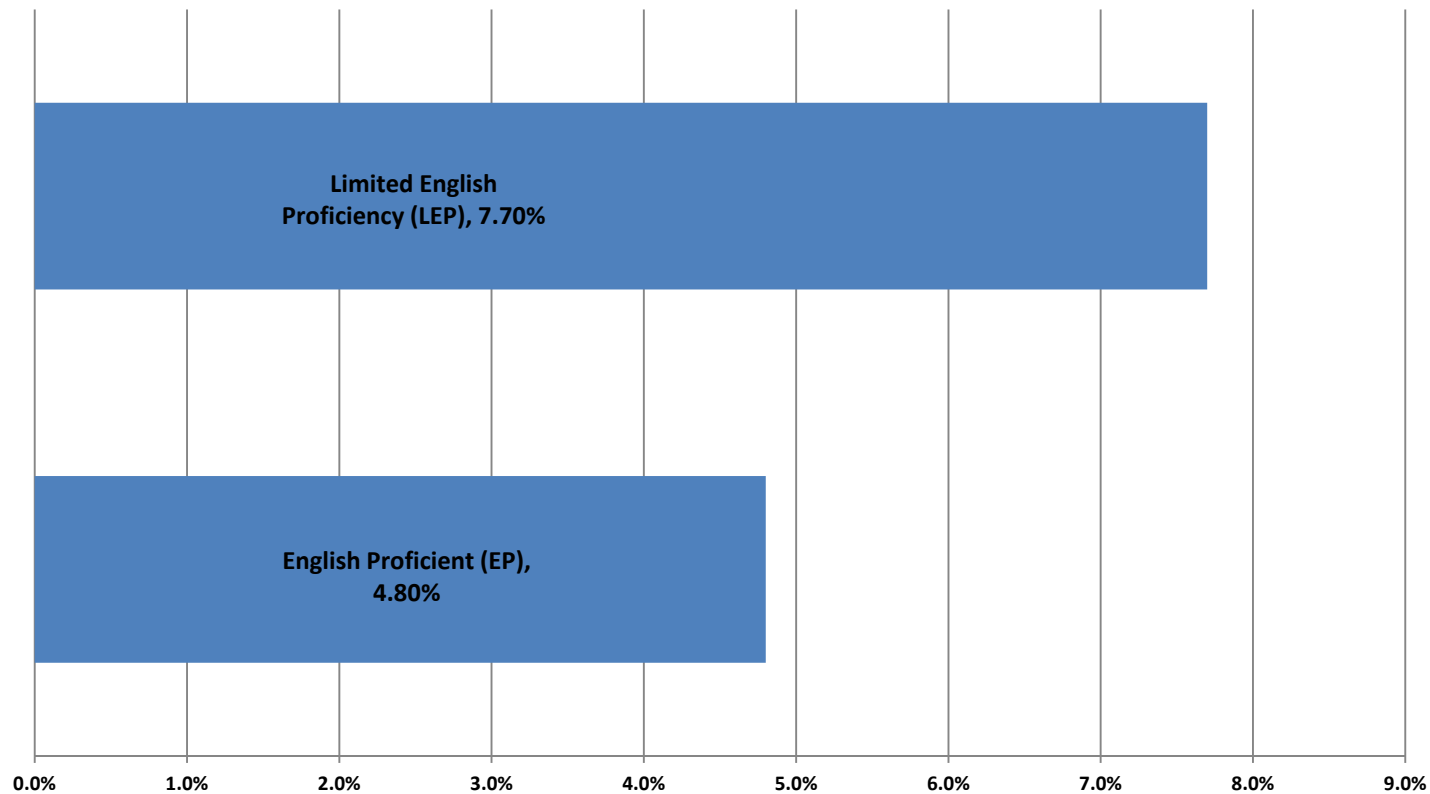
**High-skilled Foreign-born Workers by Language Ability in each Occupation - 2011**





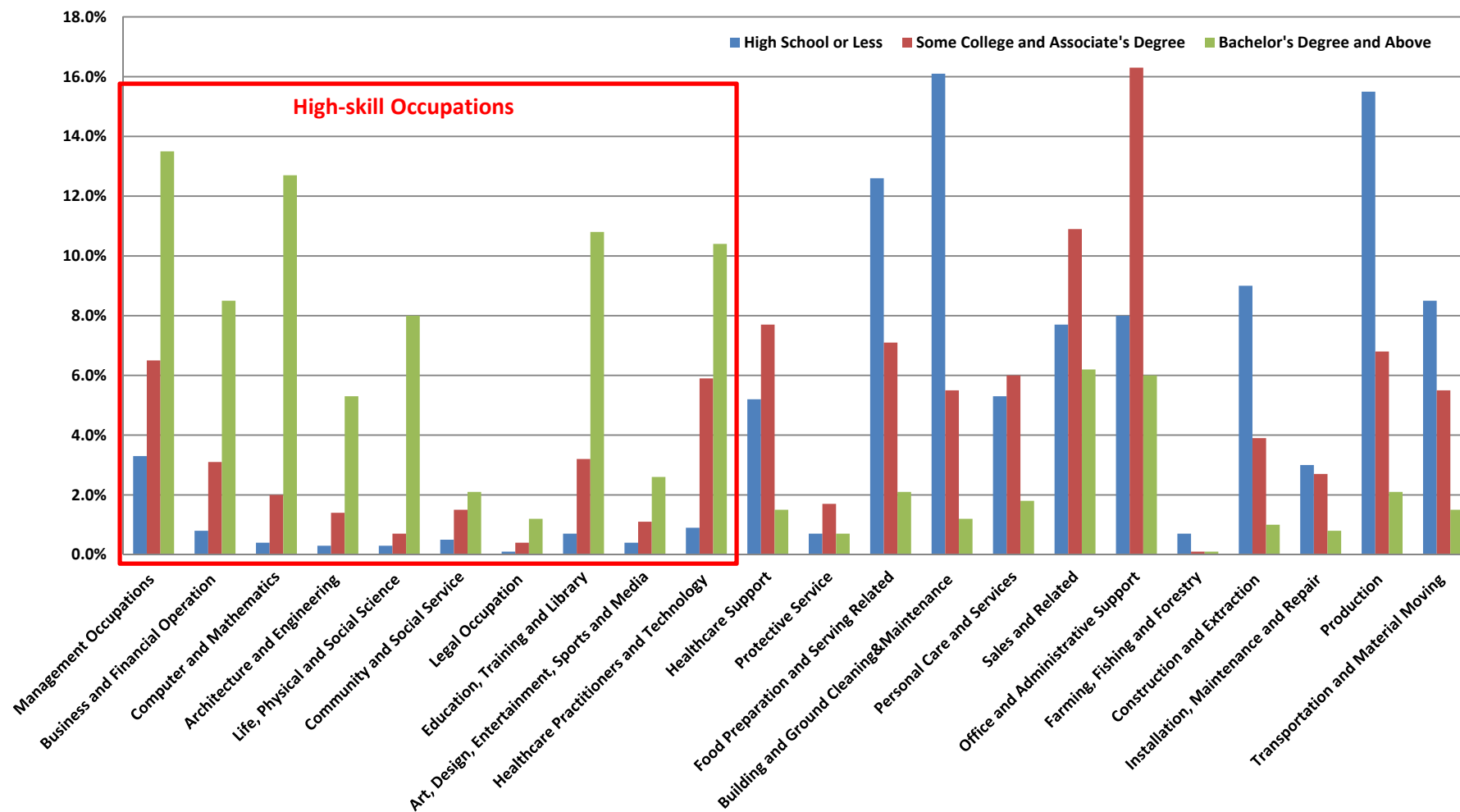
**Language ability also impacts unemployment rates. English proficient (EP) high-skilled foreign-born workers have lower rates than those with limited English skills (LEP)**

