IPC 2025 Submission

Unequal Journeys: Unpacking the Differential Impact of Development on Internal Migration across Educational Groups

Dorothee Beckendorff, Wenxiu Du, Mathias Lerch

Introduction

Internal migration, a critical yet often underappreciated component of global migration dynamics, is shaped by a range of factors such as conflict, climate change or resource scarcity. As these pressures drive movement within countries, understanding internal migration patterns is essential for addressing resulting challenges posed by displacement and uneven development. In the Global South, where rapid urbanization continues to transform cities, this transition creates dual pressures —overcrowding in cities and depopulation of rural areas — leading to brain drain from less developed regions. Migrants move between rural and urban areas or from one urban center to another, primarily in search of improved education and job prospects. These flows expose regional economic disparities or exacerbate challenges like unemployment and economic instability in both sending and receiving regions. In this study, we disaggregate migration trends by educational attainment across city tiers, providing a nuanced analysis of how development drivers impact migration patterns in different urban contexts, with a particular focus on the contrasting behaviors of highly educated and less educated individuals.

Empirical studies (Gould, 1982; Schwartz, 1976) suggest that higher education correlates with increased migration, making education a key component in understanding internal migration patterns. However, the findings remain inconsistent across different contexts (Williams, 2009), particularly in the Global South. Individuals with varying levels of educational attainment have distinct aspirations and access to resources, which shapes their migration behavior. Those with higher education are more likely to seek opportunities in urban centers, while those with lower education may face barriers to mobility.

Education, as a key part of a broader process of development, drives migration patterns by influencing the accumulation of human capital in urban centers, where it boosts the economy by relocating knowledge and skills (Bernard & Bell, 2018b). However, this occurs at the expense of rural regions, which experience a loss of talent (Ginsburg et al., 2016). Given that urbanization is viewed as a catalyst for economic growth and poverty reduction(Haryanto et al., 2021), exploring the links between education, migration and development in fast urbanizing contexts is worth exploring. Yet, our understanding of how migration responses vary among different educational groups in developing contexts remains limited. This study aims to fill this gap by analyzing how different educational strata of populations in developing countries respond in their internal

migration behaviors to local process of human development across the hierarchical distribution of cities according to their economic and political importance (thereafter referred to as the urban hierarchy).

Literature Review

There is a substantial body of literature on the influence of development on migration (Bell et al., 2015; Bernard et al., 2017; Rees et al., 2017), with education playing a key role in shaping individuals' propensity to migrate. However, there is a notable gap in research exploring how different educational groups respond differently to development drivers of migration. Research shows that highly educated individuals have greater access to opportunities, shaping their migration behavior, while those with less formal education may lack information or resources to migrate.

Whether in global comparative research or case-specific analyses with different geographic and methodological perspectives, the role of education in migration decisions is evident, particularly in the context of rural-to-urban migration or mobility between urban centers. Ginsburg et al. (2016), Bernard and Bell (2018a, 2018b) and Lucas et al. (2021) highlight that more educated individuals are more likely to move from rural areas to cities, driven by better job prospects. Abel and Muttarak (2017) add a geographic component, showing that highly educated individuals migrate over longer distances. This effect varies by region: in Africa and Asia, migration levels for those with higher education are similar, while in Europe and North America, highly educated individuals migrate more frequently. Their findings are built upon by Abel et al. (2021), who introduce additional variables like income, GDP, and GINI coefficients at national level, further linking socio-economic factors with migration and education. Their findings suggest that economic growth may reduce migration incentives for individuals with moderate levels of education, perhaps due to better opportunities becoming available locally.

Case studies from the U.S. (Borjas et al., 1992), Nigeria (Mberu, 2005), Nepal (Williams, 2009), Ghana (Reed et al., 2010) and sub-Saharan Africa (Brockerhoff & Eu, 1993) also reveal education as a central factor in internal or rural-urban migration, often in combination with other socio-economic drivers such as gender, age or fertility and mortality. Urbanization amplifies the migration dynamic, with educated individuals attracted to larger cities not only for better opportunities but also for the increased amenities and available resources, as seen in studies by McCormick and Wahba (2005) in Egypt and Henderson (1986) in Brazil.

