Descriptive Finding

**Educational selectivity of internal migrants:
A global assessment**

Aude Bernard

Martin Bell

Contents

Educational selectivity of internal migrants: A global assessment

Aude Bernard[1]

Martin Bell[2]

Abstract

BACKGROUND

It is well established that migrants are a selected group with respect to a number of characteristics, including education. However, the extent to which the degree of educational selectivity varies between countries remains unclear.

OBJECTIVE

We assess the educational selectivity of internal migrants for a global sample of 56 countries that represent over 65% of the world population.

METHODS

We fit binomial logistic regression to individual-level census data drawn from the Integrated Public Use Microdata Series-International (IPUMS). For each country, we regress migration against educational attainment and include a set of individual-level control variables and urban status of current place of residence. We report results for individual countries and estimate global and regional population-weighted means.

RESULTS

Globally, compared to individuals with no formal education, those with primary education are 1.7 times more likely to move, those with secondary education 2.9 times, and those with tertiary education 4.2 times. Once control variables are added, the effect of education decreases to 1.1, 1.2, and 2.3 times for primary, secondary, and tertiary education respectively. In all countries but Haiti tertiary education has a positive, statistically significant impact on migration, and in 80% of countries both secondary and tertiary education significantly increase the odds of migrating.

CONCLUSIONS

The results lend unequivocal support to the hypothesis that the likelihood to move increases with educational attainment while revealing significant variations between and within regions.

---

[1] University of Queensland, Brisbane, Australia. Email: a.bernard@uq.edu.au.
[2] University of Queensland, Brisbane, Australia. Email: martin.bell@uq.edu.au.

CONTRIBUTION
This study has uncovered a near universal empirical regularity in the effect of education on migration while revealing limited educational selectivity in Latin America. Variations in the degree of educational selectivity indicate that the effect of education on migration decision is subtle, varied, and specific to the national context and is not a function of the level of human development as originally anticipated.

1. Introduction

Migration is widely acknowledged to be integral to the process of human development. At an individual level, migration is essential to economic and social well-being by allowing individuals to pursue their goals and aspirations, including education. At the same time, education can facilitate migration by lowering the costs and barriers to moving and increasing economic returns – wages in particular – to migration. As a result, migrants tend to exhibit a high level of education compared with the general population (Borjas 1994; Massey et al. 1993). At the regional and national level, migration underpins the efficient functioning of the economy by bringing knowledge and skills to the locations where they are needed (Blanchard et al. 1992). The linkages between migration and education are therefore complex and multifaceted, as there are multiple channels through which migration and education can influence one another. Understanding the reciprocal relationship between migration and education, in particular the educational selectivity of migrants, is essential to ensure appropriate planning and policy response to shifts in the distribution of human capital at both origin and destination.

Migrant selectivity has long been recognised (Ravenstein 1885; Thomas 1938). Contemporary conceptual frameworks for thinking about the relationship between education and migration at an individual-level are strongly rooted in in economic theory and emphasise the role of economic motivation in migration decisions (Harris and Todaro 1970; Lucas 1997; Sjaastad 1962; Todaro 1969). There is a broad consensus that education increases employment opportunities and returns to wages and helps mitigate the risks and costs of moving. This is because highly educated people are more likely to be informed about employment opportunities and living conditions in other regions, have more sophisticated ways of estimating net migration gains (Greenwood 1975, 2014; Greenwood and Hunt 2003), rely on wider social networks (Palloni et al. 2001), and integrate economically more easily at destinations (Lall and Selod 2006). The decision to migrate is therefore viewed as a function of wage differentials at destination and origin, net costs of moving, and a set of individual characteristics

(Lucas 1997), including educational attainment, which is a primary determinant of internal migration, including from rural to urban areas in developing countries (World Bank 2009).

As countries develop and education expands – first in urban areas as cities provide greater educational opportunities (UNFPA 2007) – the degree of educational selectivity of migrants may evolve in two possible directions (Long 1973). Because of the expansion of education, individuals with little education may be trapped in areas with limited opportunities (Catney and Simpson 2010; Gould 1982). If their propensity to migrate declines while the migration rate of other groups remains unchanged or declines less, then the education–migration gradient will have increased. On the other hand, if it becomes increasingly difficult for less educated people to find employment, they may be out of work, and it is well established that unemployed individuals tend to show higher levels of internal migration (Greenwood 1997). Thus, if the propensity to migrate of the less educated increases while the rates for other groups remain unchanged or increase at a slower rate, the education–migration gradient will have diminished. According to these hypotheses, cross-national differences in the degree of educational selectivity of migration could be interpreted as reflecting differences in levels of human capital.