**Unemployment Rate for High-skilled Immigrants by Language Ability**



# Seventy five percent (75%) of all high-skilled foreign-born workers work in high-skill occupations with the remainder concentrated in mid-to-low skill occupations

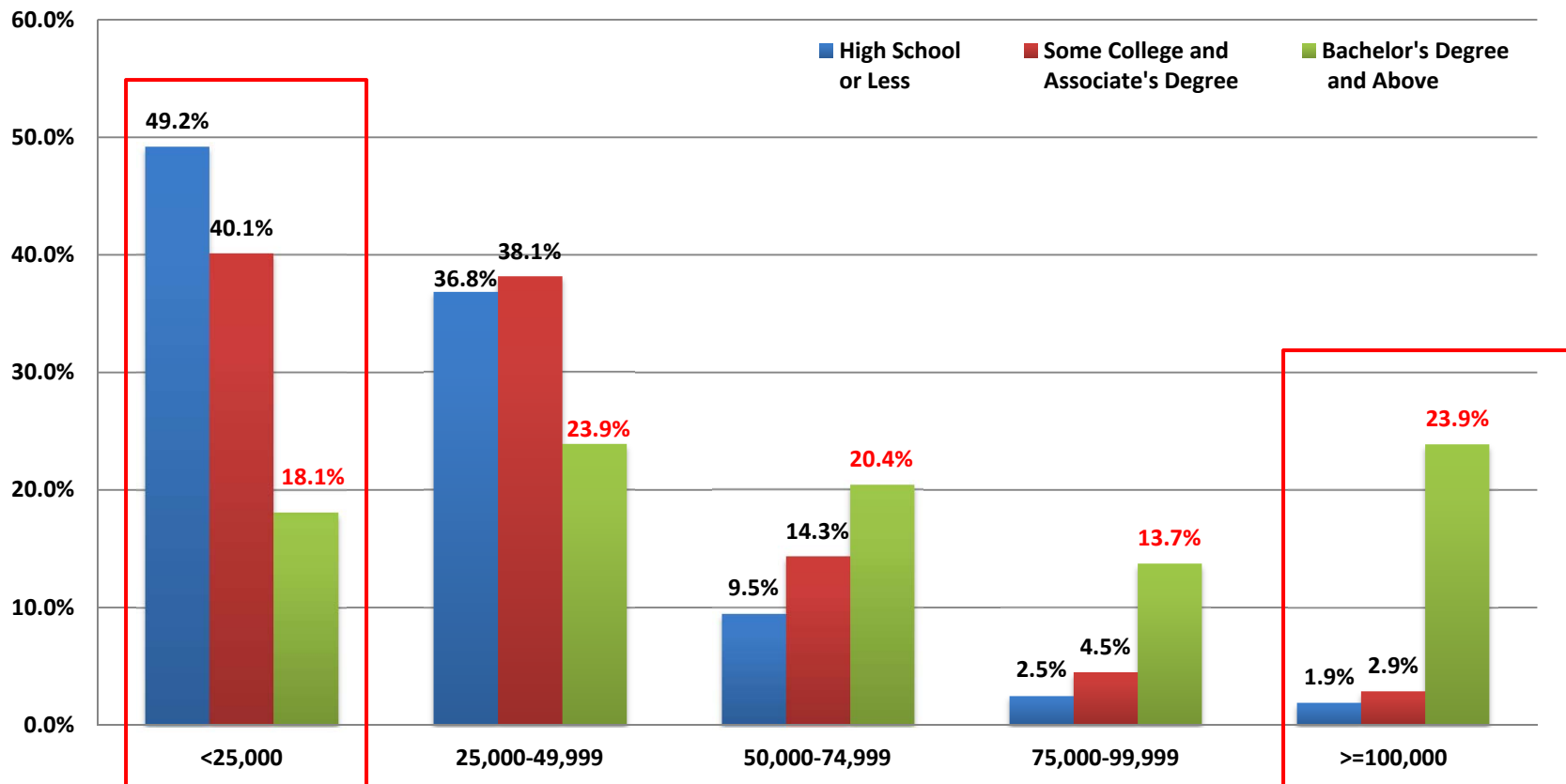
Occupation Distribution by Educational Attainment - 2011



Source: 2007-2011 ACS, Public Use Microdata Sample(PUMS), BRA Research Division Analysis

