

Literacy and Numeracy Skills of Second-Generation Young Adults: A Comparative Study of Canada, France, Germany, the United Kingdom, and the United States

Authors:

Jeanne Batalova

Michael Fix

Suggested Citation: Batalova, J. and Fix, M. (2016). *Literacy and Numeracy Skills of Second-Generation Young Adults: A Comparative Study of Canada, France, Germany, the United Kingdom, and the United States*. Retrieved [insert date], from [insert website]. Washington DC.

This project has been funded by the American Institutes for Research through a contract with the National Center for Education Statistics (NCES) of the U.S. Department of Education. This report is based on PIAAC data released in October 2013. The views expressed in this paper do not necessarily reflect the views or policies of the American Institutes for Research, National Center for Education Statistics, or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply their endorsement the U.S. Government.

AIR-PIAAC Contact:

Jaleh Soroui (AIR-PIAAC Director)
Saida Mamedova (Senior Research Analyst)
PIAACgateway.com
piaac@air.org

Author Contact:

Migration Policy Institute. Washington, D.C.
Jeanne Batalova at jbatalova@migrationpolicy.org;
and Michael Fix at mfix@migrationpolicy.org.



Literacy and Numeracy Skills of Second-Generation Young Adults:

A Comparative Study of Canada, France, Germany, the United Kingdom, and the United States

By Jeanne Batalova and Michael Fix¹

Migration Policy Institute
1400 16th St NW Suite 300
Washington, DC
20036, USA
www.migrationpolicy.org
www.migrationinformation.org

¹ For questions or comments contact Jeanne Batalova (JBatalova@MigrationPolicy.org).

Acknowledgments

This report was commissioned by the American Institutes for Research (AIR) and funded through a contract with the National Center for Education Statistics (NCES). The authors acknowledge AIR and NCES for their support of this research. They are grateful to Jaleh Soroui, Saida Mamedova, and Emily Pawlowski of AIR for their valuable guidance through the data analysis and writing of this report and to five anonymous reviewers for their critical insights and helpful suggestions. They also wish to thank their MPI colleagues Demetrios G. Papademetriou, Michelle Mittelstadt, and Jie Zong who provided thoughtful comments on an earlier draft.

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Executive Summary

Literacy and numeracy competencies are critical to social inclusion and economic success in today's knowledge-based economies. Skills' rising importance coincides with high sustained periods of migration worldwide and to the developed nations in particular. Countries can maximize immigration-related benefits, first, by fully utilizing the skills immigrants already have and, second, by assisting newcomers and their children to develop workplace and language skills needed to succeed in the knowledge-based economics.

This analysis follows an earlier MPI report that used the 2012 Program for International Assessment of Adult Competencies (PIAAC) to examine the competencies of adult immigrants (ages 16 to 65) in the United States, comparing their outcomes to the second generation and to the total U.S. adult population. We carry that work forward here by examining the sociodemographic characteristics and literacy and numeracy skills of first- and second-generation young adults (ages 16 to 34) in five countries that have received substantial numbers of immigrants since the end of the Second World War: Canada, France, Germany, the United Kingdom, and the United States. We focus on the young adult population as it is in a crucial phase of the life cycle that will determine its future economic and social trajectories and one where returns on public and private investments in skills are likely to be high. The young adult population in these countries is also of research and policy interest as substantial shares are composed of first- and second-generation² children of immigrants: about 40 percent in Canada and 25-30 percent in the other study countries.

The PIAAC represents the largest and most innovative *direct* assessment of adults' literacy and numeracy undertaken to-date. Of critical importance for our purposes is the substantial sample of immigrant-origin³ "millennials" (young adults between ages 16 to 34) for each of the countries examined. The survey includes standardized questions on the nativity of respondents' parents that allow us to identify and compare first, second, and third generations. In addition, the survey's common definitions of schooling and uniform assessment of literacy and numeracy skills make cross-country comparisons of education and competencies possible.

Key Findings

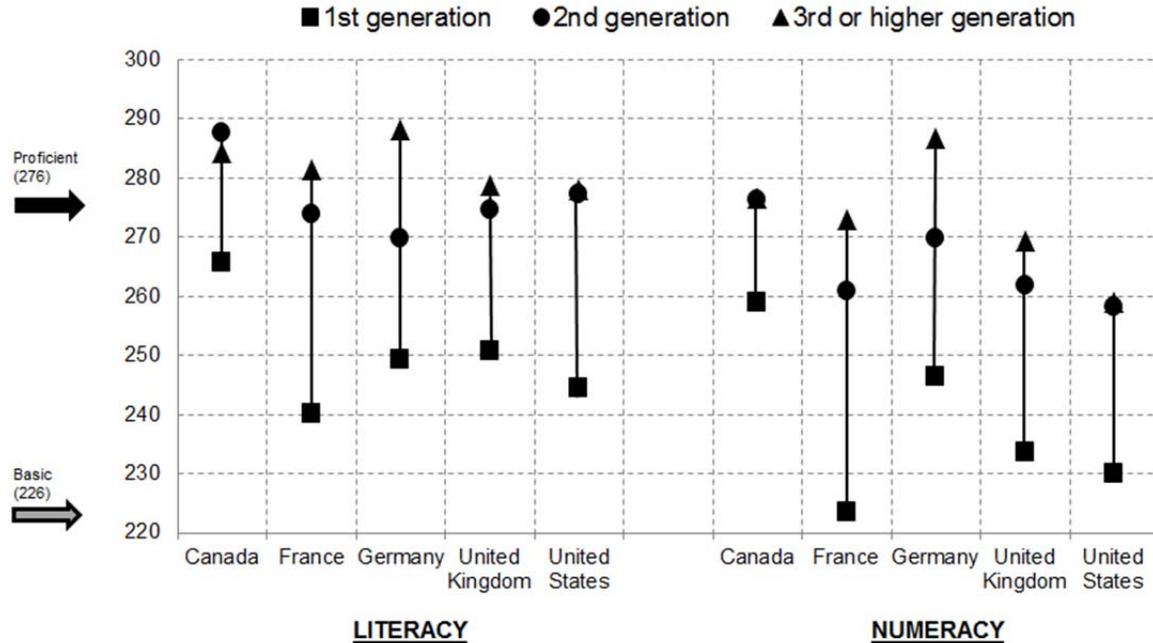
- **Within all five study countries first-generation young adults (16 to 34) lagged the literacy and numeracy skills of the second and third generations substantially**, as shown in the figure below. Young immigrant adults in Canada had the highest literacy and numeracy scores; those in France and the United States, the lowest. These results owe to very different criteria for immigrant admission and therefore the different composition of the countries' immigrant populations (in terms of age and period of arrival, language skills, levels and quality of education, e.g.) as well as differing integration contexts across the three countries (eligibility of newcomers for public and

² Following the OECD definition, this report defines *immigrants* (also referred to as the *foreign born* or the *first generation*) as persons born abroad regardless of their citizenship. The *second generation* refers to persons born in the study country with one or more foreign-born parents. The *third-plus* generation refers to young adults with both parents born in the study country. The terms *native born* and *natives* are used interchangeably to refer to those who were born in the study country. The *first generation* includes a small number of people who were born abroad with one native-born parent. The *third generation* includes a small number of people who were born abroad with both native-born parents. The generational analysis is based on the PIAAC's variable *imgen* with valid cases.

³ Together, the first and second generations make up the *immigrant-origin* population.

social benefits, adult education and language training, public and employer-supported skills training programs, e.g.).

Average Literacy and Numeracy Scores of Young Adults (ages 16 to 34) by Generation and Country of Residence



Source: MPI analysis of 2012 PIAAC data.

- The average literacy and numeracy scores of the first generation fall below the threshold “proficient” level indicating that **a substantial number of young immigrants lack basic skills**: More than a third of young immigrants in Germany, the United States, and France have low proficiency in literacy, which means that they have only basic vocabulary knowledge and can only work with simple, short texts of written information. More than two in five young immigrants in France, the United Kingdom and the United States lack basic numeracy skills, that is, they are only able to solve simple mathematical operations involving counting, sorting, and basic arithmetic.
- Literacy and numeracy scores are substantially higher among second-generation young adults across all five countries with scores essentially equaling those of the native, third generation for the United States, Canada, and the United Kingdom. The largest differences in scores between the first and second generations are recorded for France and the United States.
- Germany stands out in these international comparisons for several reasons:⁴
 - **It is the only country where second generation’s scores do not approximate the third; although there has been substantial intergenerational progress between the first and second generations here as well, like the other four study**

⁴ It has to be noted that 2012 PIAAC-based trends examined and reported here predate the large flows of migrants and asylum seekers to Germany and other European Union states. These newcomers are primarily younger men with lower levels of education. Therefore, our findings regarding literacy and numeracy skills of young immigrant adults in Germany in particular might underestimate the degree of educational needs that this population has.

countries. Our regression analysis shows that the second generation's low performance (compared to native Germans) is mostly explained by the low levels of educational attainment of these young adults and of their parents.

- Numeracy scores in Germany are as high as literacy scores: All other countries' numeracy scores are lower. Numeracy is held to be a particularly good predictor of individual mobility.⁵
- The comparatively high scores of the third generation (i.e., mostly of German origin) in both literacy and numeracy exceed the other four study countries.
- **While the first generation is overrepresented among those testing at low proficiency levels, the second generation is not—with the exception of Germany.** Further, the second generation is proportionately represented among those testing at the highest proficiency levels across all countries—again with Germany's exception.

In sum, we find low absolute scores in literacy and numeracy among the first generation in all study countries, but especially in France, the United States, and the United Kingdom. As in our earlier report, the second generation performs much better than the first but generally scores only at or below “proficient.” Comparatively strong average literacy and numeracy scores are broadly achieved across generations by Canada and by the third-generation young adults in Germany.

In terms of future research questions, our findings point to the need to examine policies and programs across the case study countries, as well as others, to understand how governments and service providers can successfully improve skills and workforce readiness of immigrant-origin young adults to ensure their full integration and participation in the economy and society.

I. Introduction

The U.S. immigrant population stood at more than 42.4 million representing 13 percent of the total U.S. population in 2014.⁶ Immigrants in the United States and their second-generation children now account for approximately 81 million people, or 26 percent of the overall U.S. population. Nowhere is the impact of this large immigrant-origin population felt more strongly than in the U.S. labor market. Today, one in four U.S. workers is either born abroad or has a foreign-born parent. Over the next two decades, as many as 77 million workers now in the labor force will retire and nearly all growth is expected to come from immigrants and their children.⁷ It is clear that the United States will need these new workers to be productive so they can help the nation compete in the new global economy.

Canada, another traditional immigrant destination country, also has a large immigrant-origin population. Although not as large as in the United States in absolute terms, the first and

⁵ Harry J. Holzer and Robert I. Lerman, “Cognitive Skills in the U.S. Labor Market: For Whom Do They Matter?” presentation at “Taking the Next Step with PIAAC: A Research-to-Action” conference, AIR, Arlington, VA, December 11-12, 2014.

⁶ Jie Zong and Jeanne Batalova, “Frequently Requested Statistics on Immigrants and Immigration in the United States,” *Migration Information Source*, April 14, 2016, <http://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states>.

⁷ Julia Gelatt, Jeanne Batalova, and B. Lindsay Lowell, <http://www.migrationpolicy.org/research/immigrants-and-labor-force-trends-future-past-and-present>.

second-generation population accounted for 38 percent of the Canadian population in 2011.⁸ A number of European countries including France, Germany, and the United Kingdom that experienced sustained flows of immigrants, foreign guest workers, and refugees since World War II also have sizable shares of both first- and second-generation populations.

Most of the second generation in OECD countries are still fairly young; many are enrolled in secondary and postsecondary educational systems and will join the labor market in the near future. The skills and competencies of immigrant-origin young adults in the United States and other OECD countries will have direct implications not only for the mobility prospects of these adults and their families, but also for the health of the national economies.⁹ As a result, understanding the skills these young workers bring to the labor market has become increasingly important for researchers and policy makers.

MPI's recently published analysis of literacy and numeracy skills of immigrant-origin adults in the United States¹⁰ using the 2012 Program for the International Assessment of Adult Competencies (PIAAC) confirmed a central finding in the existing U.S. literature on immigrant integration: There is steady progress in human capital (in this case skills) from the first to the second generation. Our earlier paper found that the literacy levels of the second generation were substantially higher than the first and nearly identical to those of third generation (i.e., the comparison group). Our analyses also highlighted the fact that while the second generation has caught up to the third generation in the United States, both groups' proficiency levels remain low by absolute standards and relative to most other countries in the OECD.

But how do the skills of the second generation compare to the third generation cross-nationally? Our knowledge about national as well as cross-country differences in skills among immigrant-origin young adults is limited to a few important but comparatively narrow studies.¹¹ The limited number of these studies owes in large part to two principal barriers to their conduct: 1) a lack of comparable cross-country data; and 2) the absence of standardized assessment of human capital characteristics such as education and skills.

In this regard, the recent 2012 PIAAC¹² data provide a unique opportunity to conduct research that examines skill differences within countries across generations and across countries. By

⁸ Statistics Canada, *Generation Status: Canadian-born Children of Immigrants*, http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-010-x/99-010-x2011003_2-eng.cfm.