Empirical evidence remains, however, unclear. Existing studies point broadly to a positive effect of educational attainment on the likelihood to migrate both within and between countries (Cattaneo 2007; Feliciano 2005; Machin, Salvanes, and Pelkonen 2012; Malamud and Wozniak 2012; Williams 2009), including migration from rural to urban areas (Amuakwa-Mensah, Boakye-Yiadom, and Baah-Boateng 2016; Ginsburg et al. 2016). A few studies have reported a negative relationship between migration and education (Massey and Espinosa 1997; Quinn and Rubb 2005; Rendall and Parker 2014), while others have found no statistically significant association (Adams and Richard 1993; Curran and Rivero-Fuentes 2003). A comprehensive understanding of the links between migration and education has been severely constrained by limitations in the available data as well as in the scope of research. For the latter, one notable bias in recent studies has been a primary focus on international migration to the neglect of movements within individual countries. Because of data availability, most studies to date have focused on a single country or on multiple countries within the same region (Ginsburg et al. 2016; Machin, Salvanes, and Pelkonen 2012). While important progress has been made in recent years in the cross-country analysis of internal migration (Bell et al. 2015; Bernard, Bell, and Charles-Edwards 2014a, 2014b; Courgeau, Muhidin, and Bell 2013; Rees et al. 2017), migrant characteristics such as education have not been directly considered. As a result, it is unclear whether the educational selectivity of migration is conditioned by a country's level of human capital

or whether the more educated move more, even as the average level of educational attainment increases (White and Lindstrom 2005).

2. Data and methods

We address the question of the educational selectivity of working age migrants by drawing on individual-level census data from the Integrated Public Use Microdata Series-International (IPUMS) database maintained by the Minnesota Population Centre at the University of Minnesota (IPUMS 2017). At the time of writing, IPUMS held census micro sample files for 85 countries, of which 65 included migration data, and 55 of these recorded the urban status of the current place of residence.[3] For Turkey, data was drawn from the Demographic and Health Survey (Hacettepe University 2004). We focus primarily on data from the 2010 census round (2005–2014), but for countries that that did not collect internal migration data at their latest census, such as Argentina, we use data from their previous census. While this means that the data cited for some countries is not the most recent, this approach serves to improve cross-national comparability by comparing the educational selectivity of migrants in countries at different levels of development.

Our sample comprises 18 countries located in Africa, 15 in Asia, 7 in Europe and North America, and 16 in Latin America and the Caribbean, which together encompass over 90 million individual observations that represent more than 65% of the world population.

We have selected countries that measure migration either by comparing place of residence at two points in time (transition data) or by combining duration of residence in the current location with previous place of residence (duration data), which are directly comparable (Bell et al. 2015). While most countries collect migration over a five-year interval, six countries in our sample measure migration over a one-year interval (Canada, Italy, Poland, the United States, Tanzania, and Zimbabwe). In order to capture long-distance migration rather than residential mobility, we use migration between the largest administrative units in each country, which corresponds to states in Brazil, the United States, and Mexico; provinces in China, Mozambique, and Spain; and regions in Cameroon and Morocco. Transition data measure migrant characteristics at the end of the observation period, rather than at the time of migration, so it is not entirely clear whether observed levels of education are a cause or a consequence of migration. In the absence of a comparable longitudinal study for a global sample of

---

[3] Ten countries in IPUMS collect migration data but not urban status, namely Botswana, Cuba, Greece, Italy, Mongolia, Morocco, the Philippines, Spain, Switzerland, and Trinidad and Tobago. To ensure that the same control variables are included in regression analysis, we omitted these countries.

countries, this link cannot be clearly established. However, data on reasons for moving from a range of countries indicate that only a small proportion of long-distance moves among young adults are for educational purposes (UNESCO forthcoming). Thus, migration differentials between educational groups most likely reflect underlying differences in the propensity to migrate, which are a product of their educational status.

For each of the 56 countries in our sample, we fit a series of binomial logistic regressions to individual-level data and define migration as a binary outcome, that is, individuals have migrated or not during the observation period. In model 1, we regress migration against educational attainment classified into four levels – less than primary, primary, secondary, and tertiary education – based on the International Standard Classification of Education of six years of primary schooling, three years of lower secondary schooling, three years of higher secondary schooling, so that exit for secondary education occurs after 12 years of schooling (UNESCO 2011), as constructed in IPUMS. We use less than primary education as the reference category so that odds ratios for primary, secondary, and tertiary education are used as measures of educational selectivity, and we restrict the analysis to individuals aged 20 to 65 years at the time of census. In model 2, we add control variables identified in the literature as significant in shaping migration decisions, namely age, sex, marital status, labour force status, and urban status of current place of residence.