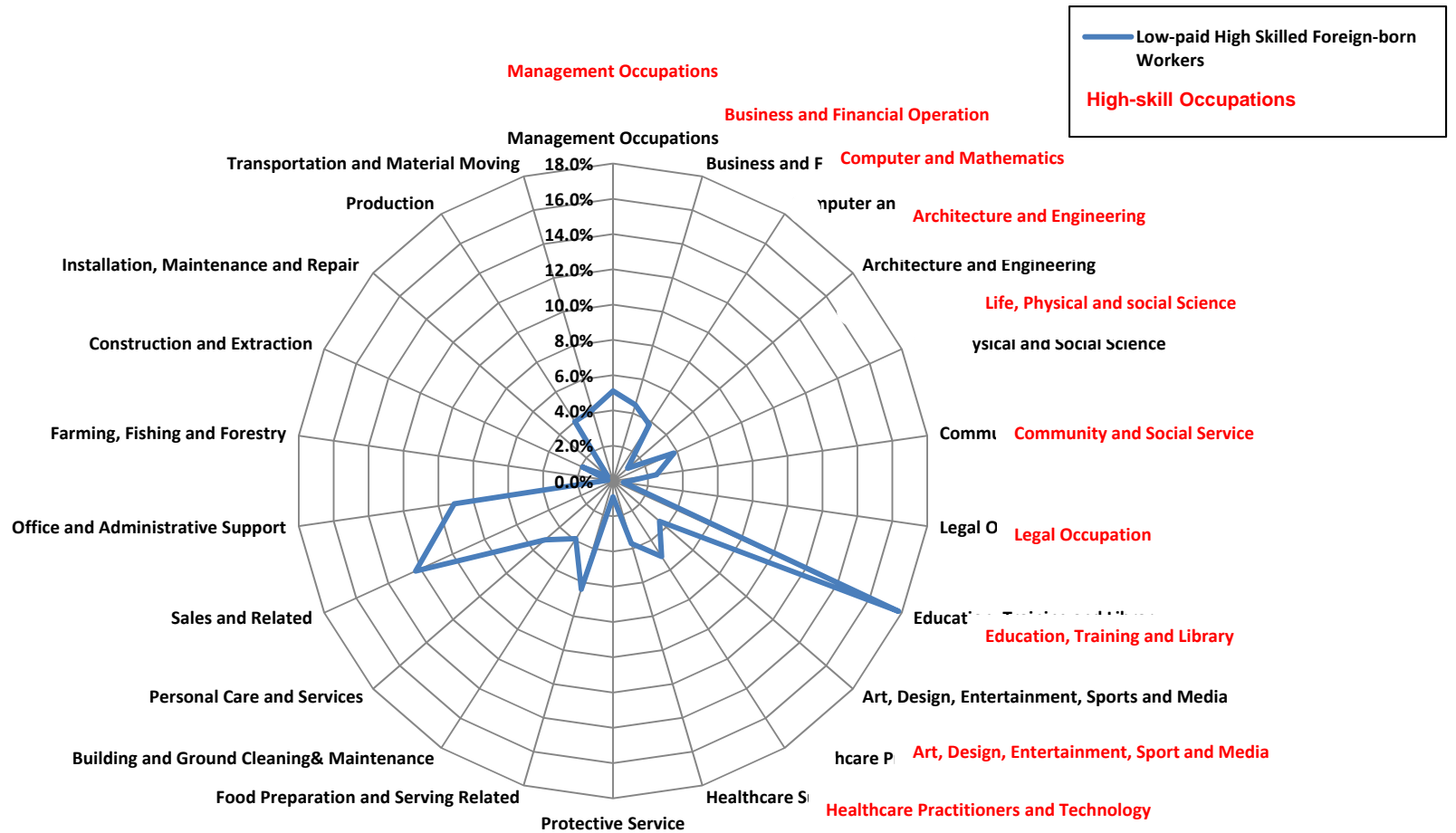
**While 24% of all high-skilled foreign-born workers earn over \$100,000, forty two percent (42%) of them earn less than \$50,000, and 18% earn less than \$25,000**

**Income Distribution of Foreign-born Workers by Educational Level - 2011**



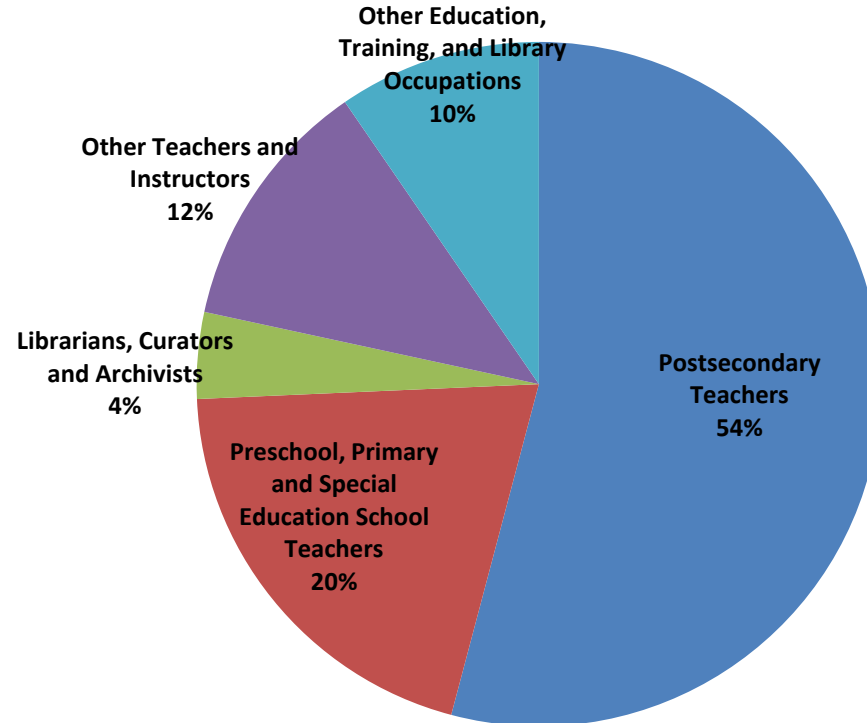
# Almost forty eight percent (47.8%) of all low-paid high-skilled foreign-born workers work in high-skilled occupations

## Low-paid High-skilled Foreign-born Workers by Occupation - 2011



**Of the 39,615 low-paid high-skilled foreign-born workers, 18% work in education, training, and library occupations with 54.% of them employed as postsecondary teachers, the majority enrolled in graduate school**

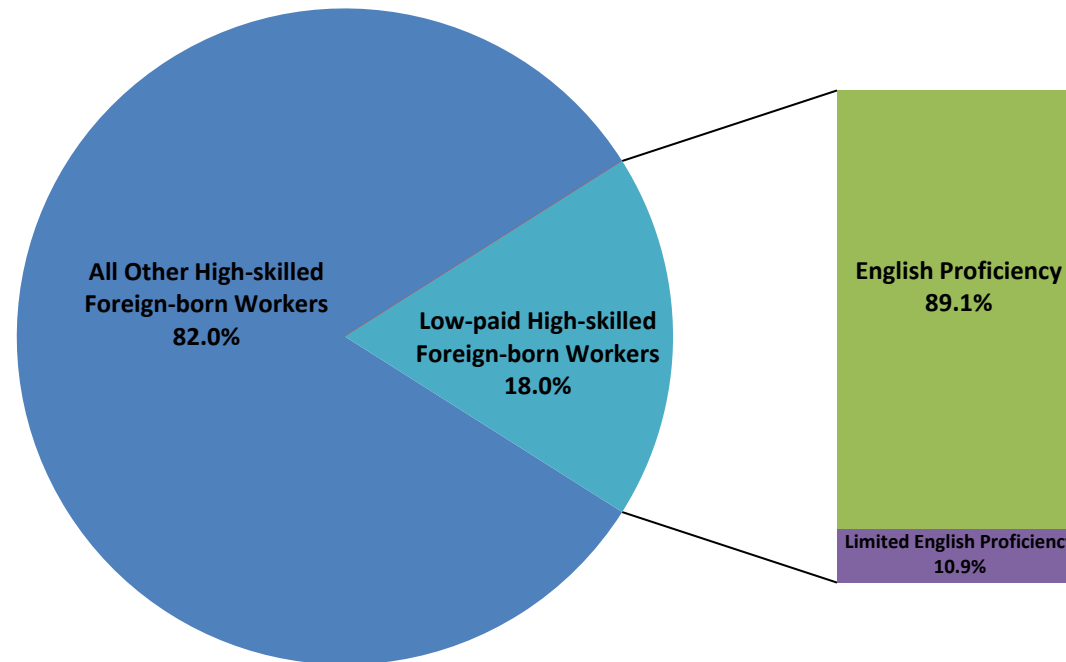
**Foreign-born, High-skilled, Low Wage Education Occupation**



