Variation in Educational Compositions of Immigration Flows by Development

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Abstract

Empirical evidence on the structure of immigration flows by education level is fundamental to monitoring the impact of human capital mobility. Most prior research on human capital and immigration uses migrant stock measures that fail to capture the timing of migration events and simplify education into a binary variable (college-educated or not, often summarized as high-skilled or low-skilled), as flow data by education level are not typically available. We explore detailed education-specific immigration flow estimates derived from the Integrated Public Use Microdata Series International (IPUMSI) repository. In total, we identify 1,945,762 individual international migrant records in 80 countries and 220 censuses that we aggregate to estimate country-level education proportions of immigration flows. Multinomial multilevel regression analyses are used to summarize the relationship of the educational shares of immigration flows with the HDI (Human Development Index) and components of HDI (including standard of living, health and education) in the receiving countries. We find that as development increases, a higher proportion of immigrants have completed secondary or university educations and lower proportions of immigrants with less than primary education. The rise in the share of educated migrants, as development levels in the receiving countries increase, occurs faster for female than male flows.

Background

Migration is becoming an ever more important component of population growth (Lee, 2011), a driver for socio-economic change (Dustmann, 2015; Ratha et al., 2011) and a topic for policy debate (Haas et al., 2018) in many countries. In recent decades the increasing selective immigrant policies implemented by governments to attract the brightest talent have been pursued, both in countries with long histories of migration and newer emerging destinations, to match the growing consensus that human capital is essential to economic development (Czaika & Parsons, 2017; Parsons et al., 2020). The impacts of high-skilled on origin countries have been much debated. Scholars have argued about the adverse negative effects of human capital loss often known as a brain drain process whereby the best and brightest leave their countries of birth upon the completion of their education (Beine et al., 2008; Docquier & Rapoport, 2012). Others have argued that some of the negative impacts of human capital loss are offset by multiple factors such as closer ties between developing origin countries and developed destination countries, remittances and the possibility of return migration in the long run (Chen et al., 2022; Stark, 2004).

Understanding the size and structure of migration flows by education level is fundamental to monitoring the impact of human capital mobility, including assessing the efficacy of immigration policies. However, previous studies on human capital

mobility, especially involving international migration usually simplify educational attainment as a binary variable (high- and low-skilled) based on whether migrants are college-educated or not, see for example Artuç et al., (2015) or Parsons et al., (2020). Data on international migration by more detailed education levels is scarce, as are studies looking at comparisons of internal migration flows by educational attainment across multiple countries.

Migration is an outcome of the interaction between multiple factors. One of the most prominent factors is the role of development, which is theorised to take an inverted U-shape for sending countries and a steadily increasing trend for receiving countries (de Haas, 2010; Skeldon, 2008). Development itself is a broad term, composed of multiple factors itself.Well-used development measures, such as the United Nationals Human Development Index (HDI) are composed of three measures; standard of living, health and access to education. The impact of these factors on migration patterns by education levels is relatively unexplored and hence it's unclear how development and its component parts are impacting migration flows at either migrants' origins (which impact out-migration), or destinations (which impact in-migration), alongside interaction factors which connect the two (such as distance).

To this end, this research aims to provide consistent findings on the educational composition of migration flows, using comparisons across multiple countries and time periods to enable a broader understanding of global migration patterns of human capital mobility.

Data

Our study exploits censuses data, based on samples provided to the Integrated Public Use Microdata Series (IPUMS) International. IPUMS provide harmonized census responses for hundreds of millions of individual responses. The educational attainment variable, of prime interest in our study, is provided with four categories; less than primary education, completed primary, completed secondary and completed university education. Harmonized variables that enable the detection of recent immigrants are also available in many IPUMS International census samples, alongside other basic demographic characteristics on age, sex and educational attainment. Typically, migration questions ask respondents for their previous country of residence at a fixed interval, such as one year or five years before the census night. Additional migration histories can also be obtained, without less detail on prior locations, from questions on their previous residential status, where typically response options range between residing in the same house, same region or abroad. When either migration measures are combined with the person weights provided by IPUMS International, the aggregated responses allow for the compilation of population-level migration flow estimates of both internal migration and international migration by previous region or country of residence and educational attainment.

In our initial data exploration, we were able to identify recent immigrants in 88 countries and 220 census samples from the IPUMS International repository alongside basic demographic characteristics (of age, sex and educational attainment) - see Figure 1. From these samples, we extracted, processed and then combined the data on over 440 million records (of which 1,945,762 were international migrants).