The interplay between urbanization, education, and migration is particularly significant in developing countries. Haryanto et al. (2021) emphasize that the relationship between urbanization and development evolves at different developmental stages. In many developing countries, there is a high correlation between city size and the educational

attainment of the local population (Henderson, 1986). Studies show that educated workers in Egypt's major cities are more likely to migrate to larger urban areas, as employers in these cities prefer well-educated employees. This migration pattern is reinforced by the perceived advantages of large cities, such as career prospects and enhanced living environments, creating a concentration of educated individuals in urban centers. This phenomenon is also supported by Yap(1977), who discussed the attractiveness of different urban hierarchy levels for various educational brackets. Such patterns are further supported by studies on the returns to education, which are often higher in urban versus rural areas (Lucas et al. 2021).

Overall, studies on internal migration and education highlight a consistent pattern: education is a significant factor influencing migration decisions, particularly in terms of rural-to-urban migration and urban expansion. Building on the existing literature, this study hypothesizes that individuals with higher educational attainment are more responsive to development as a driver of both outmigration from cities, particularly in the context of urbanization. We hypothesize that at early stages of urban development, highly educated individuals may engage in outmigration from cities, seeking better opportunities elsewhere if the urban environment is not yet sufficiently developed to meet their aspirations and needs. This suggests that educated individuals are more sensitive to the developmental stage of urban areas, influencing their decisions to move away from cities. Towards late stages of local development, we expect higher outmigration of those with less formal due to rising living costs.

Data & Methods

Our study encompasses 30 developing countries including 600 FUAs drawn from the URBDEMO Collection of Micro-data samples from successive rounds of Population and Housing Censuses (IPUMS International, Minnesota Population Center (2019), which allows us to study migration responses at the level of distinct cities. Geospatial data (GHSL, OECD & European Commission, 2020) were combined with the IPUMS administrative geographies to apply urban agglomeration borders (including urban centers and their commuting zones) and regroup populations by those Functional Urban Areas (FUA). Migration is defined as a move between two distinct FUAs, from the countryside into a city or vice-versa, relying on the IPUMS 5-year migrant transition data. The population universe is constituted by individuals aged between 25 and 64 to focus on movements of the labor force and ensure that educational attainment remained constant over the observation period. Four tiers are distinguished in the hierarchy of cities: we regrouped cities into quartiles of their country-specific distributions according to population size at the time of the last census in each country. Human development at the level of distinct cities is measured as a composite index based on three dimensions: the child survival rate (health), completion rates for primary,

secondary and tertiary education (knowledge) and an FUA household-level asset-index (standard of living) following Permanyer et al.(2015).

We aim to explore how different educational groups of the local populations respond in their migration behaviors to human development drivers over time in various tiers of the urban hierarchy. We employ Poisson models with city fixed-effects to regress the in education-, period- and city-specific intensities of migration on educational attainment, the tiers within the urban hierarchy and local in human development (introduced as a quadratic term), as well as in the interaction between the three covariates. This allows us to predict average trends in migration by educational attainment, tier within the urban hierarchy and local development stage to test the differential migration responsiveness to local development drivers. This helps us understand the heterogeneities in the relationship between development and migration changes. For the final version of this communication, we will test alternative models, including third-order polynomial and spatial interaction models that further disaggregate outmigration by destination according to urban hierarchy. Additionally, we will test full spatial interaction models that incorporate both origin-specific urban hierarchy tiers and development levels.