\* Postsecondary Teachers include Graduate Assistants  
Source: 2007-2011 ACS, Public Use Microdata Sample(PUMS), BRA Research Division Analysis

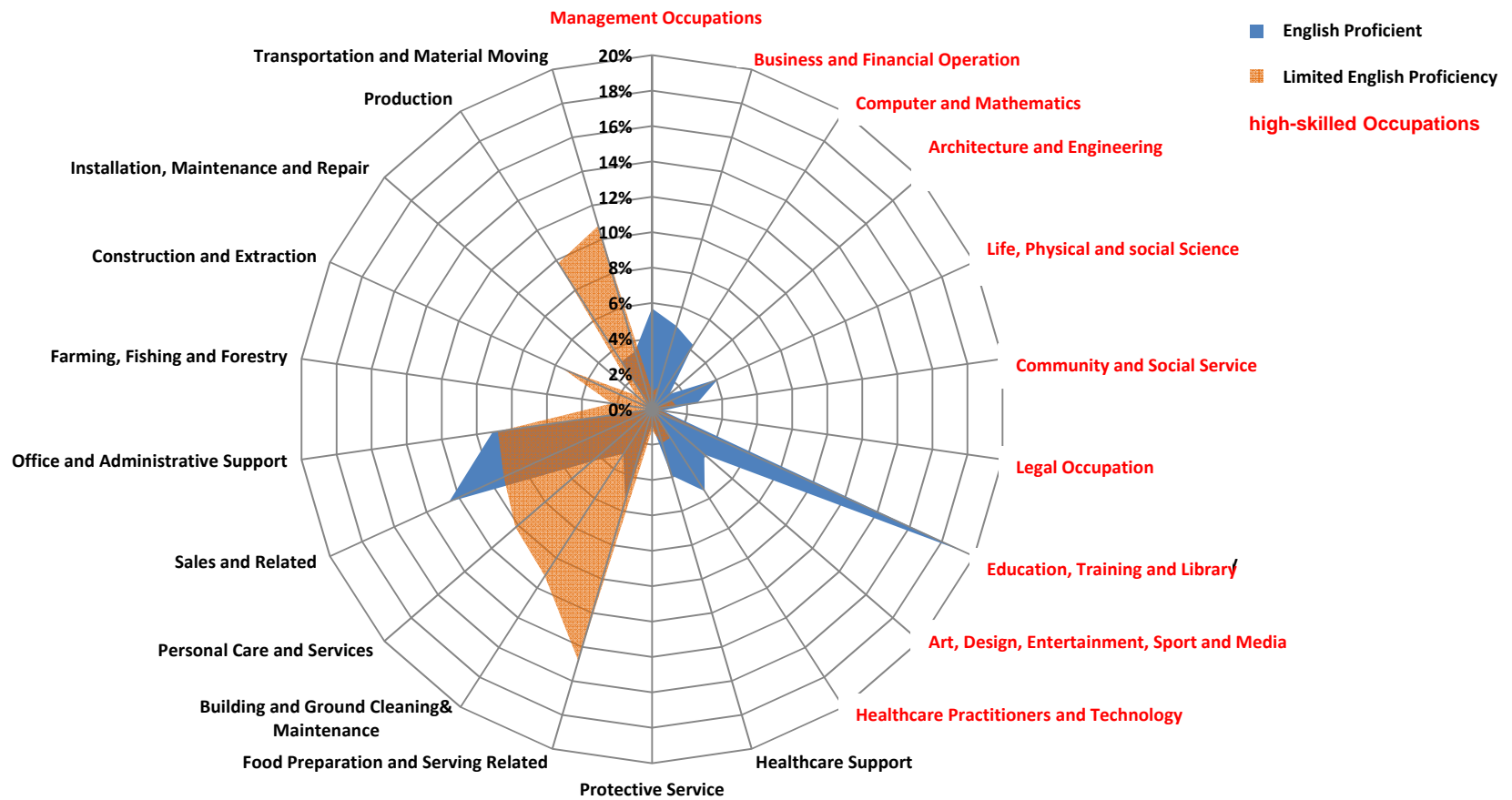
**Eight nine percent of all low-paid, high-skilled foreign-born workers are proficient in English (EP) showing that neither education nor language are reasons for low income**