3. Results

Results from model 1 show that in 49 of the 56 countries (88%) all levels of education – primary, secondary, and tertiary – have a statistcally significant effect on the probability of migrating. In all countries, except Nicaragua and Haiti, secondary and tertiary education are statistically significant, and in every country in the sample at least one level of education is positively associated with migration. These results lend unequivocal support to the hypothesis that migration is selective with respect to educational attainment. After controlling for age, sex, marital and employment status, and urban status in model 2, the number of countries where the relationship with migration is statistically at all levels of educations is reduced to 42, but this still represents almost three-quarters of the sample. According to this model, there are seven countries in which primary education does not have a statistically significant impact on the likelihood to migrate: Brazil, Kyrgyzstan, Nepal, Slovenia, Turkey, the United States, and Uruguay. In six others – Armenia, Bolivia, Egypt, El Salvador, Jamaica, and Nicaragua – neither primary nor secondary education enhances the propensity to migrate, while in just three – the Dominican Republic, Eucador, and Mali – the relationship between tertiary education and migration is not statistically signficant.

We now examine the direction and degree of educational selecitvity by reporting regional and global means for both models. Figures 1a and 1b display population-weighted mean odds ratios for five broad world regions, with error bars representing standard deviations. Results from model 1 in Figure 1a shows that the likelihood of migrating increases significantly with the level of education in all world regions. Globally, compared to individuals with no formal education, those with primary education are 1.7 times more likely to move, those with secondary education 2.1 times, and those with tertiary education 4.2 times. The strength of this gradient is particularly pronounced in Asia and Africa, where individuals with tertiary education on average are about five times more likely to move than individuals with no formal education. The gradient moderates in Europe and North America, where individuals with tertiary education are 4.1 times more likely to migrate. The association is much weaker in Latin America, with a mean ratio of 1.4 for primary education, 1.8 for secondary education, and 2.0 for tertiary education. For all levels of education, standard deviations are smaller in Latin America than in other regions, indicating that the limited educational selectivity of migrants is characteristic of countries across the continent. In other regions, large standard deviations indicate sharper variations between countries in the degree of educational selectivity, particularly for tertiary education.
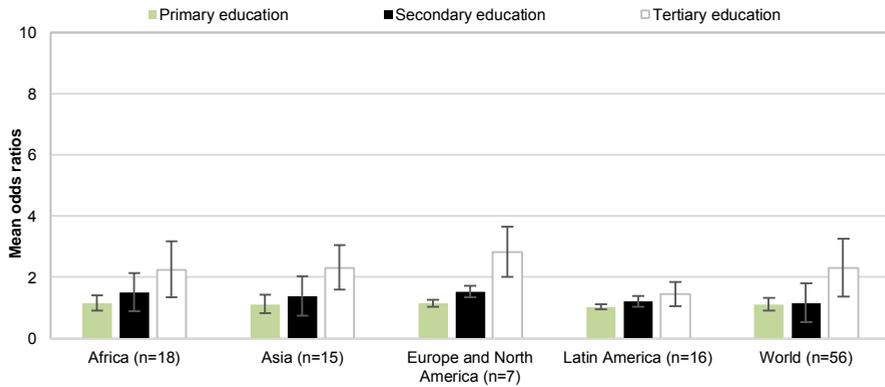
Figure 1a: Population-weighted mean odds ratios by world region (model 1)
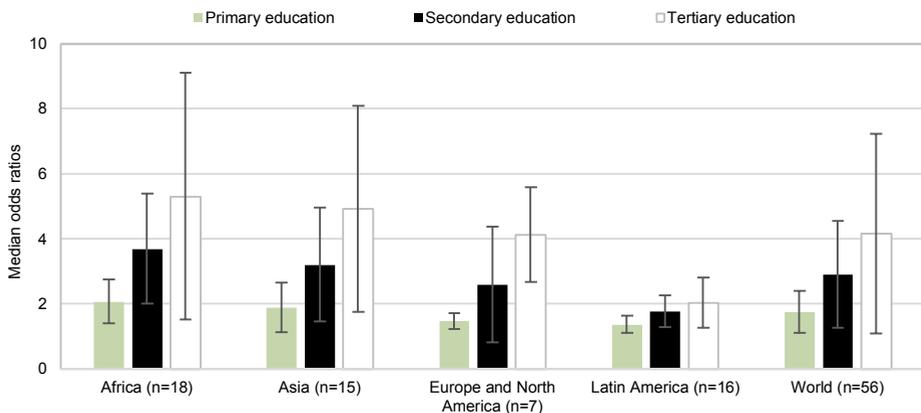
Note: Individuals with no formal education represents the reference category. Error bars represent the standard deviation from the regional mean.