Expected Findings

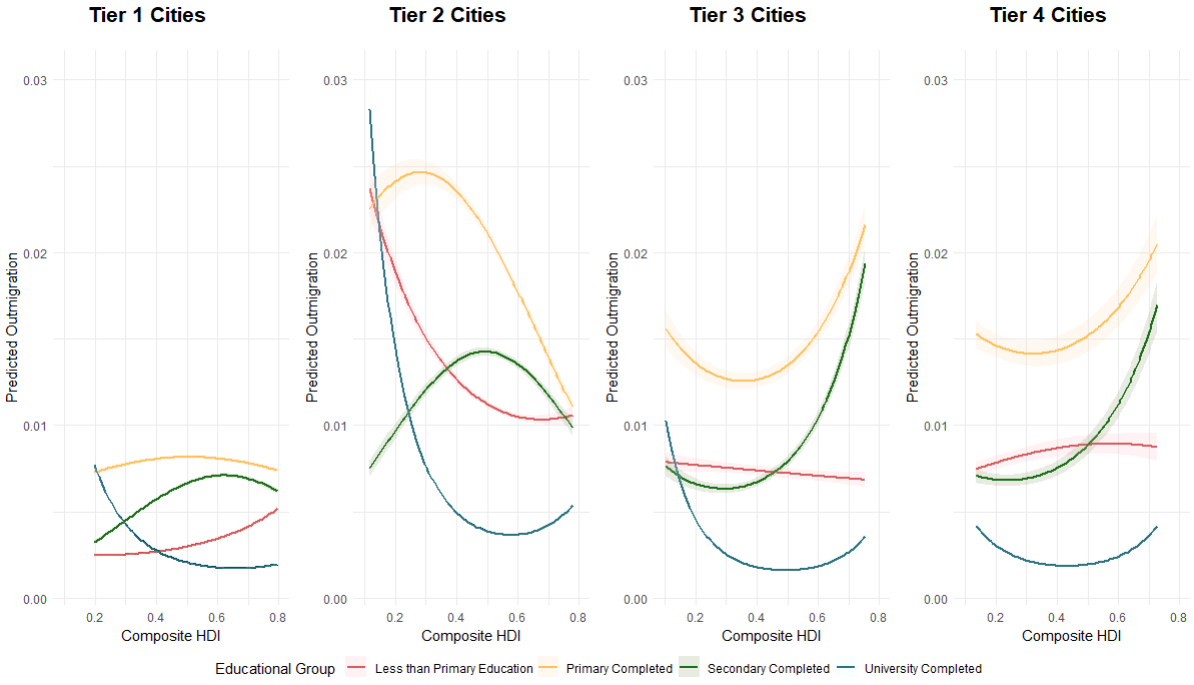

Figure 1: Predicted Outmigration Trends by Educational Attainment Across Different City Tiers and Composite Human Development Index (HDI)

Our initial analysis (Figure 1) reveals notable differences in outmigration trends across educational groups, particularly among the highly skilled. Contrary to previous research, which often shows that highly educated individuals are more mobile, we

observe systematically lower outmigration among the university-educated in all urban hierarchy (UH) tiers. One potential explanation for this unexpected result is our focus on cities as sending areas. In the largest cities, (Tier 1 and Tier 2), university-educated individuals tend to migrate during the early phases of development, but as living standards improve, they are more likely to remain, seeking amenities and opportunities that align with their higher-order needs, which less developed cities may not yet offer.

For those with secondary education, outmigration increases in Tier 3 and Tier 4 as development enables them to seek better opportunities. However, in Tier 1 and Tier 2, outmigration initially rises but then declines as cities become more developed. Among individuals with primary education, outmigration remains relatively stable in Tier 1, as staying in these large cities is generally more beneficial regardless of development stage. In Tiers 3 and 4, however, development seems to help these individuals move out of poverty, driving migration, while retaining the disadvantaged strata in upper ranked cities. For individuals with no completed primary education, outmigration increases with development, as it helps them escape poverty in lower-ranked cities, but rising costs of living may push them out of more developed, upper-ranked cities.