⁹ Jeanne Batalova and Michael Fix, *Up for Grabs: The Gains and Prospects of First- and Second-Generation Young Adults* (Washington, DC: Migration Policy Institute, 2011), <http://www.migrationpolicy.org/research/prospects-first-second-generation-young-adults-up-for-grabs>; Demetrios G. Papademetriou, Madeleine Sumption, and Will Somerville, *The Social Mobility of Immigrants and Their Children*, (Washington, DC: Migration Policy Institute, 2009), <http://migrationpolicy.org/research/social-mobility-immigrants-and-their-children>.

¹⁰ Jeanne Batalova and Michael Fix, *Through an Immigrant Lens: PIAAC Assessment of the Competencies of Adults in the United States* (Washington, DC: Migration Policy Institute, 2015), <http://www.migrationpolicy.org/research/through-immigrant-lens-piaac-assessment-competencies-adults-united-states>.

¹¹ Nancy Foner and Richard Alba, "Immigrant religion in the U.S. and Western Europe: Bridge or Barrier to illusion?" *International Migration Review* 42 no. 2 (2008): 360-92; Maurice Crul, Jens Schneider, and Frans Lelie, *The European Second Generation Compared: Does the Integration Context Matter?* http://www.tiesproject.eu/component/option.com_docman/task.doc_download/gid.528/Itemid.142/index.html.pdf; Alejandro Portes and Ruben G. Rumbaut, *Legacies: The Story of the Immigrant Second Generation* (Berkeley, CA: University of California Press, 2001).

¹² American Institute for Research, *PIAAC: A New Strategy to Assess Adult Competencies and Their Social and Economic Impact in the United States and Internationally*, Institute of Education Sciences, National Center for Education Statistics, http://static.squarespace.com/static/51bb74b8e4b0139570ddf020/t/53c02debe4b011307db8c442/1405103595531/Introduction%20to%20PIAAC_063014.pdf.

identifying the nativity of respondents' parents, PIAAC allows researchers to assess skills acquisition across generations in a way that is consistent across countries. PIAAC also makes it possible to examine literacy and numeracy skills¹³ assessed via direct testing, instead of relying on self-reported assessment of skills.

In this paper we analyze the publicly available PIAAC data¹⁴ in order to answer three research questions:

- What are the key demographic and social characteristics of young adults (ages 16 to 34) by generation? How do they vary across the five study countries (Canada, Germany, France, the United Kingdom, and the United States)?
- How do the skills of the second-generation young adults compare to those of the first, immigrant generation?
- Do the second-generation young adults in Canada, France, Germany, and the United Kingdom catch up with the third generation as they do in the United States?

A. Population and Country Focus of the Paper

We focus on the 16-34 population (often referred as 'millennials') rather than the entire 16-65 population in the PIAAC survey because we are interested in young adults who are either in the labor force pipeline or who recently entered the workforce. Millennials are an important demographic subgroup that that will significantly contribute to the economic and social well-being of the study countries in the next 40-50 years.¹⁵ In part because of its youth, this subgroup is likely to yield the highest return on investment from targeted educational and workforce training programs. In addition, the 16-34 population is comprised of a substantial number of immigrant-origin youth, and thus provides us with important insights about integration progress and barriers in the study countries.

We selected four countries—Canada, France, Germany, and the United Kingdom—to compare to the United States. We did so for two main reasons. First, each has a relatively long history of sustained immigration and settlement (at least 50-60 years; longer in the case of Canada and France) which is now reflected in both the ethnic and linguistic composition of the immigrant-origin population as well as the relative socioeconomic progress experienced by newcomers and their children. Second, there is already a body of comparative literature for each of the five study countries focusing on the outcomes of immigrant-origin children and youth that can help put the results in context.

¹³ PIAAC administered four types of assessments: literacy, numeracy, problem solving skills in the technology rich environments (PS-TRE), and reading. All participating countries conducted literacy and numeracy skill assessments; the other two domains were optional. Adults with very low literacy skills took the reading component part; their scores were included in the literacy scores. Of the five study countries, France had no PS-TRE results in the international PIAAC dataset. Even among the countries with the PS-TRE assessment data, not all participating adults were assessed. For instance, close to 10 percent of the U.S. young adults and 7 percent of those in the U.K. took the paper-and-pencil, instead of the computer-based test. These adults did not take the PS-TRE assessment. Because one of our study countries has no PS-TRE results, and because not all adults in the other four study countries took this test, we did not include PS-TRE in our analysis.

¹⁴ Our descriptive analyses (cross-tabulations) are based on the individual countries' public-use data files available on the OECD PIAAC website (referred here as an international PIAAC dataset): <http://www.oecd.org/site/piaac/publicdataandanalysis.htm>.

¹⁵ Madeline Goodman, Anita Sands, and Richard Coley, *America's Skills Challenge: Millennials and the Future*, (Princeton, NJ: ETS, 2015), <http://www.ets.org/s/research/30079/index.html>

B. Organization of the Report

This study represents one of the first analyses of the intergenerational acquisition of skills across these five major immigrant-receiving countries. The report begins by highlighting results from the existing literature on children and young adults from immigrant families and their educational successes and challenges, followed by a brief note on PIAAC data and methodology. We then describe key demographic, education, and linguistic characteristics of young adults in the five countries drawn from the PIAAC's detailed background questionnaire. Proceeding from this sociodemographic profile of young adults, we then examine their literacy and numeracy skills assessed by the PIAAC. We conclude with a summary of the key findings and their implications.

II. Selected Results from the U.S. and International Literature on the Second Generation

To explain the experiences of various immigrant groups and their children within and across countries, it is useful to understand how immigrant receiving countries' admission systems and the context of migrants' reception in these countries may have influenced newcomers' integration prospects.

The United States. Home to one in five immigrants worldwide, the United States has a large and diverse immigrant-origin population whose educational and economic integration has been the subject of intense, cross-disciplinary research, including a comprehensive recent review by the National Academies of Sciences (NAS).¹⁶ Today, more than 78 million, or one in four U.S. residents, are either immigrants or their children.

The majority of the immigrant-origin population has roots in Mexico and other Latin American countries. Overall, Hispanics account for 46 percent of all U.S. immigrants and 13 percent of the U.S.-born population. Immigration from Latin America has been driven in large part by lack of economic opportunities at home and demand for low-skilled labor in agriculture, construction, and service sectors in the United States. Many Latin American immigrants do not have legal status—which, as studies¹⁷ increasingly show, has a deep, long-term, and detrimental impact not only for these immigrants but also for their U.S.-born children. Bean and colleagues find that U.S.-born young adults with an unauthorized mother are at least 1.5 years behind children with legal immigrant parents in their educational attainment.¹⁸ At the same time research¹⁹ documents substantial progress among second-generation Hispanics (women²⁰ in particular) who have made significant gains compared to their parents (the first generation) by earning high

¹⁶ National Academies of Sciences, Engineering, and Medicine, *The Integration of Immigrants into American Society*, eds. Mary Waters and Marisa Gerstein Pineau, Panel on the Integration of Immigrants into American Society, Committee on Population, Division of Behavioral and Social Sciences and Education (Washington, DC: The National Academies Press, 2015).

¹⁷ Carola Suárez-Orozco, Hirokazu Yoshikawa, Robert T. Teranishi, and Marcelo Suárez-Orozco, "Growing up in the Shadows: The Developmental Implications of Unauthorized Status," *Harvard Educational Review* 81 no. 3 (2011): 438-72; Hirokazu Yoshikawa, *Immigrants Raising Citizens: Undocumented Parents and Their Young Children* (New York: Russell Sage Foundation, 2012).

¹⁸ Frank D. Bean, Susan K. Brown, and James D. Bachmeier, *Parents without Papers: the Progress and Pitfalls of Mexican American Integration* (New York: Russell Sage Foundation, 2015).

¹⁹ Portes and Rumbaut, *Legacies*; Richard Alba, Philip Kasnitz, John H. Mollenkopf, and Mary Waters, eds., *Becoming New Yorkers: Ethnographies of the New Second Generation* (New York: Russell Sage Foundation, 2004).

²⁰ Batalova and Fix, *Up for Grabs*.

school and college credentials and moving into professional and better paying jobs, thus overcoming the legacy of their parents' unauthorized status and low education, residential segregation, and discrimination in schools and the labor market.²¹

The second largest U.S. immigrant group is from Asia (accounting for 30 percent of all U.S. immigrants). Within this group the largest populations are from India, mainland China, the Philippines, Vietnam, and South Korea. Most immigrants from Vietnam came as refugees following the Vietnam War; those from the Philippines came through family reunification or as healthcare professionals. Chinese, Taiwanese, Indian, and Korean immigrants came primarily to work or study in sciences, technology, and medicine. Their integration progress, and especially the educational success of children from Asian families,²² has led some to describe Asians as a 'model minority.' Leaving aside the controversies surrounding the 'model minority' image,²³ one distinct feature of the Asian-origin population in the United States is that, on average, they are highly educated, work in skilled and professional jobs, and earn on a par, if not more, than U.S.-born whites.²⁴

Like the first and second generation of Asian origin, immigrants from Europe, Canada, Australia, and New Zealand and their children are often better off in terms of economic and educational outcomes than the third-generation U.S. population; they also have higher levels of education, English proficiency, and labor market success than their counterparts from Latin America. African-born immigrants, who represent one of the fastest growing immigrant groups, are made up of a diverse mix ranging from professionals and foreign students on the one hand, to low-educated refugees from war-torn areas on the other. There is a growing body of literature focusing on the linguistic, educational, and financial challenges immigrant families of African and Black Caribbean origin experience and their influence on their children's health and access to education.²⁵ Existing research shows that although the second-generation of black descent has lower educational attainment than their counterparts of Asian origins, black immigrants and their children are doing as well or better than U.S.-born Blacks from native families.²⁶

²¹ National Academies of Sciences, *The Integration of Immigrants into American Society* (Chapter 6); Richard Alba and Jennifer Holdaway (eds.), *The Children of Immigrants at School: A Comparative Look at Integration in the United States and Western Europe* (New York: New York University Press, 2013); Richard Alba, Philip Kasinitz, and Mary Waters, "The Kids Are (Mostly) Alright): Second Generation Assimilation" *Social Forces* 89 no 3 (2011): 763-73; Mary C. Waters and Philip Kasinitz, "Discrimination, Race Relations and the Second Generation," *Social Research* 77 no 1 (2010): 101-32; Maurice Crul and Jennifer Holdaway, "Children of Immigrants in Schools in New York and Amsterdam: The Factors Shaping Attainment," in *Educating Immigrant Youth: Pathways to Employment and Citizenship in International Perspective*, eds. Maurice Crul, Jennifer Holdaway, and C. Roberts, (Teachers College Record (Special Issue), 2009).

²² Reynolds Farley and Richard Alba, "The New Second Generation in the United States," *International Migration Review* 36 no. 3 (2002), 669-701.

²³ The Economist, "The Model Minority Is Losing Patience," The Economist, October 3, 2015, <http://www.economist.com/news/briefing/21669595-asian-americans-are-united-states-most-successful-minority-they-are-complaining-ever>.

²⁴ However when educational attainment levels are controlled for they do less well than native born whites, according to the National Academy of Sciences report.

²⁵ Randy Capps and Michael Fix, eds., *Young Children of Black Immigrants in America: Changing Flows, Changing Faces* (Washington, DC: Migration Policy Institute, 2012); Mary C. Waters, "Ethnic and Racial Identities of Second-Generation Black Immigrants in New York City," *International Migration Review* 28 no. 4 (1993): 795-820; Kevin J.A. Thomas, "Family Influences on Poverty Among Young Children in Black Immigrant, U.S.-Born Black, and Nonblack Immigrant Families," *Demography* 48 (2011): 437-60.

²⁶ Jeffrey Reitz, Heather Zhang, and Naoko Hawkins, "Comparisons of the Success of Racial Minority Immigrant Offspring in the United States, Canada and Australia," *Social Science Research* 40 no. 4 (2011): 1051-66. It should also be noted that the recent evidence finds that the Black second generation is falling behind other race and ethnic groups regarding its spatial segregation from whites and its employment and educational mobility (see the National Academy of Sciences report).

Canada. Like the United States, Canada has a long history of immigration. Canada abolished immigration quotas favoring white, European-origin immigrants at roughly the same time as the United States (the early-to-mid 1960s).²⁷ Since then, the Canadian government's approach has strongly emphasized skilled and educated immigration (in contrast, the U.S. system which favors family immigrants). Thus many newcomers in Canada have entered with at least a college degree; many with good English- or French-speaking skills.

Although the United States has a much larger immigrant population in absolute terms, immigrants' share of the total population is higher in Canada: 21 percent of the Canadian total population in 2011 was foreign born—well above the United States and Germany (13 percent each) and the U.K. and France (12 percent each).²⁸ Asia is the largest sending region of immigrants to Canada, with India, China, and the Philippines representing nearly a quarter of the 6.8 million immigrants residing in Canada in 2011.²⁹ Asia was also Canada's largest source of recent immigrants: 57 percent of the 1.2 million people who arrived between 2006 and 2011 were from Asia. Like the United States, the share of European immigrants in Canada has been declining since 1970s while the shares of immigration from Africa, Caribbean, Central and South America were increasing between 2006 and 2011.