The inclusion of control variables in model 2 lowers the odds ratios, as shown in Figure 1b, although they remain positive and incremental. Globally, mean odds ratios rise from 1.1 for primary education to 1.2 for secondary education and 2.3 for tertiary education. This reduction in ratios, compared with model 1, suggests that, except in the case of marital status, control variables are associated with both migration and education. Despite this, both models demonstrate that the probability of migration increases with education and reveal broadly similar regional patterns, in particular the lower degree of educational selectivity in Latin America. Also of note is that the impact of tertiary education is higher in Europe and North America relative to Asia and Africa once control variables are included. When comparing results between models at a country level, we find that when control factors are included the impact of primary education is on average 25% lower, 37% lower for secondary education, and 34% lower for tertiary education. A few countries, however, display higher odds ratios with model 2. This is the case in France, Poland, Romania, and Zambia for primary education; Zambia for secondary education; and Iraq, Nicaragua, and Poland for tertiary education. More importantly, the inclusion of control variables does not change the direction of the relationship between migration and education. The only exception is Haiti, where model 1 indicates a positive association between migration and primary and secondary education, while model 2 suggests a negative association at all levels of education. Notwithstanding this anomaly, there is a strong positive association between odds ratios from the two models, with Pearson correlation coefficients ranging from 0.60 for primary education to 0.70 for secondary education and 0.52 for tertiary education. Ordinal rankings deliver stronger correlation coefficients: 0.60 for primary education, 0.69 for secondary education, and 0.77 for tertiary education. We use model 2 in the remainder of this paper because a wide range of factors beyond education influence migration decisions.

Figure 1b: Population-weighted mean odds ratios by world region (model 2)

Note: Individuals with no formal education represents the reference category. Error bars represent the standard deviation from the regional mean.

To elucidate cross-national variations in the educational selectivity of migration, Figure 2 reports odds ratios for individual countries grouped into four quadrants by broad region. Care is needed when comparing regions because of the different scales for Europe and North America. The general pattern is one of a positive effect of education on migration. In the 42 countries where odds ratios are statistically significant, the likelihood of migrating increases progressively with each level of educational attainment in a broadly linear fashion. For example in Indonesia, primary education raises the likelihood of moving 1.5 times, secondary education 2.4 times, and tertiary education 3.6 times. In Kenya, the respective odds ratios are 1.8, 2.7, and 3.1, while in Chile the values are 1.2, 1.7, and 2.5. Only Thailand, Vietnam, and Zambia fail to show this linear rise. In the seven countries where primary education is not statistically significant, tertiary education has a higher impact on the odds of migrating than secondary education, confirming that the likelihood to migrate rises with the level of educational attainment, with Kyrgyzstan standing as the sole exception.