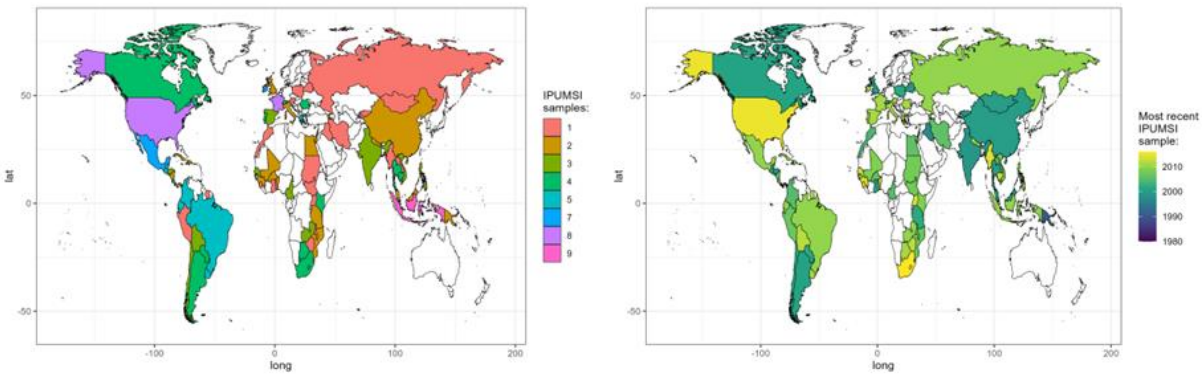

Figure 1 IPUMS International census samples used in our study (left) and year of most recent census used (right). Note: for multiple countries we use multiple census samples (from different census years)

Preliminary Findings

In our initial data exploration, we find a strong relationship between the share of immigrants and HDI, shown in Figure 2. The share of immigrants with less than primary education falls as the HDI of the destination country increases. The share of primarily educated immigrants has no clear pattern of change in relation to the HDI of the destination country. The share of secondary and university-completed immigrants both increase as the HDI of the destination country rises. Note, in Figure 1, each census sample appears in each education panel once. For a single census, four points sum to one across all four panels. Observations from the same census sample are plotted at the same location on the x-axis (as the development level in the country does not vary between the education groups) – where, for example, the observations on the furthest right-hand side in each panel all correspond to the Spain 2011 census, where the share of immigrants in each education group is 0.06, 0.30, 0.34 and 0.30 (from less than primary to university educated).

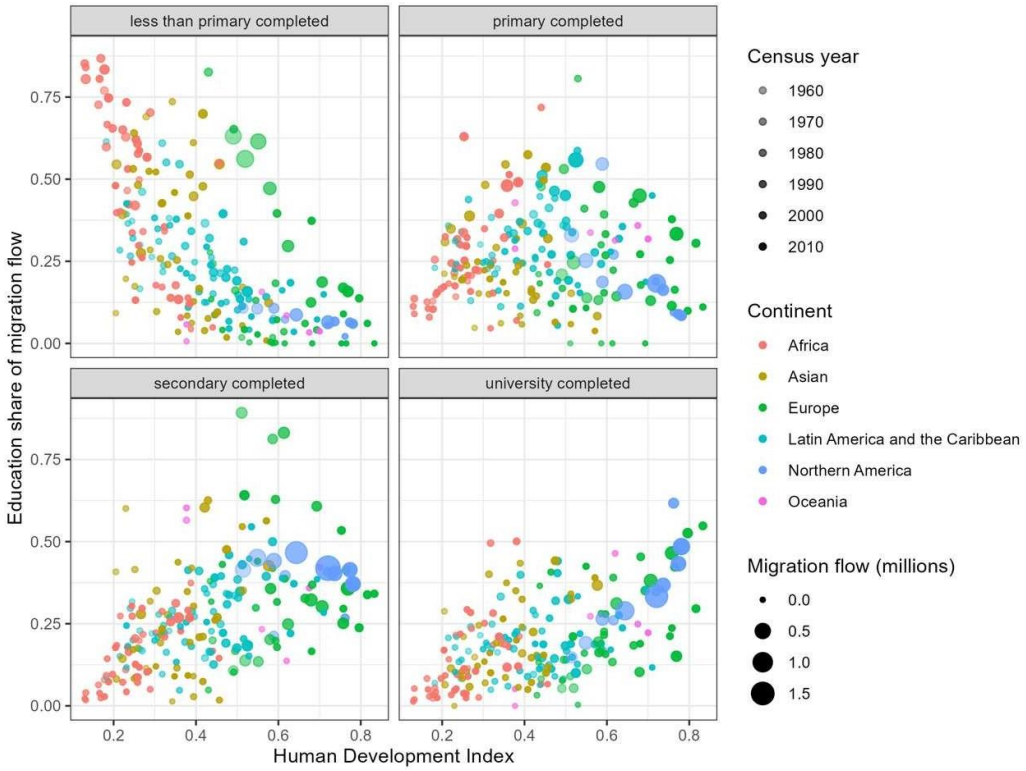

Figure 2 Educational shares of immigrant flows and HDI of destination, based on IPUMS International census samples