In Canada, admission policy has gone hand in hand with immigrant integration policy and programs, while in the United States immigrant integration has taken a more *laissez faire* approach.³⁰ Canada was the first country to officially adopt a multiculturalism policy and has two official languages (English and French). The two countries also differ in the role and strength of their labor market institutions such as labor unions, access to higher education and social safety net. Reitz argues that the impact of these structural differences is more important than immigrant admission policies for the economic outcomes of immigrants and their families.³¹ Also, unlike the United States, immigration to Canada for the most part has come through legal channels, putting new arrivals on a path to full participation in the society and economy and to citizenship.

Research has found that overall the Canadian second generation fares well.³² Like the United States, the second generation in Canada outperforms the first in terms of educational attainment, occupational status, and household income.³³ Hansen and Kucera reported that Canadian-born adults with either one or both immigrant parents have higher educational attainment than their counterparts from native-born families.³⁴ Others have concluded that even

²⁷ Triadafilos Triadafilopoulos, "Dismantling White Canada: Race, Rights, and the Origins of the Points System" in *Wanted and Welcome? Immigrants and Minorities, Politics and Policy*, ed. T. Triadafilopoulos (New York: Springer-Verlag, 2013); Abdurrahman Aydemir and Arthur Sweetman, "First and Second Generation Immigrant Educational Attainment and Labor Market Outcomes," *Research in Labor Economics* 27 (2007): 215-70.

²⁸ OECD, *International Migration Outlook 2015*, (Paris: OECD Publishing, 2015).

²⁹ Statistics Canada, *Canada Year Book, 2012*, (Ottawa: Statistics Canada, 2014), <http://www.statcan.gc.ca/pub/11-402-x/2012000/pdf/ethnic-ethnique-eng.pdf>; Statistics Canada, *Immigration and Ethnocultural Diversity in Canada* (Ottawa: Statistics Canada, 2014), <http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-010-x/99-010-x2011001-eng.cfm#a4>.

³⁰ Michael Fix, ed., *Securing the Future: U.S. Immigrant Integration Policy, A Reader* (Washington, DC: Migration Policy Institute, 2007).

³¹ Jeffery Reitz, *Warmth of the Welcome: The Social Causes of Economic Success for Immigrants in Different Nations and Cities* (Boulder, CO: Westview Press, 1998).

³² Aydemir and Sweetman, "First and Second Generation Immigrant Educational Attainment."

³³ Reitz, Zhang, and Hawkins, "Comparisons of the Success of Racial Minority Immigrant Offspring in the United States, Canada and Australia"; Kathryn McMullen, *Postsecondary Education Participation among Underrepresented and Minority Groups* (Ottawa: Statistics Canada, 2011), <http://www.statcan.gc.ca/pub/81-004-x/2011004/article/11595-eng.htm>

³⁴ Jorgen Hansen and Miroslav Kucera, "The Educational Attainment for Second Generation Immigrants in Canada: Evidence from SLID," (IZA summer school working paper, Bonn, Germany: Institute for the Study of Labour, 2004), http://www.iza.org/en/webcontent/teaching/summerschool_html/7thsummer_school_files/ss2004_kucera.pdf.

if there is an initial gap in reading and writing skills between young children from native versus immigrant families, this disadvantage disappears by age 13.³⁵ Reitz and colleagues³⁶ found that as in the United States, children of Chinese and South Asian immigrants in Canada do well compared to the native white and other second-generation groups. While children from African and Black Caribbean families reach educational milestones comparable to their native-born counterparts, they lag second-generation Asians. Some researchers note that despite the high educational attainment of first and second-generation Blacks in Canada, they tend to earn less than their white counterparts, with the gap at least partially attributable to race-based discrimination.³⁷

The European study countries. Although Germany, France, and the U.K. have similar shares of immigrants (12-13 percent), their immigrant populations are very different in terms of origins, levels of education, language proficiency, admission pathways, and labor market attachment—factors known to influence socioeconomic integration and mobility prospects for immigrants and their children. To rebuild its economy and infrastructure in the post-WWII period, **Germany**³⁸ began importing low-skilled guest workers from Italy, Spain, Greece, Turkey, and Yugoslavia; many of whom eventually settled and had families in Germany. Throughout the second half of the 20th century, Germany received a large influx of ethnic Germans, including those from Poland, Romania, and the former Soviet Union. Both the **United Kingdom and France** accepted a large number of nationals and other immigrants in the second half of the 20th century after their colonies gained independence. France has received (largely low-skilled) immigrants from North Africa (Morocco and Algeria, in particular) as well as Portugal, Spain, and Turkey. The United Kingdom admitted immigrants from South Asia (India, Pakistan, and Bangladesh) and the Caribbean.

Following the 2004 EU enlargement, the U.K. and Germany became destinations for significant flows of new EU citizens from Eastern Europe. The three European study countries also continue to be a destination for migrants from outside of the EU, who come to work, study, reunite with their families, or seek protection. More recently, Germany has become a preferred destination for refugees, asylum seekers, and economic migrants from Syria, Afghanistan, and Sub-Saharan Africa.³⁹

During the 2000s, Germany, the U.K., and France experimented with immigration policies that prioritized skilled- and employment-based immigration while reducing family admissions.⁴⁰ While the “green card” program in Germany and “blue card” program in the EU did not attract large numbers of highly-educated immigrants, the U.K.’s “points” system launched in 2008 was more

³⁵ Christopher Worswick, “School Performance of the Children of Immigrants in Canada, 1994-98,” (Analytical Studies Branch Research Paper Series No. 178, Ottawa: Statistics Canada, November 2001), <http://www.statcan.gc.ca/pub/11f0019m/11f0019m2001178-eng.pdf>.

³⁶ Reitz, Zhang, and Hawkins, “Comparisons of the Success of Racial Minority Immigrant Offspring in the United States, Canada and Australia.”

³⁷ Yan Guo and Yvonne Herbert, “Educational Integration of Immigrant Children and Youth: Policy Ineffectiveness and Its Consequences for Learners and Society,” in *Immigrant Integration: Research Implications for Future Policy*, ed. Kenise Murphy Kilbride (Toronto: Canadian Scholars’ Press, 2014).

³⁸ Veysel Oezcan, “Germany: Immigration in Transition,” *Migration Information Source*, July 2004, <http://www.migrationpolicy.org/article/germany-immigration-transition/>.

³⁹ Natalia Banulescu-Bogdan and Susan Fratzke, “Europe’s Migration Crisis in Context: Why Now and What Next?” *Migration Information Source*, September 2015, <http://www.migrationpolicy.org/article/europe-migration-crisis-context-why-now-and-what-next>.

⁴⁰ Madeleine Sumption, “The Points System Is Dead; Long Live the Points System,” *Migration Information Source*, December 10, 2014, <http://www.migrationpolicy.org/article/top-10-2014-issue-9-points-system-dead-long-live-points-system>; Elizabeth Collett, “The Proposed European Blue Card System: Arming for the Global War on Talent?” *Migration Information Source*, January 7, 2008, <http://www.migrationpolicy.org/article/proposed-european-blue-card-system-arming-global-war-talent>.

successful. Today, the U.K. admits a significant portion of its economic immigrants through the system that awards points based on applicants' English language skills, education, (younger) age, and work experience or a job offer.⁴¹

National and intra-EU studies show that the second generation does better than the first on many educational and employment indicators.⁴² However they also reveal that second-generation groups from the same origins have markedly different outcomes across countries and cities;⁴³ and that the second generation generally lags the third in Europe.⁴⁴

Like second-generation Hispanics in the United States, research in Europe finds substantial intergenerational mobility for many origin groups: gains that owe in part to the low social and economic position of the first.⁴⁵ School attendance was higher among the second-generation Turks than their parents' generation in France, but remained low by national standards.⁴⁶ In examining second-generation Turks in five European countries, Crul and Vermeulen⁴⁷ concluded that despite the emergence of some elite groups, a sizable number of second-generation Turks have fallen behind to the point where they now risk becoming a permanent underclass in France, Belgium, and the Netherlands. In contrast, the integration of Turks in Germany and Austria has gone more smoothly in part due to early sorting into the apprenticeship systems, although many were consigned to low-skilled occupations.⁴⁸

Unlike Canada and the United States, the literature has found that the second generation in Europe by and large lags their counterparts from native families on education and employment indicators, although the extent of these differences varied by host country and origin group.⁴⁹ The OECD's Programme for International Student Assessment (PISA) 2012 data show⁵⁰ that the performance gap in math between the third- and second-generation 15-year olds in France and Germany was greater than 50 score points—an equivalent of more than 1.5 years of instruction.⁵¹ In contrast, the gaps in math performance were smaller in the U.K. (19 score points). European labor force survey data also indicate that both the first- and second-

⁴¹ Demetrios Papademetriou and Madeleine Sumption, *Rethinking Points Systems and Employer-Selected Immigration* (Washington, DC: Migration Policy Institute, 2011), <http://www.migrationpolicy.org/research/rethinking-points-systems-and-employer-selected-immigration>.

⁴² Maurice Crul and Hans Vermeulen, "The Second Generation in Europe," *International Migration Review* 37 no. 4 (2003): 965-86.

⁴³ It is important to note that, due to data limitations and discrepancies, European researchers might not use the same definition of the "second generation."

⁴⁴ OECD/European Union, *Indicators of Immigrant Integration 2015: Settling In* (Paris, OECD Publishing, 2015), <http://www.oecd.org/publications/indicators-of-immigrant-integration-2015-settling-in-9789264234024-en.htm>

⁴⁵ Maurice Crul, et al., "School Careers of Second-Generation Youth in Europe: Which Education Systems Provide the Best Chance for Success?" in *The European Second Generation Compared: Does the Integration Context Matter?* eds. Maurice Crul, Jens Schneider, and Frans Lelie (Amsterdam: Amsterdam University Press, 2012), http://www.tiesproject.eu/component/option%2c%2cocom_docman/task%2c%2cdownload/gid%2c%2c528/Itemid%2c%2c142/index.html.pdf.

⁴⁶ Patrick Simon, "France and the Unknown Second Generation: Preliminary Results on Social Mobility," *International Migration Review* 37 no. 4 (2003): 1091-119.

⁴⁷ Maurice Crul and Hans Vermeulen, "Immigration, Education, and the Turkish Second Generation in Five European Nations: A Comparative Study" in *Integration and the Transformation of Europe*, eds. Craig Parsons and Timothy Smeeding (Cambridge: Cambridge University Press, 2008).

⁴⁸ Maurice Crul and Hans Vermeulen, "The Second Generation in Europe," *International Migration Review* 37 no. 4 (2003): 965-86.

⁴⁹ Eurostat, *Migrants In Europe—A Statistical Portrait of The First and Second Generation*, http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/pdf/migrants_in_europe_eurostat_2011_en.pdf.

⁵⁰ OECD, *Immigrant Students at School: Easing the Journey towards Integration*, (Paris, OECD Publishing, 2015). <http://dx.doi.org/10.1787/9789264249509-en>.

⁵¹ For comparison, PISA data show only a small difference in math or no difference in reading scores between the second and third generations in the U.S. or Canada. PISA data also show that U.S. third-generation students had lower math and reading scores than students in most EU countries.

generation young adults had lower employment and higher unemployment rates than their third-generation counterparts. The gaps were larger in France than in Germany and the U.K.⁵²

One way to assess integration is to probe whether immigrants and their children believe they are accepted by host societies. Research⁵³ shows that in most EU countries, the second generation felt greater levels of discrimination than their first-generation counterparts. According to the European Social Survey,⁵⁴ 27 percent of second-generation young adults in France said they felt discriminated against compared to 17 percent of all foreign-born adults. Although fewer second-generation young adults in the U.K. reported feeling discrimination (23 percent), the gap between this group and all foreign-born adults was also about 10 percentage points. France and the U.K. were among the four EU countries surveyed with the highest shares of young second-generation who felt discriminated against (after the Netherlands with 36 percent and Austria 34 percent). In contrast, the shares of young adults of immigrant origin claiming discrimination in Canada⁵⁵ were lower than their EU counterparts regardless of their origin.

This overview of the integration of immigrants and of the second generation in the five countries highlights wide differences not only in the cultural and linguistic origins of the first and second generations, but also in their economic outcomes. It remains uncertain whether second-generation youth from less privileged backgrounds will be able to catch up to their native counterparts and join the ranks of the middle class given rising income inequality and uneven access to postsecondary education in the United States⁵⁶ and persistently high levels of youth unemployment and discrimination in Europe.⁵⁷ These trends also suggest that the successes and failures of the second generation—that will account for a rising share of the workforce in North America and Europe—will remain central to the economic futures of the countries examined here.