Figure 2:   Odds ratios for individual countries (model 2)
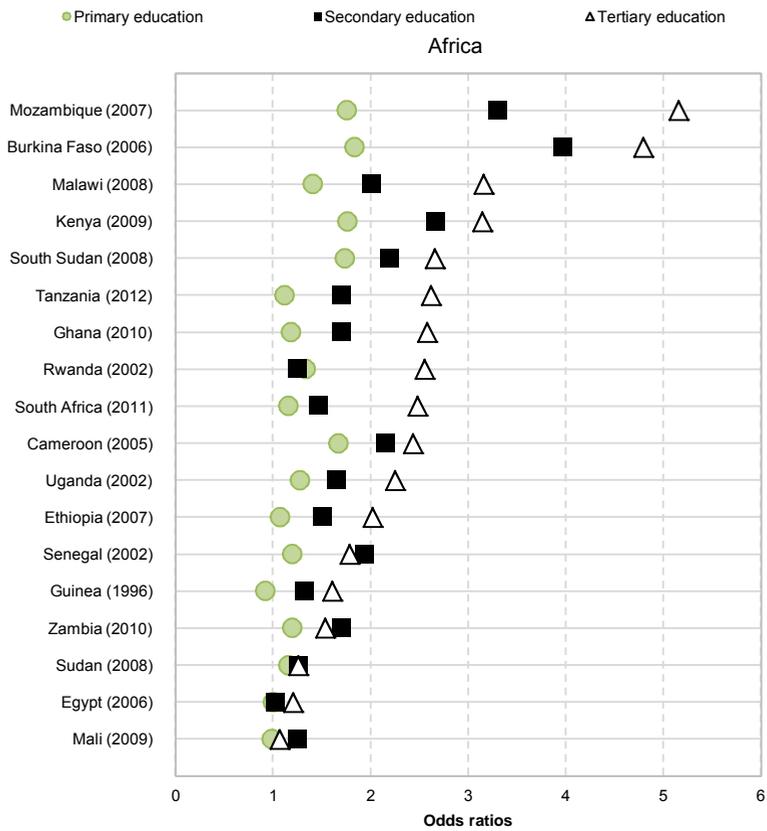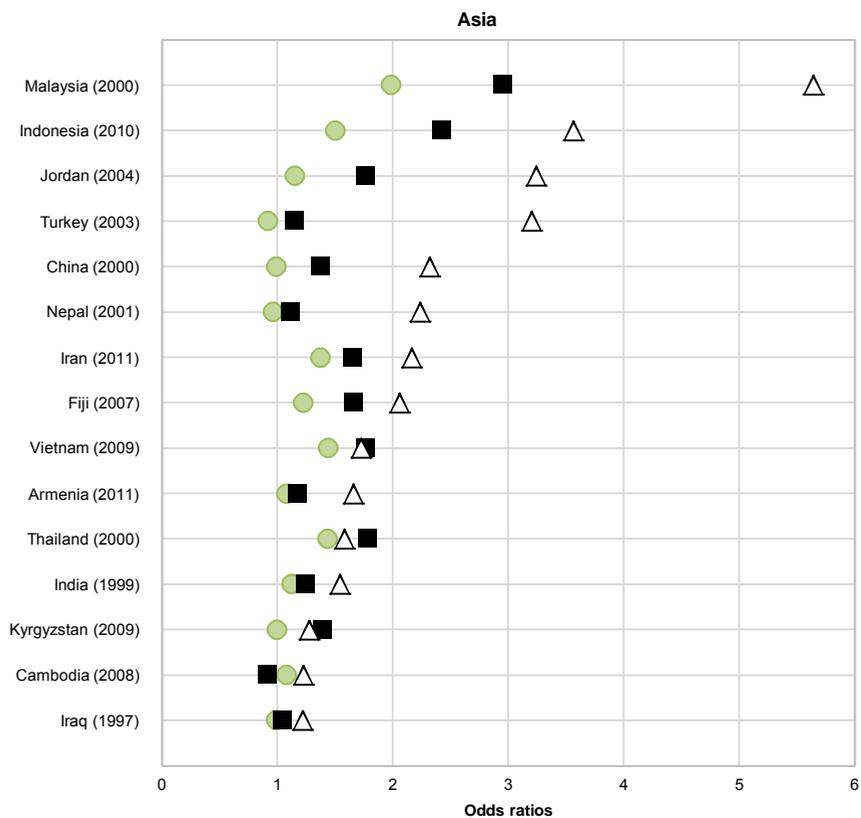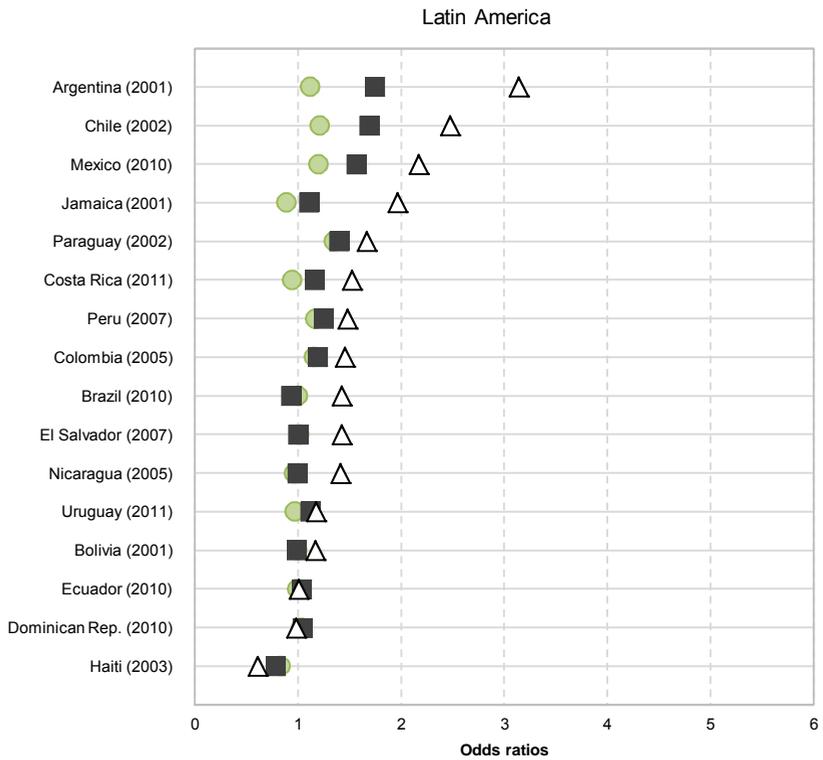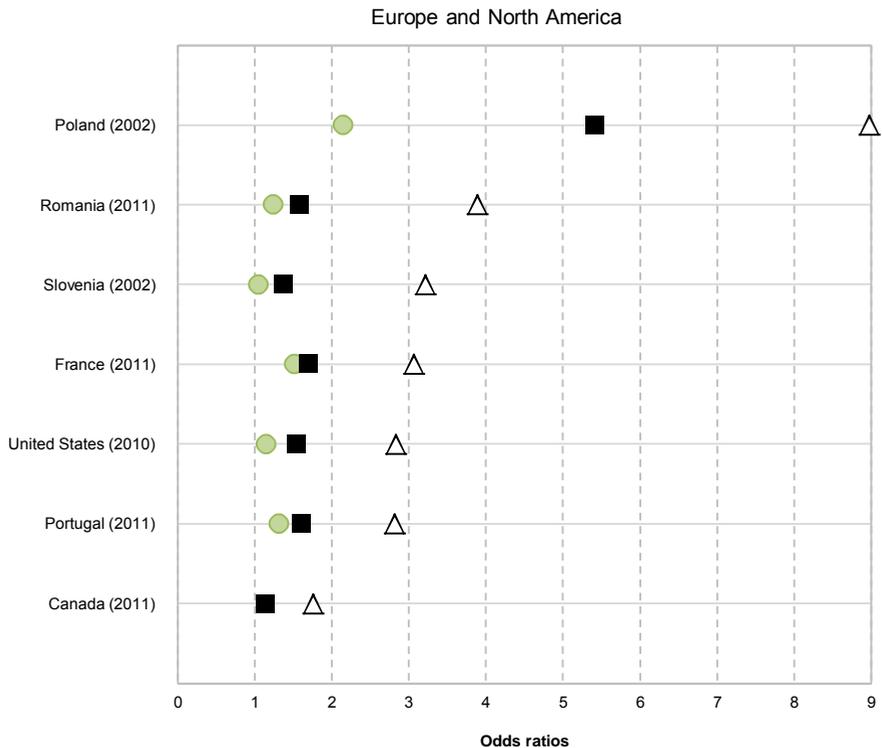
Figure 2: **(Continued)**