We fit a series of hierarchical multinomial regression models to summarise the changes in relative levels of immigration flows by education with HDI and the three components of development: economic productivity, health and human capital. Our response variable is the share of recent immigrants by their education attainment. We use control variables in each model for the population size in the destination country, the proportion of population foreign-born in the destination country, the duration intervals to identify migrants in the IPUMS International samples as well as the destination country categorical variable as a random intercept to capture remaining country-specific effects.

In our initial model, we find that as development increases in the destination country, the immigration flow composition becomes more educated – see Figure 3 for the predicted shares from our first regression based on HDI.

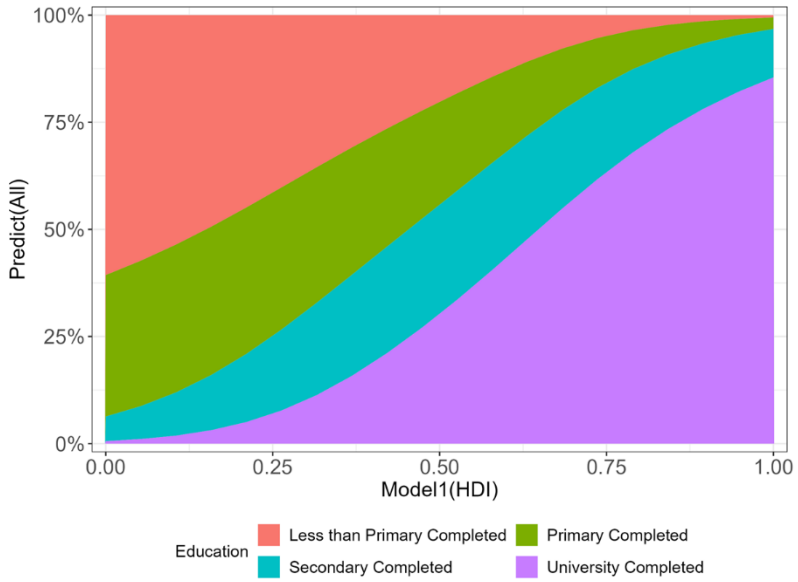

Figure 3 Predicted Immigration Flow Composition from Model 1

In our subsequent models, we find an increase in living standards in the destination country is associated with a higher share of immigration flows with less than primary and university completed. An increase in the health levels in destination countries is associated with moderate increases in the share of immigration flows with primary-, secondary-, and university-completed. Finally, we find, that an increase in education levels in the destination countries is associated with a higher share of immigration flows with secondary education and a moderate rise in the share of university-completed education attainment. The predicted plots from these three models are shown in Figure 4.

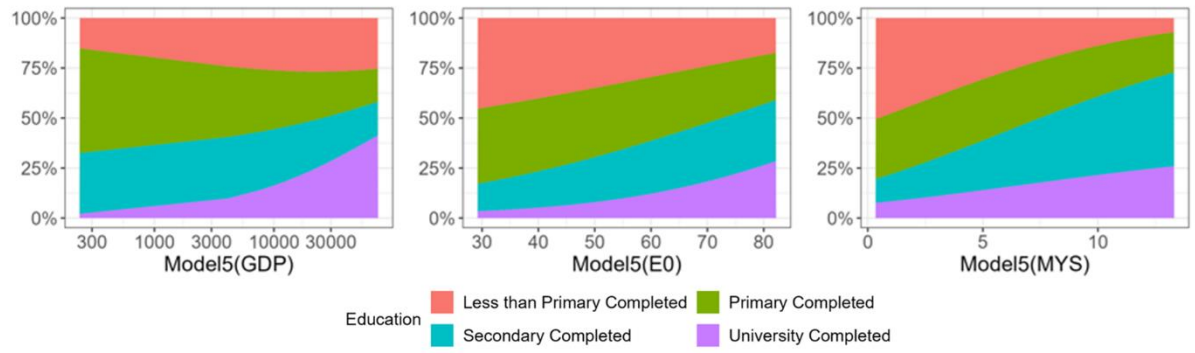

Figure 4: Predicted Immigration Flow Composition from Model 2-4

Future Work

We are currently refining our models for updated HDI data, including multiple factors to represent the education levels (other than just mean years of schooling that we currently use). We are also running separate analyses for males and females. Our initial findings suggest the rise in the share of educated migrants, as development levels in the receiving countries increase, occurs faster for female than male flows.

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