The trends in composition and skills of young adults of immigrant origin examined here do not fully reflect the extraordinary flows to Europe in 2014-2015.⁵⁸ Seeking both economic opportunities and humanitarian protection, the new arrivals to the European Union—primarily to Germany—have been composed principally of working-age millennial males from sub-Saharan Africa and the Middle-East. It is estimated that about half of the one million persons arriving since 2014 will eventually qualify for permanent residence in Germany; most are comparatively unskilled and lack credentials that would be recognized by Germany's highly structured labor market. Thus, at least in the case of Germany, if PIAAC had been conducted in 2016 we would expect that the overall level of education and skills of immigrant young adults to be lower than in the 2012 survey year.

⁵² OECD, *Indicators of Immigrant Integration 2015*.

⁵³ OECD, *Indicators of Immigrant Integration 2015*.

⁵⁴ Data on European countries refer to the “sense of belonging to a group that is discriminated against on the grounds of race, ethnicity, or nationality,” as described in OECD’s *Indicators of Immigrant Integration 2015*. The second generation young adults refer to those ages 15 to 34 with two foreign-born parents. The first generation refers to all foreign-born adults ages 15 to 64.

⁵⁵ Canadian data refer to immigrants who have “experienced discrimination or have been treated unfairly in the past five years because of their ethnicity, culture, race, or colour,” as described in OECD’s *Indicators of Immigrant Integration 2015*.

⁵⁶ Batalova and Fix, *Up for Grabs*; Aydemir and Sweetman, “First and Second Generation Immigrant Educational Attainment and Labor Market Outcomes;” Alejandro Portes and Min Zhou, “The New Second Generation: Segmented Assimilation and its Variants,” *The Annals of the American Academy of Political and Social Science* 530 (1993): 74-96; Portes and Rumbaut, *Legacies*; Crul and Holdaway, “Children of Immigrants in Schools in New York and Amsterdam.”

⁵⁷ OECD, *OECD Skills Outlook 2015: Youth, Skills and Employability* (Paris: OECD Publishing, 2015), <http://dx.doi.org/10.1787/9789264234178-en>.

⁵⁸ Caitlin Katsiaficas, “Asylum Seeker and Migrant Flows in the Mediterranean Adapt Rapidly to Changing Conditions,” *Migration Information Source*, June 22, 2016, <http://www.migrationpolicy.org/article/asylum-seeker-and-migrant-flows-mediterranean-adapt-changing-conditions>.

III. PIAAC Data and Methodology⁵⁹

PIAAC is the most recent *direct* assessment of adults’ literacy and numeracy skills conducted by the Organization for Economic Cooperation and Development (OECD) in 24 countries. The PIAAC survey is harmonized across countries and based on sample sizes that allow comparisons between immigrant- and native-origin groups within, as well as across countries. Coupled with a detailed background questionnaire that collects information on socio-demographic, family background, education, language, workforce, and economic characteristics, the PIAAC provides a unique lens for examining the level of young adults’ work-preparedness and skills across immigrant generations and study countries.

PIAAC test scores for literacy and numeracy range from 0 to 500, corresponding to six proficiency levels.⁶⁰ The OECD deems adults who score at Levels 3 or above (or at least 276 score points) as “proficient.” Following earlier OECD reports⁶¹ we group literacy and numeracy skill levels into three categories (see Table 1):

Table 1. Definitions of Proficiency Levels and Corresponding Cut Scores

Population Group by Proficiency	Levels on Literacy and Numeracy Assessment
Low proficiency (poor or low skills)	Level 1 and Below Level 1 <i>Scoring range: 0-225</i>
Basic proficiency	Level 2 <i>Scoring range: 226-275</i>
Proficient (including “high performers”)	Level 3: Proficient skills Levels 4 and 5: “High performers” <i>Scoring range: 276-500</i>

⁵⁹ PIAAC is a sophisticated survey with a four-stage stratified area probability sample. PIAAC also has a complex assessment design: Respondents did not have to answer all test questions (some of their scores were imputed) and the level of question difficulty depended on the respondents’ skills. The complexity of both sample and assessment design had implications for how the scores were generated. To account for these features of the PIAAC survey, our results are generated by using SAS macros and procedures provided by the OECD that employed ten plausible values on literacy and numeracy domains. PIAAC sampling weights are used to produce population estimates.

⁶⁰ Each proficiency level is represented by a range of tasks. Each score denotes a point at which a respondent has a 67-percent chance of successfully completing tasks that are associated with a similar level of difficulty. PIAAC administered four types of assessments: literacy, numeracy, problem-solving in technology-rich environments, and reading components (for adults with very low literacy skills). All countries were required to conduct the literacy and numeracy assessments, while the other two were optional. See OECD, *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills* (Paris: OECD Publishing, 2013), [www.insidehighered.com/sites/default/server_files/files/Skills%20volume%201%20\(eng\)--full%20v8--eBook%20\(01%2010%202013\).pdf](http://www.insidehighered.com/sites/default/server_files/files/Skills%20volume%201%20(eng)--full%20v8--eBook%20(01%2010%202013).pdf)

⁶¹ OECD, *Time for the U.S. to Reskill? What the Survey of Adult Skills Says* (Paris: OECD Publishing, 2013), http://skills.oecd.org/documents/Survey_of_Adult_Skills_US.pdf; OECD and European Commission, Directorate-General for Education and Culture, *The Survey of Adult Skills (PIAAC): Implications for Education and Training Policies in Europe* (Paris and Brussels: OECD Publishing and European Commission, Directorate-General for Education and Culture, 2013), www.oecd.org/site/piaac/PIAAC%20EU%20Analysis%2008%2010%202013%20-%20WEB%20version.pdf

To convey more concretely how these scores correlate to skills we provide a brief description of what adults are expected to do at each level of proficiency in literacy:⁶²

- Adults with low skills (i.e., Level 1 or below) at best, can perform the simplest literacy tasks such as read relatively short texts in order to locate a single piece of information asked in the question. An example of a task at literacy Level 1 is to read a school flyer that lists school rules, including the time the first class begins, and then be able to answer a question about when the school starts.
- Adults with basic proficiency (Level 2) in literacy are able to read longer texts; identify information from different parts of a document such as a newspaper article; or paraphrase the content they read in print or online.
- Adults who are proficient in literacy (Level 3) are able to work with longer, more complex or dense digital or printed texts; identify, interpret, and evaluate one or more pieces of information; and make a decision regarding which information is irrelevant in order to answer the question. As the level of proficiency increases (from Level 3 to 4 and then to 5), these tasks become progressively more difficult. A literacy task at Level 4, for instance, is to navigate between two texts—an online article about Q-Drum, a popular device used to transport water by villagers in Africa, and an email about a similar device called the Life Straw—and to identify the sentences in the two documents that criticize both methods of carrying water.⁶³ The OECD considers adults performing at Level 3 or higher to have the skills necessary⁶⁴ for full integration and participation in the modern economy, education and workforce training, and social and civic life.

Each additional year of education can be associated with approximately seven score points.⁶⁵ With regard to proficiency levels, one proficiency *level* translates into roughly seven years of education or 50 score points.⁶⁶ We present our results both as average scores and literacy and numeracy proficiency levels.⁶⁷

A. *Limitations of the PIAAC Sample*

Unlike its predecessors, the International Adult Literacy Survey (IALS) and Adult Literacy and Life Skills Survey (ALL),⁶⁸ PIAAC's data collection was carried out primarily on laptop computers. PIAAC's computer-adaptive assessment tested respondents' skills with tasks targeted to their performance levels. However, not every participant chose or could take a computer-based assessment. In the United States, about 80 percent of the PIAAC respondents

⁶² For more detail, see National Center for Education Statistics' "PIAAC Proficiency Levels for Literacy" (<https://nces.ed.gov/surveys/piaac/litproficiencylevel.asp>) and "PIAAC Proficiency Levels for Numeracy" (<https://nces.ed.gov/surveys/piaac/numproficiencylevel.asp>).

⁶³ This example is from the PIAAC assessment in OECD, *Education and Skills Online: PIAAC Sample Items*, available here: <http://www.oecd.org/site/piaac/surveyofadultskills.htm>

⁶⁴ OECD, *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*.

⁶⁵ OECD, *The Survey of Adult Skills (PIAAC)*.

⁶⁶ Ibid.

⁶⁷ All differences described in this report have been tested for statistical significance at the 0.05 level. We followed the sample guidelines outlined by OECD and marked the results as not meeting the sample size criterion in cases when the number of cases was fewer than 62 cases.

⁶⁸ IALS was implemented between 1994 and 1998 and ALL was conducted between 2003 and 2008. PIAAC includes certain items from both earlier surveys to allow for analysis over time.

took the computer tests, while others either took a paper-and-pencil test (15 percent) or were excluded altogether because of language difficulties or learning disabilities (4 percent) or for other reasons (1 percent).

Some immigrant-origin adults were likely excluded due to language difficulties. The *background questionnaire* was typically administered in the home language of the participating countries, although it was offered in additional languages in some countries. In the United States the background questionnaire was offered in both English and Spanish; it was offered in English and French in Canada. However, by and large all proficiency assessments of literacy and numeracy were carried out in the country's official language or languages.⁶⁹ Of the five study countries, the *assessment* was done in two languages (English and French) only in Canada. Because the background questionnaire was offered in a limited number of foreign languages and assessments were conducted only in the official language, it is likely that some immigrant-origin populations were excluded from the PIAAC at higher rates than native respondents.

B. Limitations of PIAAC Data for the Purposes of This Research

As the literature review above documents, educational and other outcomes of immigrant-origin young adults vary not only by host country, generation, and gender, but also by racial and ethnic origin. The PIAAC data do not⁷⁰ include information on the respondents' race, ethnicity, country of origin, or religious affiliation in all countries. Thus, we cannot determine cross-nationally whether the racial and ethnic make-up of young adults who are first, second, and third generation is similar. As a result, it is difficult to tell whether changes across generations signal the successful integration of groups or the differing composition of generational groups.

Another limitation of PIAAC data has to do with the limited information provided on the respondent's host country language proficiency. While the PIAAC's background questionnaire asks respondents about whether they speak the host country's (PIAAC test) language at home, we do not know how proficient they are in that language.⁷¹ Young adults might speak a language other than the host country's with their families at home, yet have no difficulties communicating or studying in the host country language.

Finally, we are confident that the PIAAC's sample is large enough to produce reliable estimates of the characteristics and skills of the 16-34 population by generation overall. However, some important questions cannot be addressed with the available sample. For example, an analysis of literacy and numeracy by educational attainment *and* generation among the 16-24 youth and 25-34 young adults could not produce statistically significant results. Despite these limitations inherent in any ambitious and large-scale data collection effort, PIAAC data allow for the development of rich profiles of the young adult population by generation—the topic of the next section.

⁶⁹ According to OECD, in some countries (but not in our five study countries), the assessment was also carried out in “widely spoken minority or regional languages.” See *OECD Skills Outlook 2013* (p. 26).

⁷⁰ Questions on race/ethnicity were included in the U.S. national data collection. However, no comparable data from other countries were collected.

⁷¹ It has to be noted that the restricted-use license data for the United States include a series of questions about self-reported English proficiency (speaking, writing, reading, and understanding) but this information is not available for other countries.

IV. A Socioeconomic Profile of Young Adults by Generation

One of the main challenges cited by researchers who examine the educational and economic outcomes of immigrant-origin children and youth across countries is the lack of consistent definitions in national datasets of the first, second, and higher generations.⁷² PIAAC data remedy this problem by asking all respondents if they were born outside of the study country (here defined as the first generation), or if born in the study country, whether their parent or parents were born abroad (here defined as the second generation). The remaining respondents represent the third generation as they were born in the study country to two parents who were also born there. Using PIAAC data we can estimate the size of the total young adult (16-34) populations in the study countries as well as the share by generation. Thus, PIAAC represents a major contribution to our demographic understanding of the distribution of the immigrant-origin population by generation across most participating countries.

A. Size and Shares

Canada has the largest share of both first- and second-generation millennial populations, together accounting for 41 percent of the 8.7 million young Canadians (see Table 2). The United Kingdom has the second largest share of the first generation among its young adults (17 percent); France's proportion of the second generation (18 percent) is nearly the same as Canada. The United States has the largest absolute number of immigrant-origin young adults (20.2 million) and their share of all young Americans (28 percent) is the same as Germany (27 percent).

The shares all youth who are members of the first versus the second generation are higher in Canada and the U.K. In the U.S. and in France, the second generation's share of all millennials is higher. The United States experienced a generational switch in 2010 when a decline in inflow of younger immigrants occurred at the same time as a growing number of the second-generation children aged into the 16-26 population.⁷³

Table 2. Young Adults (ages 16 to 34) by Generation and Country of Residence

	Canada	France	Germany	United Kingdom	United States
Estimate	8,674,000	14,302,000	17,660,000	13,293,000	74,569,000
<i>By generation (%)</i>					
1st generation	22	9	14	17	13
2nd generation	19	18	13	12	15
3rd or higher generation	59	74	73	70	73

Note: Percentages may not add to 100 due to rounding.

Source: Migration Policy Institute (MPI) analysis of 2012 PIAAC data.