Figure 2: **(Continued)**

Latin America

Figure 2:   **(Continued)**

Europe and North America

Note: Individuals with no formal education represents the reference category. Within each region, countries are ranked in decreasing order of odds ratios for tertiary education. No individuals in the primary education category were reported in Canada.

Only six countries report a negative relationship between migration and education. Completion of primary education reduces the likelihood of migration in Guinea, China, and Costa Rica. This tendency is, however, reversed by completion of secondary and tertiary education, both of which have a positive effect in these countries. This broadly corresponds to the J-shaped curve anticipated by Gould (1982), where those with no education or only a few years of schooling have higher migration propensities than those with primary education. In Brazil and Cambodia secondary education has a negative impact, while in Haiti all levels of education reduce the likelihood of migrating. This effect is especially pronounced for tertiary education, which reduces the odds of migrating by nearly 40%.

These results provide unequivocal confirmation that the relationship between migration and education holds across the development spectrum. Odds ratios reveal a consistent increase in the likelihood of migration with rising levels of education for countries at all levels human development. Moreover, comparisons across a global sample of countries provide no support for earlier propositions (Gould 1982; Long 1973) that the effect of education on migration diminishes with educational expansion. As is evident from Figure 2, the tertiary-educated remain strongly differentiated from other groups in countries at all levels of development. As Table 1 shows, no association was found between the strength of the educational gradient, as measured by odds ratios, and levels of human development, urbanisation, and educational attainment when correlation analysis was performed.

Table 1: **Pearson correlation coefficients between odds ratios (model 2) and national indicators**

	Primary education	Secondary education	Tertiary education
Human development index	−0.04	−0.09	0.12
Urbanisation rate	−0.08	−0.08	0.01
% pop with at least secondary education	−0.18	−0.18	−0.02

Note: No coefficient is statistically significant.

4. Discussion and conclusion

Our analysis of 56 countries shows that the positive educational selectivity of internal migrants is a near universal empirical regularity. In all countries except Haiti tertiary education has a positive, statistically significant impact on migration; in 80% of countries both secondary and tertiary significantly increase the odds of migrating, and in nearly 70% of countries all three levels of education raise the likelihood of moving compared with individuals with no formal education. Globally, compared with individuals with no formal education, those with primary education are 1.1 times more likely to move, those with secondary education 1.2 times more likely, and those with tertiary education 2.3 times more likely, *ceteris paribus*. While we found that migrants in nearly all countries are more educated than stayers, countries vary significantly in the degree of selectivity, and it is the impact of tertiary education on migration that most strongly differentiates countries from one another.

Contrary to theoretical expectations, the degree of educational selectivity of migration does not abate as education expands. Countries with the highest degree of educational selectivity, as measured by odds ratios for tertiary education, are located

across the development spectrum and are found in all regions, including Africa (Burkina Faso, Kenya, Malawi, and Mozambique), Asia (Indonesia, Jordan, Malaysia, and Turkey), Europe (Poland and Slovenia), and Latin America (Argentina).