**Low-paid High-skilled Foreign-born Workers by Language Ability - 2011**

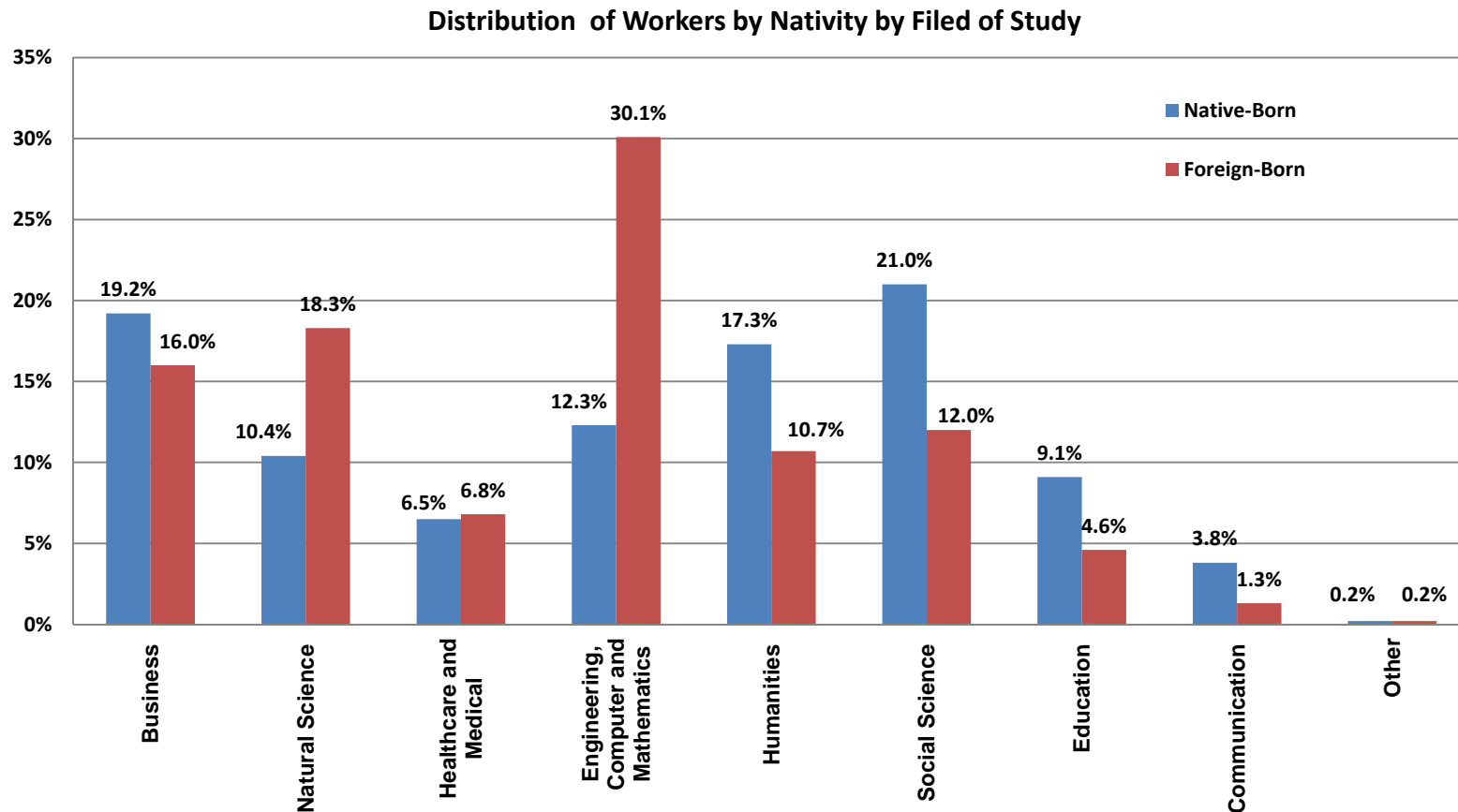


**While the majority of low-paid, high-skilled LEP foreign-born workers (87.3%) are concentrated in low skill occupations, low-paid, high-skilled EP workers are mostly concentrated in high-skilled occupations (52.3%)**

**Low-Paid High-skilled Foreign-born Workers in each Occupation by Language Ability - 2011**



**While the majority (57.9%) of high-skilled native-born workers earned their degrees in Social Sciences (21%), Business (19.2%), Humanities (17.3%) and Natural Science (10.4%), almost sixty five percent (64.4%) of their foreign-born counterparts graduated in Engineering, Computer and Mathematics (30.1%), Natural Science (18.3%), and Business (16%)**





With the exception of Business and Financial Operations (0.91), Community and Social Services (0.99) and Legal Occupations (0.78), in all high-skill occupations, foreign-born workers earn the same or more than their native-born counterparts. They also earn more than high-skilled native workers in low-to-mid skill industries such as Food Preparation and Serving Related (1.12) and Healthcare Support (1.07)

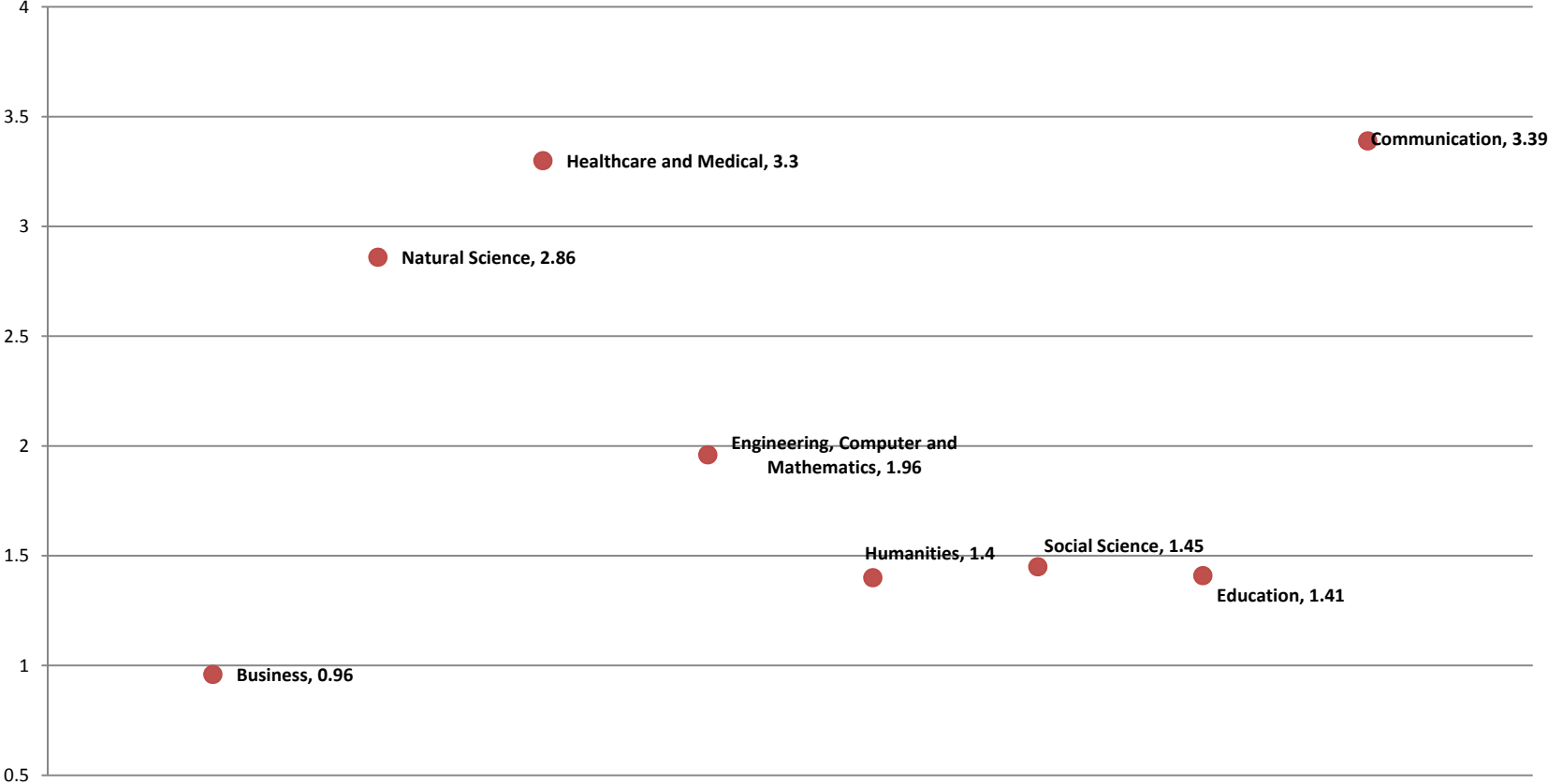
Average Wages of High-skilled FB Workers to Average Wages of High-skilled NB Workers



Source: 2007-2011 ACS, Public Use Microdata Sample(PUMS), BRA Research Division Analysis

With the exception of Business (0.96), high-skilled foreign-born workers earn more than their native-born counterparts in each field of study with multiples of three in Communication (3.39) and Healthcare and Medical (3.3)

Average Wages of High-skilled FB Workers to Average Wages of High-skilled NB Workers