Research demonstrates that the age at which immigrants arrive in the host country has a significant impact on their linguistic, educational, and economic integration.⁷⁴ All things being

⁷² Mary C. Waters, "Defining Difference: the Role of Immigrant Generation and Race in American and British Immigration Studies," *Ethnic and Racial Studies*, 37 no. 1 (2014):10-26.

⁷³ Batalova and Fix, *Up for Grabs?*

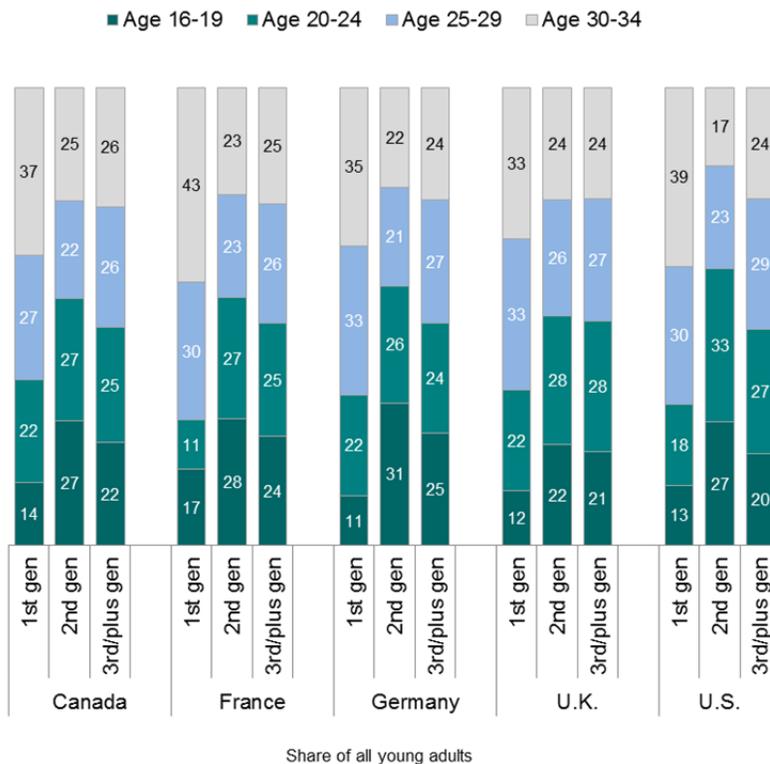
⁷⁴ Rubén Rumbaut, "The Crucible within: Ethnic Identity, Self-Esteem, and Segmented Assimilation among Children of Immigrants." *International Migration Review*, 28 (1994): 748-94; OECD, *Indicators of Immigrant Integration*.

equal, immigrants who arrive as children do better than those who arrive as adults, and the younger they are at time of immigration, the smoother their adaptation into a new country.⁷⁵ We find that 45 percent of Canadian immigrants and 48 percent of French immigrant young adults arrived before age 16. A smaller share of immigrants in the United States (39 percent) arrived as children. Of the four⁷⁶ study countries with data, the U.K. has the lowest share of childhood arrivals (22 percent) with 78 percent of its immigrant young adults arriving after they turned 16.

B. Age

Figure 1 shows that the three generations vary in their age composition across the five study countries. The share of youth (16-19) who are likely to be still in school and to start looking for temporary or permanent jobs is 2-3 times higher among the second generation than among the first in all countries.

Figure 1. Percent Young Adults by Age Group, Generation, and Country of Residence



Share of all young adults

Source: MPI analysis of 2012 PIAAC data.

It is also higher than the third generation in all cases, except for the U.K. Similarly, the share of young adults between 20 and 24 who are college-going age and in the beginning of their labor market careers is higher among the second and third generations. In contrast, the first generation is much more likely to be composed of older-age young adults. These differences

⁷⁵ Anthony Heath and Elina Kilpi-Jakonen, “Immigrant Children’s Age at Arrival and Assessment Results”, *OECD Education Working Papers*, No. 75, (OECD Publishing, 2012), <http://dx.doi.org/10.1787/5k993zsz6g7h-en>.

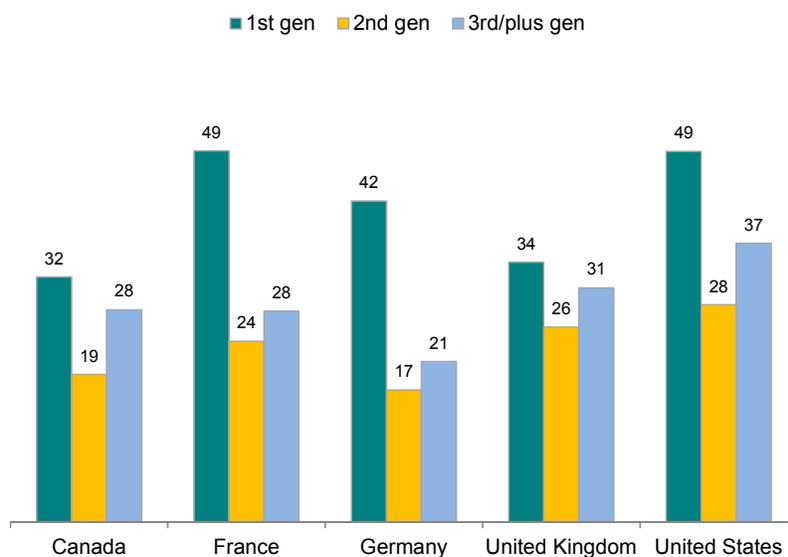
⁷⁶ Here we used PIAAC variable *J_Q04cl_C*, a categorical variable showing respondents’ age at migration if relevant. This variable has no valid values for Germany.

mean that the majority of young adults in the second (and third) generations can be reached by secondary and postsecondary education programs. Strategies aimed at the first generation should focus more on the workplace.

C. Parental Status

Parental status is an important marker of adulthood with far reaching social and economic implications for the life opportunities of young parents and their children. Keeping in mind that the first generation is older than the second and the third generations, it is not surprising that they were much more likely to be parents (see Figure 2).

Figure 2. Percent Young Adults who Are Parents by Generation and Country of Residence



Source: MPI analysis of 2012 PIAAC data.

Close to half of the first generation in France and the United States have at least one child, as do 42 percent of their counterparts in Germany.⁷⁷ In comparison, immigrants in the U.K. and Canada are less likely to be parents (32-34 percent). Among the second generation, less than 20 percent of young adults in Germany and Canada, compared to 28 percent of young adults in the U.S. have children of their own.

The economic success of these parents is highly correlated with their skills and education and will have intergenerational implications. A U.S. study showed that young adults who grew up in poor families were almost eight times less likely to earn a college degree than their counterparts from high-income families, highlighting the fact that disadvantages experienced in childhood are likely to shape adulthood.⁷⁸ Parents also have harder time combining family care with education and skills development.

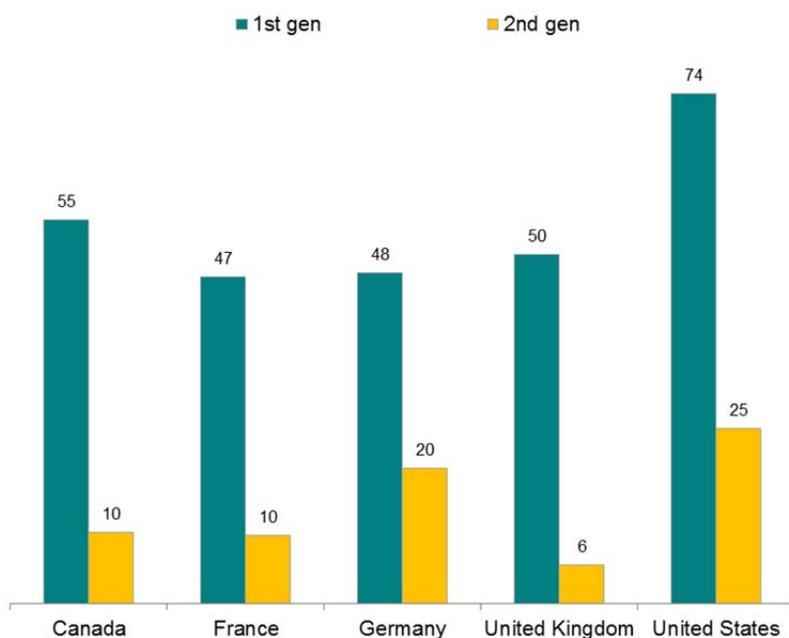
⁷⁷ Here we used *J_Q03a*, a dichotomous variable that describes whether respondents reported having own or adopted children.

⁷⁸ Irwin Kirsch, "PIAAC: Overview and Selected Results," presentation to PIAAC Expert Group, Educational Testing Service, Washington, DC, August 14, 2014.

D. Language Spoken at Home

One of the most studied—and debated—aspects of language integration is whether immigrant-origin children who grow up in families in which their parents' home country languages are spoken eventually become fully fluent in the host country's language. PIAAC literacy and numeracy assessments were conducted in the respective country's official languages: English in the United Kingdom, the United States, and Canada; French in France and also in Canada; and German in Germany. Figure 3 shows how different the first and second generations are in terms of their use of the host country's language at home.⁷⁹

Figure 3. Share of the First- and Second-Generation Young Adults Who Do Not Speak the PIAAC Test Language at Home by Generation and Country of Residence



Source: MPI analysis of 2012 PIAAC data.

The United States stands out as having the highest shares among both the first- and second-generation young adults who do not speak English at home: 74 percent and 25 percent, respectively. About half of immigrants in the other four countries do not use their host country's language to communicate at home.

Among the second generation, the shares of adults who do not speak the respective country's languages at home are much smaller: Only 6 percent of those in the U.K. and 10 percent of the second-generation in Canada and France do not speak English or French at home.

The fact that PIAAC immigrant-origin respondents speak a foreign language at home does not necessarily imply that their proficiency in the host country's language is low. Nonetheless, PIAAC data suggest that a substantial share of the first generation may need support in learning

⁷⁹ Here we used *homlang*, a dichotomous variable that describes whether PIAAC test language was the same as language spoken most often at respondents' home. *Homlang* was created by OECD based on respondents' answers to a series of language-related questions.

the host country's language. In a later section, we will explore the relationship between the languages spoken at home and young adults' literacy skills.

E. Early School Leaving among Youth Ages 16-24

Educational outcomes achieved by youth and young adults contribute to success in the labor market regardless of their immigrant origin. For immigrant-origin youth and young adults, levels of educational attainment, enrollment, and aspirations represent important markers of progress in social integration and access to social institutions such as secondary and post-secondary education. Research finds⁸⁰ that youth in the U.S. who left school before graduation struggled to find stable employment and had lower wages than high school graduates. How many youth stumble on their educational path in our study countries? PIAAC allows us to examine the share of youth who left school without completing upper secondary education, referred to as early school leavers.⁸¹

In terms of absolute numbers of early school leavers, of the 60 million youth between ages 16 and 24 in our five study countries, almost 5 million (or 8 percent) leave school early. Across the five study countries (see Figure 4), Canadian youth are the least likely leave school early: 3 percent of the first generation, by far the lowest share of all study groups, and 6-7 percent of the second and third generations. We find the greatest intergenerational gains (from the first to the second generation) among youth in the United States⁸². The rates of early school leaving among the second generation are slightly higher (although not statistically different) than those of the first generation in Germany and the U.K.

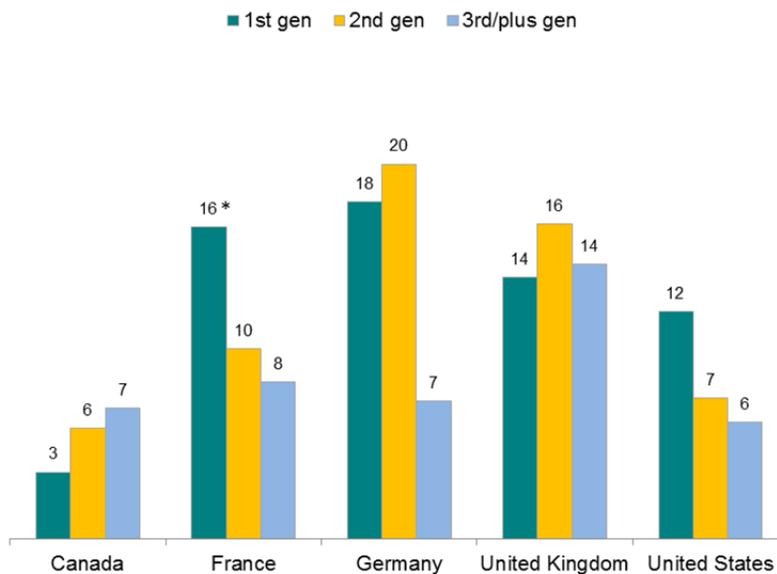
The United Kingdom stands out as having the highest share of early school leavers among its third generation, 14 percent—nearly twice as high as other countries (6-8 percent). Germany's high proportion of school leavers among the immigrant-origin population is striking: 18 percent of the first generation and 20 percent of the second generation have left school.

⁸⁰ Catherine Bradshaw, Lindsey O'Brennan and Clea McNeely, "Core Competencies and the Prevention of School Failure and Early School Leaving" in *Core Competencies to Prevent Problem Behaviors and Promote Positive Youth Development, New Directions for Child and Adolescent Development*, eds. Nancy Guerra and Catherine Bradshaw, 122 (2008): 19-32.