The presence of marked differences between and within regions demonstrates that the effect of education on migration behaviour is shaped by the national and local context in which migrants' lives are embedded. Perhaps migrants respond differently to similar forces in individual national settings. Or perhaps the factors underpinning migration decisions, such as economic returns to migration, wage differentials, and labour market structures, vary from one country to the next in such a way as to alter the role of education in migration decisions.

Other factors that might play a role are differences in geographic size and settlement patterns, which have been found to contribute to cross-national variations in migration intensity and redistribution (Bell et al. 2015). These questions are particularly relevant to neighbouring countries in our sample that differ widely in the degree of educational selectivity, including Canada and the United States, Malaysia and Indonesia, Malawi and Zambia, or Argentina and Brazil.

While it is clearly evident that education stimulates migration, our results provide no information as to its spatial manifestation. The impact of migration on the redistribution of human capital incontestably depends on educational selectivity, but its net effect is also the product of the relative size of flows and counter flows. Recent findings indicate that the redistributive effect of migration on populations is much stronger outside the developed world (Rees et al. 2017). Thus, differences in the spatial imbalance of flows and counter-flows, coupled with variations in migration intensity, when combined with wide variations in educational selectivity suggest that the impact of migration on the redistribution of human capital may differ significantly from one country to the next. Further work is needed to quantify systematically, for a global sample of countries, the impact of internal migration in transforming the distribution of human capital. This would be a logical sequel to the current paper and would represent an important step forward in our understanding of links between migration, education, and development.

5. Acknowledgements

organised by the OECD and the UNESCO in Paris in February 2018. The authors would like to thank both organisations for their support and the workshop participants for useful discussions.

References

Adams, J. and Richard, H. (1993). The economic and demographic determinants of international migration in rural Egypt. *The Journal of Development Studies* 30(1): 146–167. doi:10.1080/00220389308422308.

Amuakwa-Mensah, F., Boakye-Yiadom, L., and Baah-Boateng, W. (2016). Effect of education on migration decisions in Ghana: A rural-urban perspective. *Journal of Economic Studies* 43(2): 336–356. doi:10.1108/JES-09-2013-0138.

Bell, M., Charles-Edwards, E., Kupiszewska, D., Kupiszewski, M., Stillwell, J., and Zhu, Y. (2015). Internal migration and development: Comparing migration intensities around the world. *Population and Development Review* 41(1): 33–58. doi:10.1111/j.1728-4457.2015.00025.x.

Bernard, A., Bell, M., and Charles-Edwards, E. (2014a). Improved measures for the cross-national comparison of age profiles of internal migration. *Population Studies* 68(2): 179–195. doi:10.1080/00324728.2014.890243.

Bernard, A., Bell, M., and Charles-Edwards, E. (2014b). Life-course transitions and the age profile of internal migration. *Population and Development Review* 40(2): 231–239. doi:10.1111/j.1728-4457.2014.00671.x.

Blanchard, O.J., Katz, L.F., Hall, R.E., and Eichengreen, B. (1992). Regional evolutions. *Brookings Papers on Economic Activity* 1992(1): 1–75. doi:10.2307/2534556.

Borjas, G.J. (1994). The economics of immigration. *Journal of Economic Literature* 32(4): 1667–1717.

Catney, G. and Simpson, L. (2010). Settlement area migration in England and Wales: Assessing evidence for a social gradient. *Transactions of the Institute of British Geographers* 35(4): 571–584. doi:10.1111/j.1475-5661.2010.00400.x.

Cattaneo, C. (2007). The self-selection in the migration process: What can we learn? Castellanza: LIUC University (LIUC Papers in Economics 199).

Courgeau, D., Muhidin, S., and Bell, M. (2013). Estimating changes of residence for cross-national comparison. *Population* 67(4): 631–651. doi:10.3917/pope.1204.0631.

Curran, S.R. and Rivero-Fuentes, E. (2003). Engendering migrant networks: The case of Mexican migration. *Demography* 40(2): 289–307. doi:10.1353/dem.2003.0011.

Feliciano, C. (2005). Educational selectivity in US immigration: How do immigrants compare to those left behind? *Demography* 42(1): 131–152. doi:10.1353/dem.2005.0001.

Ginsburg, C., Bocquier, P., Béguy, D., Afolabi, S., Augusto, O., Derra, K., Odhiambo, F., Otiende, M., Soura, A., and Zabré, P. (2016). Human capital on the move: Education as a determinant of internal migration in selected INDEPTH surveillance populations in Africa. *Demographic Research* 34(30): 845–884. doi:10.4054/DemRes.2016.34.30.

Gould, W. (1982). Education and internal migration: A review and report. *International Journal of Educational Development* 1(3): 103–111. doi:10.1016/0738-0593(82)90047-5.