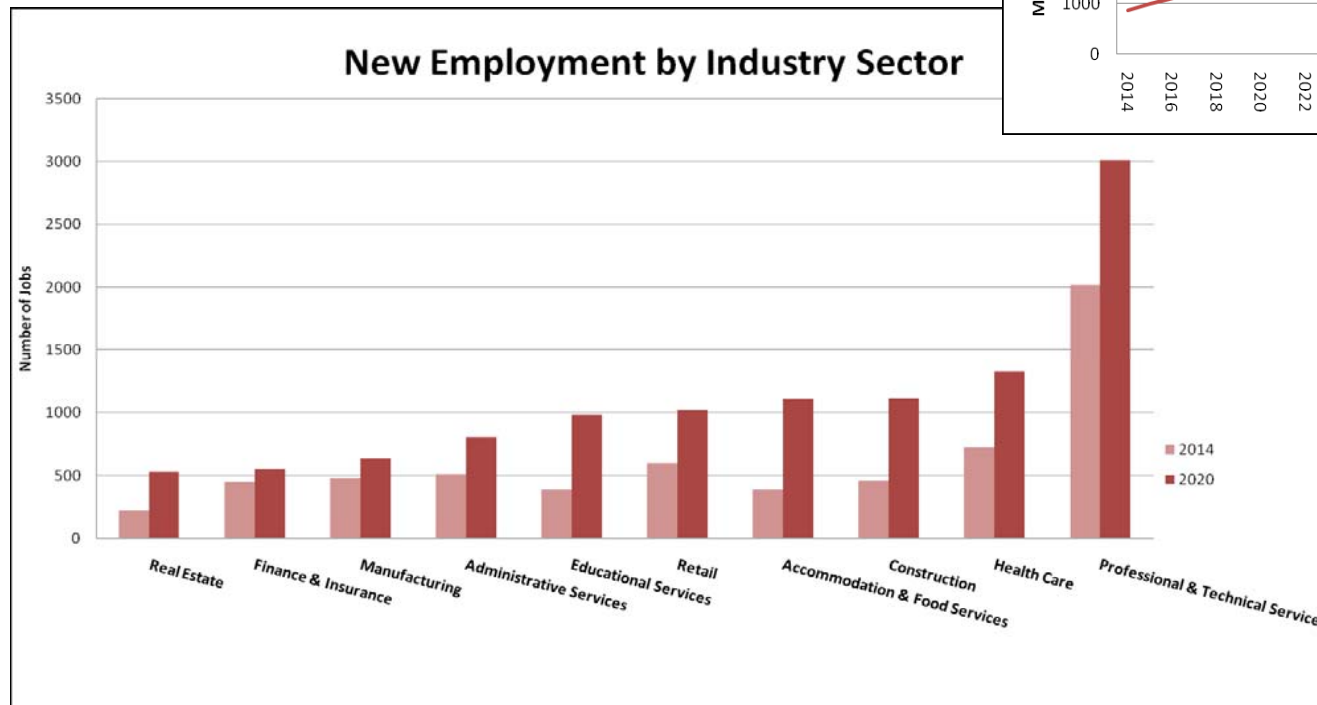
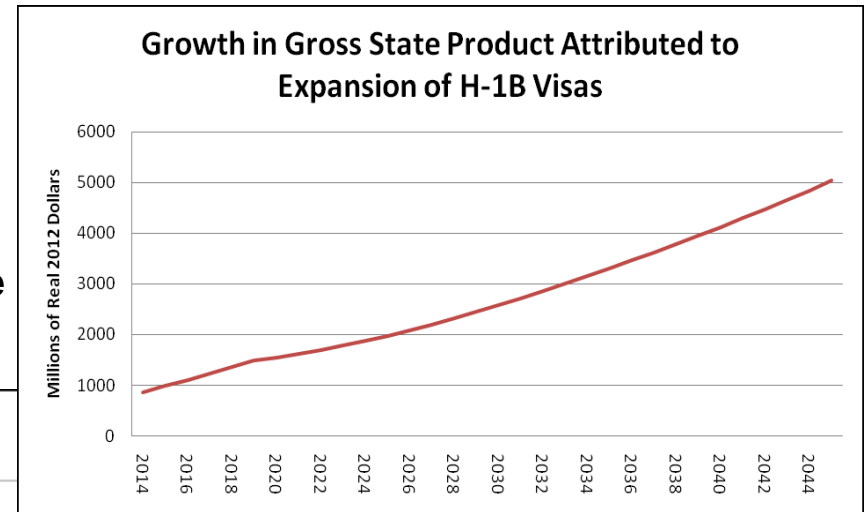


**High-skilled foreign-born workers make a significant contribution to the Massachusetts economy as workers, consumers, and tax payers. Their annual contribution\* is as follows:**

- **\$53.4 billion to the Gross State Product**
- **\$21.9 billion in spending**
- **\$5.6 billion in state and federal taxes**
- **236,586 direct and indirect jobs**

The Regional Economic Models Inc. (REMI) estimate that an expansion of the H-1B visa program would add 2,300 new high-skilled workers in the state of Massachusetts resulting in:

- More than 8,000 new jobs in 2014 and more than 14,100 new jobs by 2020
- More than \$853 million added to Gross State Product in 2014 and \$5 billion by 2045
- More than \$555 million added to personal income in 2014 and more than \$4.7 billion by 2045



## Occupation Distribution by Educational Attainment - Employed Foreign-Born

	High School or Less		Some College and Associate's Degree		Bachelor's Degree and Above	
	Estimate	%	Estimate	%	Estimate	%
Management Occupations	7,951	3.3%	7,675	6.5%	<b>29,455</b>	<b>13.5%</b>
Business and Financial Operation	1,876	0.8%	3,695	3.1%	18,597	8.5%
Computer and Mathematics	1,046	0.4%	2,384	2.0%	<b>27,863</b>	<b>12.7%</b>
Architecture and Engineering	777	0.3%	1,687	1.4%	11,575	5.3%
Life, Physical and Social Science	692	0.3%	848	0.7%	17,553	8.0%
Community and Social Service	1,125	0.5%	1,800	1.5%	4,631	2.1%
Legal Occupation	166	0.1%	423	0.4%	2,681	1.2%
Education, Training and Library	1,634	0.7%	3,756	3.2%	<b>23,730</b>	<b>10.8%</b>
Art, Design, Entertainment, Sports and Media	892	0.4%	1,289	1.1%	5,605	2.6%
Healthcare Practitioners and Technology	2,134	0.9%	7,004	5.9%	22,804	10.4%
Healthcare Support	12,597	5.2%	<b>9,110</b>	<b>7.7%</b>	3,333	1.5%
Protective Service	1,642	0.7%	1,968	1.7%	1,500	0.7%
Food Preparation and Serving Related	<b>30,616</b>	<b>12.6%</b>	8,346	7.1%	4,591	2.1%
Building and Ground Cleaning & Maintenance	<b>39,113</b>	<b>16.1%</b>	6,445	5.5%	2,541	1.2%
Personal Care and Services	12,847	5.3%	7,061	6.0%	4,003	1.8%
Sales and Related	18,842	7.7%	<b>12,858</b>	<b>10.9%</b>	13,480	6.2%
Office and Administrative Support	19,818	8.1%	<b>19,255</b>	<b>16.3%</b>	13,170	6.0%
Farming, Fishing and Forestry	1,696	0.7%	63	0.1%	151	0.1%
Construction and Extraction	22,214	9.1%	4,538	3.9%	2,184	1.0%
Installation, Maintenance and Repair	7,297	3.0%	3,151	2.7%	1,645	0.8%
Production	<b>37,636</b>	<b>15.5%</b>	8,070	6.8%	4,516	2.1%
Transportation and Material Moving	20,615	8.5%	6,439	5.5%	3,302	1.5%