⁸¹ This analysis is based on PIAAC-derived variable *leaver1624* described as youth aged 16 to 24 who were not in education and who did not complete Level 3 under the International Standard Classification of Education (ISCED). In the U.S. context, ISCED level 3 refers to a GED or high school equivalency program; in Germany this level ranges from specialized vocational schools to upper secondary schools, whereas ISCED 2 includes some pre-vocational training, but not vocation training. For more detail, see the ISCED levels by country: <http://www.uis.unesco.org/Education/ISCEDMappings/Pages/default.aspx>.

⁸² The data for the first-generation young adults.

Figure 4. Share of Early School Leavers among Youth (ages 16-24) by Generation and Country of Residence



Note: *Does not meet the sample size criteria.
Source: MPI analysis of 2012 PIAAC data.

F. Educational Attainment of Young Adults Ages 25 to 34

*Young Adults with Less than High School.*⁸³ Figure 5 shows the educational attainment of young adults between ages 25 and 34 who have presumably had the chance to finish their schooling and are now likely to be in the labor force. The share of young working-age adults with less than a high school education falls sharply between the first and second generations in France, Germany, and the United States. The shares of second- and third-generation adults without a high schools degree are low (less than 10 percent) in Germany and the United States.⁸⁴

Of all countries, Canada’s young adults—regardless of generation—are the least likely to be low educated. The Canadian second generation fares even better than the third (only 5 percent versus 9 percent are low educated). Seventeen percent of the U.K. third-generation adults have low education qualifications—the highest share of all countries; this finding is troubling especially when combined with the fact that a high proportion of U.K.-native 16-24 year olds leave school early (as shown in Figure 4).

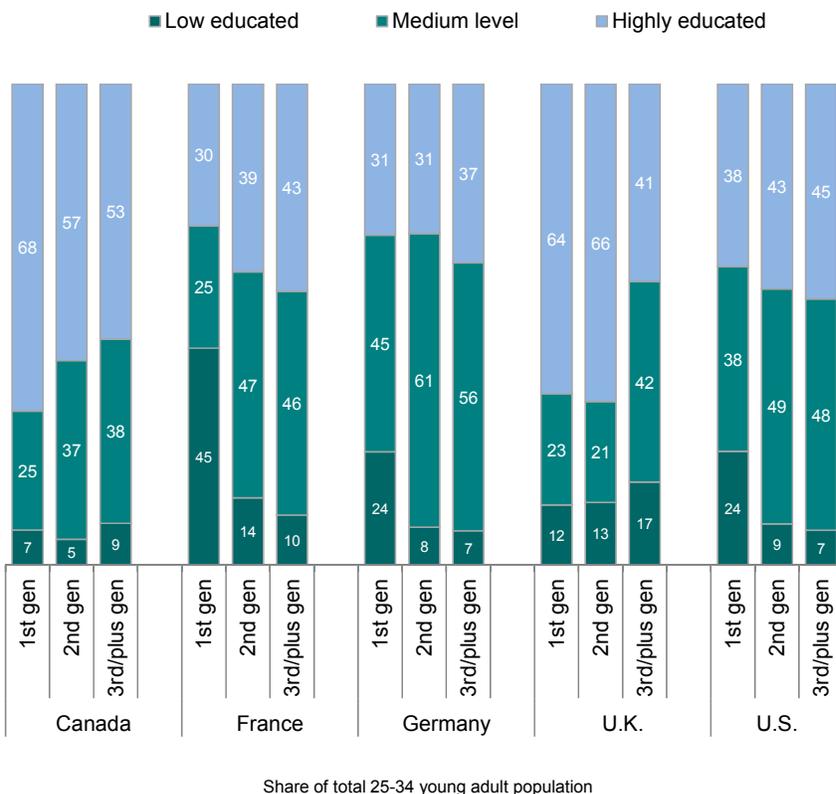
Young Adults with Tertiary Education. Owing in part to selection criteria that favor better-qualified immigrants, the shares of college-degree holders among immigrants in Canada and

⁸³ Here we used *EDCAT6*, a categorical variable based on respondents’ answers to a question about the highest level of formal education obtained. The classification of levels of education is based on the International Standard Classification of Education (ISCED). *Low-educated* adults are defined as adults with no more than a lower-secondary level of educated (ISCED groups 0-2); adults with a *medium level of education* refer to those who completed upper secondary school or post-secondary non-tertiary studies (ISCED groups 3-4); *highly educated* are adults who have tertiary education degrees (ISCED groups 5A-B or 6). For more detail, see the ISCED groups by country: <http://www.uis.unesco.org/Education/ISCEDMappings/Pages/default.aspx>.

⁸⁴ The differences in the share of low-educated among the second versus third generations in both countries are small but statistically significant.

the U.K. are much higher (more than 60 percent) than the other study countries (see Figure 5). The share of college graduates among the second generation remained high in the U.K. (66 percent), but declined in Canada (57 percent). By and large, the educational attainment of young adults in Canada, France, Germany, and the United States does not vary between the second and third generations. The U.K., however, is an exception: Third-generation adults are much less likely than their immigrant-origin counterparts to have tertiary education.

Figure 5. Educational Attainment* of Young Adults (Ages 25 to 34) by Generation and Country of Residence



Notes: *The classification of levels of education is based on the International Standard Classification of Education (ISCED). *Low-educated* adults are defined as adults with no more than a lower-secondary level of education (ISCED groups 0-2); adults with a *medium level of education* refer to those who completed upper secondary school or post-secondary non-tertiary studies (ISCED groups 3-4); *college educated* are adults who have tertiary education degrees (ISCED groups 5A-B or 6). For more detail, see the ISCED groups by country: <http://www.uis.unesco.org/Education/ISCEDMappings/Pages/default.aspx>.

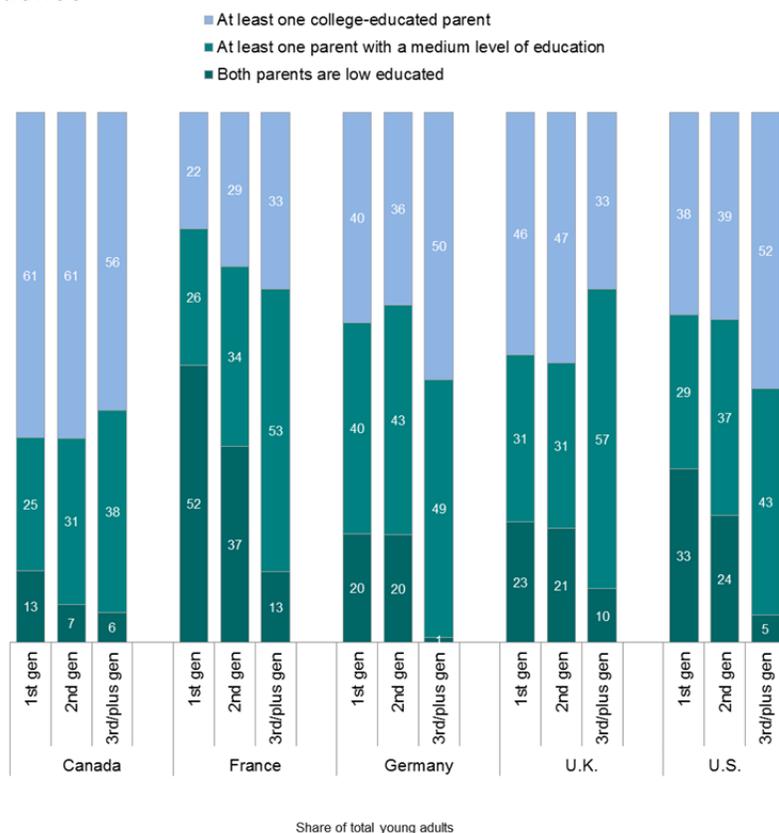
Source: MPI analysis of 2012 PIAAC data.

G. Parental Educational Attainment

PIAAC data allow us to examine not only respondents' own levels of formal education but also that of their parents (see Figure 6).⁸⁵

⁸⁵ Here we used *pared*, a variable that combines information about the levels of formal education of both parents.

Figure 6. Young Adults' Parental Educational Attainment* by Generation and Country of Residence



Notes: *See notes to Figure 5.
Source: MPI analysis of 2012 PIAAC data.

Immigrant-origin young adults in Canada and the U.K. are more likely to have at least one college-educated parent than those in other countries. In contrast, half of first-generation young adults and a third of the second generation in France have two parents with less than high school education.

Figure 6 highlights large cross-national and inter-generational differences in the levels of parental education, and with it the disparity in educational and economic resources that were available to young adults when they grew up. However, some intergenerational progress can be seen nonetheless. Even though a large share of the second generation in France (37 percent), Germany (20 percent), and the United States (24 percent) had parents with low formal education, smaller shares of the second generation lacked a high school degree and a significant share has college degrees.

V. Literacy and Numeracy Skills of the 16 to 34 Population

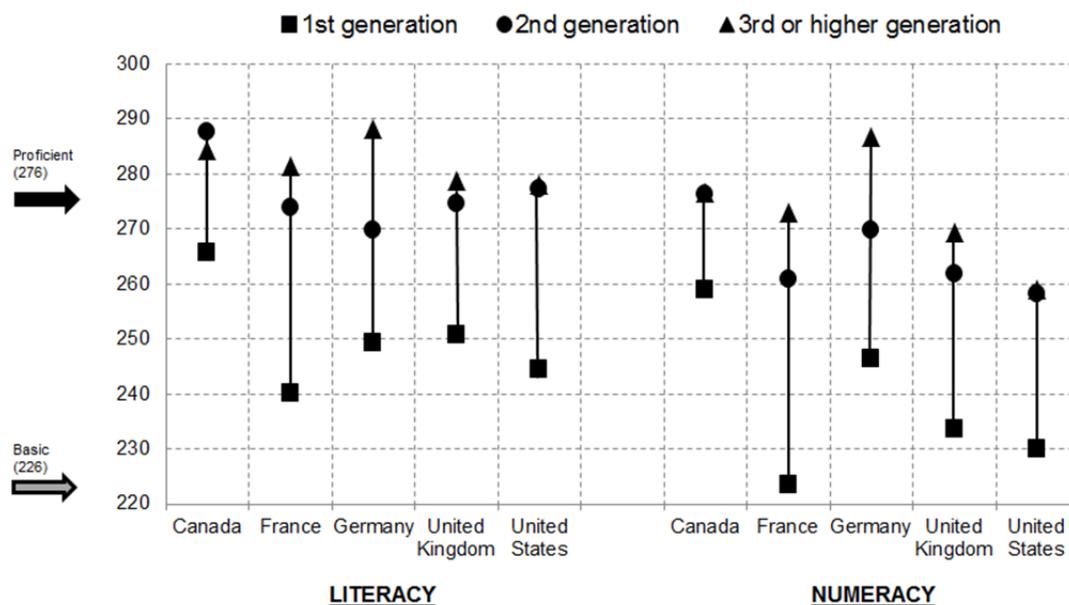
The ability to understand, evaluate, and use written information (literacy) and to process and communicate mathematical information (numeracy) are foundational to full participation in today's knowledge-based societies. Our earlier analyses found that the U.S. second

generation’s literacy and numeracy skills are much stronger than those of the first generation and are by and large similar to those of the third generation. This section examines how, and if, these competencies vary by generation in other immigrant destinations.

A. Literacy and Numeracy Averages

Literacy Skills. Across the five countries examined, immigrant adults’ literacy scores are lower than those of the other two generations and are much lower than the PIAAC-set proficiency level of 276 (see Figure 7, left panel). The first generation’s average scores are the weakest in France (240) and the United States (245). Literacy scores for the first generation in Canada and the U.K. are below the cut point for proficiency (276) despite the fact that nearly half of young immigrant adults in both Canada and the U.K. are college educated,

Figure 7. Average Literacy and Numeracy Scores by Generation and Country of Residence



Source: MPI analysis of 2012 PIAAC data.

We see substantial gains in literacy between the first and second generation—whose average scores are roughly equivalent to the third generation across all countries except Germany.⁸⁶ Only the Canadian second generation scored (288) comfortably above the proficient level; the second generation in the other four countries were close but did not reach it.

The second and third generation in the U.S. and the U.K. scored the lowest (of all countries) and barely above the proficiency level mark. In contrast, Germany’s third generation scored the highest (288) of almost all groups and well above the proficiency threshold.

Numeracy Skills. Earlier work using PIAAC clearly demonstrates that those with stronger math skills have higher participation rates in post-secondary education, have greater access to

⁸⁶ In Canada, the U.K., and the U.S., the gaps in average literacy scores between the second and third generation are small and statistically insignificant (the gap is small but statistically significant in France).

employer-supported work skills training, and earned higher wages.⁸⁷ Solid math and literacy skills are also found to be correlated with civic engagement and social trust.