Greenwood, M.J. (1975). Research on internal migration in the United States: A survey. *Journal of Economic Literature* 13(2): 397–433.

Greenwood, M.J. (1997). Internal migration in developed countries. *Handbook of Population and Family Economics* 1: 647–720. doi:10.1016/S1574-003X(97)80004-9.

Greenwood, M.J. (2014). *Migration and economic growth in the United States: National, regional, and metropolitan perspectives*. Cambridge: Academic Press.

Greenwood, M.J. and Hunt, G.L. (2003). The early history of migration research. *International Regional Science Review* 26(1): 3–37. doi:10.1177/0160017602238983.

Hacettepe University and Ministry of Health (2004). *Turkey Demographic and Health Survey 2003*. Ankara: Hacettepe University Institute of Population Studies.

Harris, J.R. and Todaro, M.P. (1970). Migration, unemployment and development: A two-sector analysis. *The American Economic Review* 60(1): 126–142.

IPUMS (2017). Integrated public use microdata series: International: Versions 6.5 [dataset]. Minneapolis: University of Minnesota.

Lall, S.V. and Selod, H. (2006). *Rural–urban migration in developing countries: A survey of theoretical predictions and empirical findings*: Herndon: World Bank Publications. doi:10.1596/1813-9450-3915.

Long, L. (1973). Migration differentials by education and occupation: Trends and variations. *Demography* 10(2): 243–258. doi:10.2307/2060816.

Lucas, R.E. (1997). Internal migration in developing countries. *Handbook of Population and Family Economics* 1: 721–798. doi:10.1016/S1574-003X(97)80005-0.

Machin, S., Salvanes, K.G., and Pelkonen, P. (2012). Education and mobility. *Journal of the European Economic Association* 10(2): 417–450. doi:10.1111/j.1542-4774.2011.01048.x.

Malamud, O. and Wozniak, A. (2012). The impact of college on migration evidence from the Vietnam generation. *Journal of Human Resources* 47(4): 913–950. doi:10.3368/jhr.47.4.913.

Massey, D.S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., and Taylor, J.E. (1993). Theories of international migration: A review and appraisal. *Population and Development Review* 19(3): 431–466. doi:10.2307/2938462.

Massey, D.S. and Espinosa, K.E. (1997). What's driving Mexico–US migration? A theoretical, empirical, and policy analysis. *American Journal of Sociology* 102(4): 939–999. doi:10.1086/231037.

Palloni, A., Massey, D.S., Ceballos, M., Espinosa, K., and Spittel, M. (2001). Social capital and international migration: A test using information on family networks. *American Journal of Sociology* 106(5): 1262–1298. doi:10.1086/320817.

Quinn, M.A. and Rubb, S. (2005). The importance of education-occupation matching in migration decisions. *Demography* 42(1): 153–167. doi:10.1353/dem.2005.0008.

Ravenstein, E.G. (1885). The laws of migration. *Journal of the Statistical Society of London* 48(2): 167–235. doi:10.2307/2979181.

Rees, P., Bell, M., Kupiszewski, M., Kupiszewska, D., Ueffing, P., Bernard, A., Charles-Edwards, E., and Stillwell, J. (2017). The impact of internal migration on population redistribution: An international comparison. *Population, Space and Place* 23(6): e2036. doi:10.1002/psp.2036.

Rendall, M.S. and Parker, S.W. (2014). Two decades of negative educational selectivity of Mexican migrants to the United States. *Population and Development Review* 40(3): 421–446. doi:10.1111/j.1728-4457.2014.00692.x.

Sjaastad, L.A. (1962). The costs and returns of human migration. *The Journal of Political Economy* 70(5): 80–93. doi:10.1086/258726.

Thomas, D.S. (1938). *Research memorandum on migration differentials*. Brooklyn: Social Science Research Council.

Todaro, M.P. (1969). A model of labor migration and urban unemployment in less developed countries. *The American Economic Review* 59(1): 138–148.

UNESCO (2011). *International Standard Classification of Education: ISCED 2011*. Paris: UNESCO, Institute for Statistics.

UNESCO (forthcoming). *Migration, displacement and education: Building bridges, not walls*. Paris: UNESCO.

UNFPA (2007). *State of the world population in 2007: Unleashing the potential of urban growth*. New York: UNFPA.

White, M.J. and Lindstrom, D.P. (2005). Internal migration. In: Poston Jr., D.L. and Micklin, M. (eds.). *Handbook of population*. Boston: Springer: 311–346. doi:10.1007/0-387-23106-4_12.

Williams, N. (2009). Education, gender, and migration in the context of social change. *Social Science Research* 38(4): 883–896.

World Bank (2009). The World Development Report 2009 'reshapes economic geography': Geographical reflections. Herndon: World Bank Publications. doi:10.1016/j.ssresearch.2009.04.005.