## Place of Birth by Educational Attainment - Employed Foreign-Born

### High School or Less

Region	Estimate	%
Brazil	34,009	14.0%
Dominican Republic	21,484	8.8%
Portugal	17,590	7.2%
El Salvador	17,485	7.2%
Guatemala	12,515	5.1%
Haiti	11,247	4.6%
China	10,191	4.2%
Vietnam	9,908	4.1%
Cape Verde	8,072	3.3%
Mexico	6,683	2.7%
Colombia	6,493	2.7%
Azores Islands	6,015	2.5%
Cambodia	5,586	2.3%
Jamaica	4,313	1.8%
Italy	4,113	1.7%
Canada	3,769	1.5%
Honduras	3,751	1.5%
Ireland	3,200	1.3%
Poland	2,915	1.2%
Greece	2,529	1.0%

### Some College & Associate's Degree

Region	Estimate	%
Dominican Republic	11,249	9.5%
Haiti	10,514	8.9%
Brazil	8,406	7.1%
Vietnam	4,335	3.7%
China	4,010	3.4%
Portugal	3,905	3.3%
Canada	3,329	2.8%
Jamaica	3,311	2.8%
Colombia	2,745	2.3%
Cape Verde	2,646	2.2%
Ireland	2,561	2.2%
Guatemala	2,274	1.9%
India	2,052	1.7%
Poland	1,905	1.6%
Ghana	1,750	1.5%
Italy	1,667	1.4%
El Salvador	1,666	1.4%
England	1,609	1.4%
Philippines	1,602	1.4%
Cambodia	1,506	1.3%

### Bachelor's Degree and Above

Region	Estimate	%
India	28,352	13.0%
China	20,567	9.4%
Canada	8,470	3.9%
Brazil	8,081	3.7%
Russia	7,148	3.3%
Korea	6,267	2.9%
Haiti	6,126	2.8%
Vietnam	6,028	2.8%
Dominican Republic	4,803	2.2%
Germany	4,719	2.2%
Taiwan	4,108	1.9%
United Kingdom	3,977	1.8%
Philippines	3,931	1.8%
England	3,881	1.8%
Ukraine	3,554	1.6%
Hong Kong	3,451	1.6%
Colombia	3,264	1.5%
Poland	3,260	1.5%
Ireland	2,889	1.3%
France	2,817	1.3%

# Low-paid high-skilled Foreign-Born Workers by Language Ability by Occupation

Occupation	Low-Paid high-skilled Workers Foreign-Born						All high-skilled Foreign-Born		All Foreign- Born		% of Workers with a College Degree in Occupation
	Total		EP		LEP		Total		Total		
	N	%	N	%	N	%	N	%	N	%	
Management Occupations	2,040	5.1%	1,999	5.7%	41	1.0%	29,455	13.5%	45,081	7.8%	65.7%
Business and Financial Operation	1,792	4.5%	1,735	4.9%	57	1.3%	18,597	8.5%	24,168	4.2%	74.3%
Computer and Mathematics	1,503	3.8%	1,503	4.3%	0	0.0%	27,863	12.7%	31,293	5.4%	75.8%
Architecture and Engineering	445	1.1%	445	1.3%	0	0.0%	11,575	5.3%	14,039	2.4%	71.3%
Life, Physical and Social Science	1,503	3.8%	1,451	4.1%	52	1.2%	17,553	8.0%	19,093	3.3%	88.7%
Community and Social Service	975	2.5%	913	2.6%	62	1.4%	4,631	2.1%	7,556	1.3%	73.1%
Legal Occupation	222	0.6%	203	0.6%	19	0.4%	2,681	1.2%	3,270	0.6%	86.3%
Education, Training and Library	7,060	17.8%	6,834	19.4%	226	5.2%	23,730	10.8%	29,120	5.0%	80.1%
Art, Design, Entertainment, Sports and Media	1,404	3.5%	1,393	3.9%	11	0.3%	5,605	2.6%	7,786	1.3%	68.5%
Healthcare Practitioners and Technology	2,024	5.1%	1,944	5.5%	80	1.9%	22,804	10.4%	31,942	5.5%	63.6%
Healthcare Support	1,469	3.7%	1,381	3.9%	88	2.0%	3,333	1.5%	25,040	4.3%	12.3%
Protective Service	359	0.9%	306	0.9%	53	1.2%	1,500	0.7%	5,110	0.9%	35.0%
Food Preparation and Serving Related	2,530	6.4%	1,893	5.4%	637	14.8%	4,591	2.1%	43,553	7.5%	11.3%
Building and Ground Cleaning& Maintenance	1,530	3.9%	1,048	3.0%	482	11.2%	2,541	1.2%	48,099	8.3%	7.9%
Personal Care and Services	2,037	5.1%	1,596	4.5%	441	10.2%	4,003	1.8%	23,911	4.1%	19.3%
Sales and Related	4,855	12.3%	4,458	12.6%	397	9.2%	13,480	6.2%	45,180	7.8%	36.8%
Office and Administrative Support	3,590	9.1%	3,209	9.1%	381	8.8%	13,170	6.0%	52,243	9.0%	23.8%
Farming, Fishing and Forestry	123	0.3%	26	0.1%	97	2.3%	151	0.1%	1,910	0.3%	14.0%
Construction and Extraction	758	1.9%	515	1.5%	243	5.6%	2,184	1.0%	28,936	5.0%	9.6%
Installation, Maintenance and Repair	174	0.4%	121	0.3%	53	1.2%	1,645	0.8%	12,093	2.1%	9.5%
Production	1,550	3.9%	1,128	3.2%	422	9.8%	4,516	2.1%	50,222	8.7%	10.3%
Transportation and Material Moving	1,672	4.2%	1,206	3.4%	466	10.8%	3,302	1.5%	30,356	5.2%	9.6%
Total	39,615	100.0%	35,307	100.0%	4,308	100.0%	218,910	100.0%	580,001	100.0%	42.4%