Regardless of one's generation, young adults in all countries except Germany scored lower on numeracy than on literacy tests (see Figure 7, right panel). As with literacy, the second generation in Canada, France, the U.K, and the U.S. made great progress in their numeracy results relative to their first-generation counterparts and are either close (France and the U.K.) or similar (the U.S. and Canada) to their third-generation counterparts, but their numeracy averages remain below "proficient" (except in Canada). Thus despite generational mobility in the United States, the scores of second and third generation young adults fall below (by nearly 20 points) the proficiency cut point of 276. They are also lower than the third generation's scores in the four other countries.

B. Proficiency Levels in Literacy and Numeracy

We can also examine the PIAAC results in terms of the shares of young adults who lack proficiency (below Level 2), have only basic proficiency (Level 2), or reached full proficiency levels (Level 3 or higher) in literacy and numeracy skills.

Literacy Proficiency Levels. As with the literacy averages, every country sees intergenerational improvements, with the shares lacking basic literacy skills falling sharply from the first to the second generation (see Figure 8.1). Literacy proficiency levels of the second and third generations are similar in the U.S. and the U.K. Germany again stands out: The share of its second generation with low literacy skills is roughly double (17 percent) that of the third generation (9 percent). The third generation in France is also doing better than the second generation, although the gap is not as wide as in Germany.

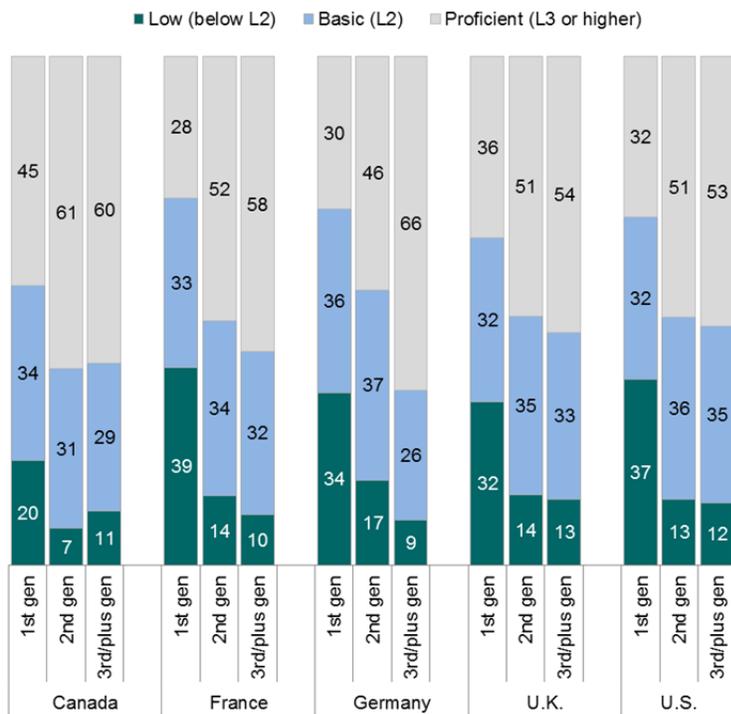
Two-thirds of Germany's third generation is proficient in literacy, the highest of all groups in the five study countries. The second and third generations in Canada are also high achievers: about 60 percent scored proficient on literacy. This share is roughly 10 percentage points lower among native groups in the U.K. and the U.S. (51-53 percent).

Proficiency Levels in Numeracy. As discussed earlier, the existing studies established a strong connection between adults' math skills and their economic outcomes such as future earnings. Figure 8.2 points to a number of troubling trends. Across the board, numeracy proficiency lags literacy (except in Germany). Half of young immigrants in France and 44 percent of immigrants in the U.K. and the U.S. lack basic math skills.

The shares of young adults with low numeracy skills decline between the first and second generations (in all countries) and then fall further between the second and third generations (for France, Germany, and the U.K.). However, it is still worrying that between 50 and 65 percent of young adults in the second and third generations have basic or low math skills in the countries that are some of the leading global economies.

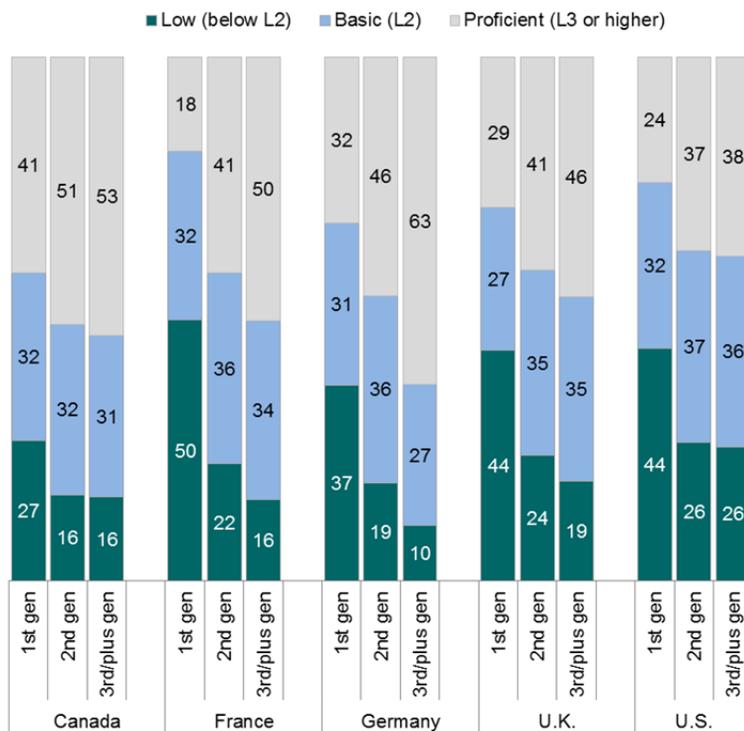
⁸⁷ Batalova and Fix, *Through an Immigrant Lens*; Holzer and Lerman, "Cognitive Skills in the U.S. Labor Market."

Figure 8.1. Proficiency Level in Literacy by Generation and Country of Residence



Source: MPI analysis of 2012 PIAAC data.

Figure 8.2. Proficiency Level in Numeracy by Generation and Country of Residence



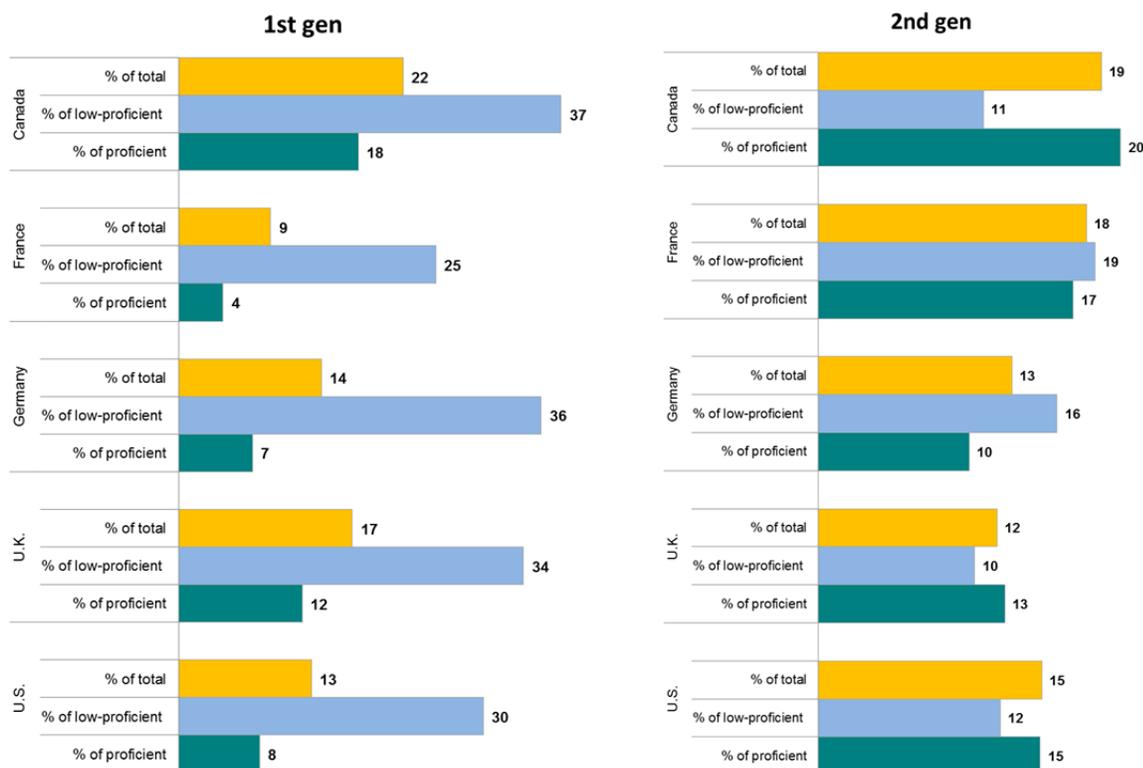
Source: MPI analysis of 2012 PIAAC data.

C. Skill Levels of the 16 to 34 Population by Generation and Country

We find that first-generation adults are substantially over-represented among those with low levels of literacy and generally are under-represented among those with proficient skills (see Figure 9, left panel). In particular, our analysis shows that of the 1 million young Canadians who struggled with literacy in English or French, 37 percent are born abroad (compared to their 22 percent share of all Canadian young adults). Of the 2.4 million young Germans with low levels of German literacy, 36 percent are immigrants. (Immigrants make up 14 percent of all young Germans).⁸⁸ The United States had the largest absolute number of young adults who lacked English literacy skills (11.5 million); immigrants account for 30 percent of these young adults (versus 13 percent of all young Americans).

The high share of immigrants among low-skilled adults in Canada and the U.K. is surprising given that half of immigrants (at least those who are 25-34) have at least a bachelor's degree. As our own and other research demonstrated, educational attainment does not always predict literacy or numeracy skills.⁸⁹

Figure 9. Share of the First- and Second-Generation Youth Adults by Generation and Country of Residence at Each Literacy Proficiency Level versus Their Share of the Total Young Adults



Note: Low proficient are adults who lack the basic skills in literacy (i.e., scored equivalent to or lower than Level 1); Proficient are adults who scored equivalent to or higher than Level 3.

Source: MPI analysis of 2012 PIAAC data.

⁸⁸ As mentioned earlier, both the share of immigrants and their skills level are likely to differ—higher proportion of immigrants and lower literacy and numeracy scores—following the arrivals of a large number of less educated migrants and asylum seekers.

⁸⁹ Batalova and Fix, *Through an Immigrant Lens*.

While immigrants are overrepresented among all adults in the five study countries with low literacy skills, the second generation is not. Along similar lines, the second generation’s representation among young adults who are proficient in literacy is roughly proportional to its share of the total population (see Figure 9, right panel). These positive findings point to a broad trend towards intergenerational educational mobility across the study countries. The only (statistically significant) exception is Germany, where the second generation is overrepresented among low-skilled adults and underrepresented among those who are highly proficient.

D. Additional Factors Mediating the Relationship between Generational Status and Skills

In addition to generational status, a variety of personal and host (and sending) countries’ characteristics are associated with educational and skills outcomes. The individual-level factors include age at immigration, ethnic origin, family socioeconomic background, parental education, respondents’ own education, and language barriers. In this section we describe the key findings that emerged from our multivariate regression models that tested how the relationship between literacy and numeracy and generation status was mediated by some of these individual-level variables in our study countries.

Our descriptive results (summarized in Table 3, see “no controls” columns) show that immigrant young adults did worse than their second-generation counterparts on both PIAAC assessments in each study country. In all cases, the differences were statistically significant. In contrast, the second generation’s averages did not differ (in terms of statistical significance) from the averages of their third-generation counterparts in Canada, the U.S., and the U.K. These differences were also smaller (though statistically significant) in France and Germany.

Table 3. Generational Differences in Average Literacy and Numeracy Scores with and without Controls for Demographic and Social Characteristics

PIAAC country	Generations compared	Difference in <u>literacy</u> average scores		Difference in <u>numeracy</u> average scores	
		no controls	with controls	no controls	with controls
Canada	1st vs 2nd	-22.1	-19.9	-17.2	-15.4
	3rd vs 2nd	-3.3	-3.1	<i>0.4</i>	<i>1.6</i>
France	1st vs 2nd	-33.8	-22.4	-37.4	-23.8
	3rd vs 2nd	7.4	2.6	12.0	5.5
Germany	1st vs 2nd	-20.4	-16.8	-23.3	-19.9
	3rd vs 2nd	18.3	5.3	16.8	2.8
U.K.	1st vs 2nd	-24.0	-15.5	-28.3	-19.8
	3rd vs 2nd	<i>4.1</i>	<i>5.6</i>	<i>7.4</i>	<i>10.0</i>
U.S.	1st vs 2nd	-32.9	-23.8	-28.3	-19.8
	3rd vs 2nd	<i>0.7</i>	<i>-9.1</i>	<i>0.7</i>	<i>-11.3</i>

Note: Estimates that are not statistically significant (at least at the 0.05 level) are shown in italics and in gray.

Source: MPI analysis of 2012 PIAAC data.

Multi-variate regression results (see Table 3, “with controls” columns) further inform these trends by examining the relationship between generational status and skills assuming that groups are “similar” on other characteristics such as person’s own and their parents’ education, age, gender, and whether they speak the host country language at home.