## Place of Birth by Language Ability - Employed Foreign-Born

### English Proficient (EP)

Region	Estimate	%
India	28,156	13.4%
China	19,461	9.3%
Canada	8,448	4.0%
Brazil	6,942	3.3%
Russia	6,846	3.3%
Korea	5,986	2.9%
Haiti	5,890	2.8%
Vietnam	5,560	2.6%
Germany	4,677	2.2%
Taiwan	4,003	1.9%
United Kingdom	3,947	1.9%
Philippines	3,927	1.9%
England	3,881	1.8%
Dominican Republic	3,807	1.8%
Hong Kong	3,351	1.6%
Poland	3,220	1.5%
Ukraine	3,212	1.5%
Colombia	3,037	1.4%
Ireland	2,878	1.4%
France	2,732	1.3%

### Limited English Proficiency (LEP)

Region	Estimate	%
Brazil	1,139	12.7%
China	1,106	12.3%
Dominican Republic	996	11.1%
Vietnam	468	5.2%
Japan	368	4.1%
Guatemala	364	4.1%
Ukraine	342	3.8%
Russia	302	3.4%
Korea	281	3.1%
El Salvador	243	2.7%
Peru	238	2.7%
Haiti	236	2.6%
Cambodia	233	2.6%
Colombia	227	2.5%
India	196	2.2%
Albania	179	2.0%
Belarus	129	1.4%
Taiwan	105	1.2%
Italy	102	1.1%
Hong Kong	100	1.1%



# Unemployment Rate for High-skilled Immigrants by Language Ability and Occupation

Occupation	EP		LEP	
	Estimate	%	Estimate	%
Management Occupations	29,036	13.8%	419	4.7%
Business and Financial Operation	18,353	8.7%	244	2.7%
Computer and Mathematics	27,546	13.1%	317	3.5%
Architecture and Engineering	11,428	5.4%	147	1.6%
Life, Physical and Social Science	17,055	8.1%	498	5.6%
Community and Social Service	4,506	2.1%	125	1.4%
Legal Occupation	2,620	1.2%	61	0.7%
Education, Training and Library	23,269	11.1%	461	5.1%
Art, Design, Entertainment, Sports and Media	5,478	2.6%	127	1.4%
Healthcare Practitioners and Technology	22,470	10.7%	334	3.7%
Healthcare Support	3,149	1.5%	184	2.1%
Protective Service	1,434	0.7%	66	0.7%
Food Preparation and Serving Related	3,603	1.7%	988	11.0%
Building and Ground Cleaning&Maintenance	1,824	0.9%	717	8.0%
Personal Care and Services	3,428	1.6%	575	6.4%
Sales and Related	12,899	6.1%	581	6.5%
Office and Administrative Support	12,491	5.9%	679	7.6%
Farming, Fishing and Forestry	54	0.0%	97	1.1%
Construction and Extraction	1,551	0.7%	633	7.1%
Installation, Maintenance and Repair	1,541	0.7%	104	1.2%
Production	3,550	1.7%	966	10.8%
Transportation and Material Moving	2,665	1.3%	637	7.1%
Total	209,950	100.0%	8,960	100.0%

## Employment Status

	EP		LEP	
	Estimate	%	Estimate	%
Employed	209,950	95.2%	8,960	92.3%
Unemployed	10,602	4.8%	745	7.7%
Total	220,552	100.0%	9,705	100.0%

## Distribution of Workers by Nativity by Field of Study

Field of Study	Native-Born	Foreign-Born
Business	19.2%	16.0%
Natural Science	10.4%	18.3%
Healthcare and Medical	6.5%	6.8%
Engineering, Computer and Mathematics	12.3%	30.1%
Humanities	17.3%	10.7%
Social Science	21.0%	12.0%
Education	9.1%	4.6%
Communications	3.8%	1.3%
Other	0.2%	0.2%
Total	100.0%	100.0%

## High-skilled Foreign-Born Wage Ratios

Occupation	Average wage of high-skilled FB workers to average wage of high-skilled NB workers	Average wage of high-skilled FB workers to average wage of all FB workers	Average wage of high-skilled FB workers in occupation to average wage of high-skilled FB workers in all occupations
Management Occupations	1.03	2.47	1.54
Business and Financial Operation	0.91	1.68	1.05
Computer and Mathematics	1.00	1.92	1.20
Architecture and Engineering	1.00	1.92	1.20
Life, Physical and Social Science	1.05	1.59	0.99
Community and Social Service	0.99	0.94	0.59
Legal Occupation	0.78	1.81	1.13
Education, Training and Library	1.09	1.20	0.75
Art, Design, Entertainment, Sports and Media	1.00	0.96	0.60
Healthcare Practitioners and Technology	1.22	2.27	1.42
Healthcare Support	1.07	0.74	0.46
Protective Service	0.66	1.07	0.67
Food Preparation and Serving Related	1.12	0.62	0.39
Building and Ground Cleaning & Maintenance	0.63	0.38	0.23
Personal Care and Services	0.99	0.46	0.29
Sales and Related	0.71	1.21	0.76
Office and Administrative Support	0.93	0.90	0.56
Farming, Fishing and Forestry	0.88	0.37	0.23
Construction and Extraction	0.82	0.71	0.44
Installation, Maintenance and Repair	0.98	1.26	0.79
Production	0.74	0.90	0.56
Transportation and Material Moving	0.57	0.52	0.32
Total	0.98	1.60	1.00

## High-skilled Foreign-Born Average Wage by Field of Study and Language Ability

Field of Study	Average Wage by Field of Study and Language Ability									Wage Ratio EP vs LEP
	All High-skilled Foreign-Born Workers			English Proficient (EP)			Limited English Proficiency (LEP)			
	N	%	Average Wage	N	%	Average Wage	N	%	Average Wage	
Business	35,850	16.0%	\$62,847	34,196	15.9%	\$62,730	1,654	19.1%	\$65,251	0.96
Natural Science	41,008	18.3%	\$84,500	39,559	18.3%	\$86,489	1,449	16.8%	\$30,211	2.86
Healthcare and Medicare	15,174	6.8%	\$75,965	14,804	6.9%	\$77,278	370	4.3%	\$23,436	3.30
Engineering, Computer and Mathematics	67,494	30.1%	\$82,476	65,476	30.4%	\$83,705	2,018	23.3%	\$42,602	1.96
Humanities	24,030	10.7%	\$49,698	22,944	10.6%	\$50,354	1,086	12.6%	\$35,840	1.40
Social Science	26,960	12.0%	\$65,876	25,898	12.0%	\$66,693	1,062	12.3%	\$45,964	1.45
Education	10,311	4.6%	\$43,210	9,393	4.4%	\$44,361	918	10.6%	\$31,434	1.41
Communication	2,879	1.3%	\$48,685	2,786	1.3%	\$49,819	93	1.1%	\$14,709	3.39
Other	545	0.2%	\$54,162	545	0.3%	\$54,162	0	0.0%	NA	NA
Total	224,251	100.0%	\$71,452	215,601	100.0%	\$72,628	8,650	100.0%	\$42,116	1.72