The performance gaps in literacy and numeracy between the first and second generations shrink considerably in the case of the U.S., the U.K, and France and decline somewhat in Canada and Germany once we take into account young adults’ sociodemographic characteristics. Notably, the large gaps we observed between the second and third generation in Germany (both on literacy and numeracy) and France (on literacy) become statistically insignificant. In the United States, the second-generation young adults appear to be doing even better than their third-generation counterparts on math (by 11 score points).

Our regression models (available upon request) also indicate that respondents’ own education has the strongest positive association with skills followed by parental education and whether respondents’ spoke the PIAAC test language at home. While these findings are not surprising given the well-documented relationship between educational background (both personal and family) and literacy and numeracy,⁹⁰ it is important to note the mediating effect these characteristics have on the relationship between generational status and skills: They explain the generational difference in the case of the second versus third generation adults in Germany and France, and help—though not fully—explain the generational gaps in the case of the first versus second generation in all countries. Further research is needed to identify the key explanatory factors for the low performance of immigrant young adults, especially in Canada and the U.K. that have large proportions of college-educated immigrants, many of whom nonetheless appear to have low literacy and numeracy skills.

VI. Conclusions

It is now broadly recognized that education and skills have become increasingly important for economic and social mobility. Skills are particularly important for today’s millennials—youth and young adults between ages 16 and 34—who will represent the lion’s share of the labor force in years to come. Among those millennials one particularly vulnerable group is immigrant-origin young adults: a population that is growing in size and diversity in both Europe and North America. Today, close to two in five young adults in Canada and more than a quarter of those in France, Germany, and the United States are of immigrant background.

The shift from an industrial to a knowledge-based economy coupled with new immigration raises questions about whether millennials from native and immigrant families are entering adulthood with the skills necessary to keep pace with workplace and social changes. In this report we address some of these questions. Using the 2012 PIAAC’s rich background questionnaire, we examine the demographic and human capital characteristics of young adults in Canada, France, Germany, the United Kingdom, and the United States. These five OECD countries represent some of the largest global economies and have a substantial number of immigrant-origin young adults. We also analyze young adults’ literacy and numeracy skills, taking advantage of PIAAC’s direct assessment of these skills. Here, PIAAC’s consistent definition of the first, second, and

⁹⁰ Karly Ford and Mark Umbricht, “Persisting Gaps: Labor market Outcomes and Numeracy Skill Levels of First Generation and Multi Generation College Graduates,” AIR-PIAAC Research Conference 2015, Arlington, VA, https://piaac.squarespace.com/s/03_Dec10_Ford_Umbricht-presentation-AIR.pdf.

third generations allowed us to make meaningful comparisons of young adults' characteristics and skills both across generations and across countries.

As in our earlier PIAAC work, we find that the **literacy and numeracy skills of first-generation young adults lag those of the third generation (our comparison group) and are below the OECD-set proficiency threshold at Level 3 (276 points on a 500-point scale)**. (OECD considers adults performing at Level 3 or higher to have the skills necessary⁹¹ to be successful in modern societies). Immigrants' scores are below this cut point by 36 points in France, 30 points in the United States, and 25 points in the U.K.

Immigrants are over-represented among low-skilled young adults: Roughly a third of all young adults in Canada, Germany, the U.K., and the U.S. who lack basic literacy skills were born abroad: a significantly larger share than they represent of the overall youth population. This outcome is in some ways unsurprising given that the literacy test was conducted in the host countries' languages and thus immigrants might be disadvantaged by the test design. Our profiles show that 30-50 percent of young immigrant adults are parents, many with low levels of education. These first-generation adults are somewhat older than second- or third-generation youth and thus are likely to already be in the workforce. Put differently, as parents they need literacy and communications skills to follow their children's progress and help them to succeed in school. As workers, they need skills—and in particular numeracy skills—to be productive.

In all countries except Germany, the second generation's literacy and numeracy scores were roughly comparable to those of the third generation, pointing to substantial skills gains across generations. Unlike their first-generation immigrant counterparts, the second generation was *not* overrepresented among low-performing adults relative to their share of the overall young adult population. And the second generation was proportionately represented among high-scoring adults. (Here again, Germany is an exception to these trends.)

The second generation is younger than the first generation. Most of the second generation are still in school and could be reached by secondary and postsecondary education programs. Strategies aimed at the first generation should focus more on the workplace. Importantly, we find that the **shares of early school leavers among 16-24 year olds in the second generation are no higher than those of their third-generation counterparts within the study countries** (with exception of Germany).

As our literature review demonstrates, the five study countries differ significantly in the composition of their immigrant-origin populations, their history of immigration and of newcomers' reception. The countries also differ in their economic and educational infrastructure. These individual and host country-level characteristics influence the speed and nature of integration for immigrants and their children. Our analyses highlight **important country similarities and differences**:

France and the United States are similar on a number of accounts despite having very different approaches to integration policy such as their openness to teaching students in their mother tongue. The two countries have the widest gaps in both literacy and numeracy between the first and third generations. The fact that the second generation's scores are either similar (the U.S.) or only slightly lower (France) than those of the third also meant that **the U.S. and French second generation made the greatest improvement in performance across generation**. It has to be noted, however, that the **overall scores of millennials in these**

⁹¹ OECD, *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*.

countries only reached the OECD-set level of proficiency on literacy and were lower on numeracy.

Young adults from native families in Germany have the strongest literacy and math skills among the study countries. Regardless of one's generation young adults in Germany scored at similar levels on both PIAAC's literacy and numeracy tests. By contrast, literacy scores are uniformly higher than numeracy scores in the other four countries. **While the second generation improved its skills compared to the first in Germany, the gaps between the second and third generations appear to be large.** Our regression analysis shows, however, that second generation's low performance (compared to native Germans) is mostly explained by the low levels of educational attainment of these young adults and of their parents—highlighting the critical importance of education for young adults' social and economic mobility. The lagging outcomes of the second generation raise concerns of whether Germany's education system, which tracks students into vocational versus academic programs as early as the fourth grade, adequately serves the needs of immigrant-origin children.

The United Kingdom faces its own challenges. While the performance of the third generation may represent a German success story, the same cannot be said for the U.K. We find that the **third-generation youth in the U.K. are twice as likely to leave school prior to graduation (14 percent) compared to their peers in the other four countries (6-7 percent).** Among 25-34 year olds, **the U.K.'s third generation is much less likely to be college graduates (30 percent) than either the first or second generation (about 50 percent).** The picture improved in terms of literacy and numeracy results: The third generation's literacy is at about OECD proficiency level, though somewhat lower on numeracy. By contrast, immigrant young adults—who possess high levels of educational attainment thanks to the country's admission policies that prioritize skills and education—had low scores on both literacy and numeracy. **This conjunction of immigrants' high educational levels and low literacy and numeracy skills sets the U.K.** apart from all other countries surveyed, and may point to a need to better match highly educated immigrants with the country's labor markets.

PIAAC results for Canada also stood out. **In Canada, both literacy and numeracy scores across generations are higher and the first-to-third generation gaps are smaller than in the other countries.** The second- and third-generation young Canadians scored either *above* (on literacy) or *at* proficiency level (on numeracy). While it is likely that these results would vary if we could disaggregate scores by race and ethnicity and other factors as reported elsewhere in the Canadian literature, nonetheless, Canada seems closer than other countries to having developed both effective integration and skills policies.

Implications for Future PIAAC. The rich PIAAC data help us to fill critical knowledge gaps about the competencies of young adults of immigrant background in countries with different immigration histories, labor market structures, and educational systems. Thinking about future waves of PIAAC, we should note that some of our questions are not fully answerable because of the insufficient sample size or the fact that information was not collected by PIAAC. A few examples that our analysis of PIAAC data highlights:

- In our earlier PIAAC study, we found wide variations in literacy and numeracy skills by race and ethnicity and immigrant status among the U.S. adults. For instance, immigrants from Latin America had much lower skill levels than those from Asia and Europe, who in turn, outperformed U.S.-born whites. Similarly, the U.S. and international research on children and young adults from immigrant families highlights the importance of one's origin in explaining gaps in educational and employment mobility. In this study we find that second-

generation Germans' skills do not catch up to the third generation. We also find that both the first and second generations in the U.K. lag behind the third, while there is intergenerational progress (from the first to the second) in France. Can groups' different origin composition explain the differences in skills? And to what degree relative to other factors? In its current version, the PIAAC does not collect information on respondents' race and ethnicity (the U.S. national data are a notable exception). Further, the background questionnaire does not include information on the respondents' own or parental country of origin or religious affiliation (the latter was also found⁹² to be a significant predictor of social mobility in Europe). As a result it is difficult to tell whether changes across generations signal the successful integration of groups or their different ethnic composition. We suggest that the OECD consider expanding the background questionnaire to include at least some measures of respondents' origin—either of their own race, ethnicity, or nationality or that of their parents.

- Our demographic profile shows that the second generation in all study countries is younger (i.e., has higher shares of the 16-24 age group) than their first-generation counterparts and, to a lesser degree, than their third-generation peers. Because second-generation young adults are more likely to be of school-going age, their educational attainment and enrollment status differ from other generations. The limited sample size of the 16-24 versus 25-34 populations made it difficult to analyze literacy and numeracy by generation and educational attainment.
- Another limitation of the PIAAC data has to do with the limited information provided on respondent's proficiency in host country language. (The U.S. national data are again a notable exception, which allowed us to examine the relationship between *directly* assessed literacy skills and *self-reported* English proficiency in our earlier work). In addition, information is not consistently available on the languages spoken in respondents' homes. Young adults' language diversity and proficiency in the host country's official languages are important subjects of inquiry both for research and policy purposes.

Some of these limitations may be overcome when the U.S. National Supplement becomes available. According to the National Center for Education Statistics, the national supplement data—collected in 2013 and 2014—amplifies the PIAAC survey with an additional 3,600 adults, increasing the sample size of young adults (16-34), unemployed adults (16-65), and older adults (66-74).⁹³ With a larger sample size of young adults of immigrant background, researchers will be in a better position to analyze data for policy research, at least in the case of the United States.

⁹² Laurence Lessard-Phillips, Rosita Fibbi, and Philippe Wanner, "Assessing the Labor Market Position and its Determinants for the Second Generation," in *The European Second Generation Compared: Does the Integration Context Matter?* eds. Maurice Cruil, Jens Schneider, and Frans Lelie (Amsterdam: Amsterdam University Press, 2012), http://www.tiesproject.eu/component/option%2ccom_docman/task%2cdoc_download/gid%2c528/Itemid%2c142/index.html.pdf.

⁹³ National Center for Education Statistics, *Frequently Asked Questions, What is the National Supplement?* <https://nces.ed.gov/surveys/piaac/faq.asp>.

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About the Authors

Jeanne Batalova is a Senior Policy Analyst at the Migration Policy Institute (MPI) and Manager of the MPI Data Hub, a one-stop, online resource that provides instant access to the latest facts, stats, and maps covering U.S. and global data on immigration and immigrant integration. She is also a Nonresident Fellow with Migration Policy Institute Europe.

Her areas of expertise include the impacts of immigrants on society and labor markets; social and economic mobility of first- and second-generation youth and young adults; and the policies and practices regulating immigration and integration of highly skilled workers and foreign students in the United States and other countries.

Her book, *Skilled Immigrant and Native Workers in the United States*, was published in 2006.

Dr. Batalova earned her PhD in sociology, with a specialization in demography, from the University of California-Irvine; an MBA from Roosevelt University; and bachelor of the arts in economics from the Academy of Economic Studies, Chisinau, Moldova.

Michael Fix is President of the Migration Policy Institute, a position he assumed in July 2014 after serving as CEO and Director of Studies. He joined MPI in 2005, and was previously Senior Vice President and Co-Director of MPI's National Center on Immigrant Integration Policy.

Mr. Fix's research focus is on immigrant integration and the education of immigrant children in the United States and Europe, as well as citizenship policy, immigrant children and families, the effect of welfare reform on immigrants, and the impact of immigrants on the U.S. labor force.

Prior to joining MPI, Mr. Fix was Director of Immigration Studies at the Urban Institute in Washington, DC, where his focus was on immigration and integration policy, race and the measurement of discrimination, and federalism.

Mr. Fix serves on the board of MPI Europe and is a Policy Fellow with IZA in Bonn, Germany. In December 2013, he was nominated to be a member of the National Research Council's Committee on the Integration of Immigrants into U.S. Society, which over its two-year life will examine what is known about the integration of immigrants in the United States and identify any major gaps in existing knowledge on this topic.

Previously, he served on the National Academy of Sciences' Committee on the Redesign of U.S. Naturalization Tests and on the Committee on the Health and Adjustment of Immigrant Children. He also served as a member of the Advisory Panel to the Foundation for Child Development's Young Scholars Program. In 2005 he was appointed to the State of Illinois' New Americans Advisory Council, and in 2009 to the State of Maryland's Council for New Americans.

Mr. Fix received a JD from the University of Virginia and a bachelor of the arts degree from Princeton University. He did additional graduate work at the London School of Economics.