In Tier 3 and 4, the outmigration patterns across educational groups are relatively similar, with less variation between groups. In contrast, Tiers 1 and 2 show divergent trends, with outmigration patterns across educational groups intersecting. We see the need to further disaggregate outmigration by destination which may reveal distinct trends, such as the return migration of less-educated individuals to more rural regions (Lucas et al. 2021). At lower stages of development, urban migration may not be permanent, and there may be a cyclical movement between rural and urban areas.

Bibliography

Abel, G., Bernard, A., & Muttarak, R. (2021). *Comparisons in the Drivers of Internal Migration by Education*.

Abel, G., & Muttarak, R. (2017). Who is moving? Exploring internal migration by gender and education across 58 countries. *Population Association of America*.

Bell, M., Charles-Edwards, E., Ueffing, P., Stillwell, J., Kupiszewski, M., & Kupiszewska, D. (2015). Internal Migration and Development: Comparing Migration Intensities Around the World. *Population and Development Review*, *41*(1), 33–58. https://doi.org/10.1111/j.1728-4457.2015.00025.x

Bernard, A., & Bell, M. (2018a). Educational selectivity of internal migrants: A global assessment. *Demographic Research*, *39*, 835–854. https://doi.org/10.4054/DemRes.2018.39.29

Bernard, A., & Bell, M. (2018b). *Internal migration and education: A cross-national comparison* (arXiv:1812.08913). arXiv. https://doi.org/10.48550/arXiv.1812.08913

Bernard, A., & Bell, M. (2018c). *Internal migration and education: A cross-national comparison* (arXiv:1812.08913). arXiv. https://doi.org/10.48550/arXiv.1812.08913

Bernard, A., Rowe, F., Bell, M., Ueffing, P., & Charles-Edwards, E. (2017). Comparing internal migration across the countries of Latin America: A multidimensional approach. *PLOS ONE*, *12*(3), e0173895. https://doi.org/10.1371/journal.pone.0173895

Borjas, G. J., Bronars, S. G., & Trejo, S. J. (1992). Self-selection and internal migration in the United States. *Journal of Urban Economics*, *32*(2), 159–185. https://doi.org/10.1016/0094-1190(92)90003-4

Brockerhoff, M., & Eu, H. (1993). Demographic and Socioeconomic Determinants of Female Rural to Urban Migration in Sub-Saharan Africa. *The International Migration Review*, *27*(3), 557–577. https://doi.org/10.2307/2547100

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

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

Haryanto, T., Erlando, A., & Utomo, Y. (2021). The Relationship Between Urbanization, Education, and GDP Per Capita in Indonesia. *The Journal of Asian Finance, Economics and Business*, *8*(5), 561–572. https://doi.org/10.13106/jafeb.2021.vol8.no5.0561

Henderson, J. V. (1986). Urbanization in a developing country: City size and population composition. *Journal of Development Economics*, *22*(2), 269–293. https://doi.org/10.1016/0304-3878(86)90132-x

Lucas, R. E. B. (2021). Who Migrates, Who Stays? In R. E. B. Lucas (Ed.), *Crossing the Divide: Rural to Urban Migration in Developing Countries* (p. 0). Oxford University Press. https://doi.org/10.1093/oso/9780197602157.003.0004

Mberu, B. U. (2005). Who moves and who stays? Rural out-migration in Nigeria. *Journal of Population Research*, *22*(2), 141–161. https://doi.org/10.1007/BF03031826

McCormick, B., & Wahba, J. (2005). Why Do the Young and Educated in LDCs Concentrate in Large Cities? Evidence from Migration Data. *Economica*, *72*(285), 39–67. https://doi.org/10.1111/j.0013-0427.2005.00401.x

Minnesota Population Center. (2019). *Integrated Public Use Microdata Series, International: Version 7.2* (Version 7.2) [Dataset]. Minneapolis, MN: IPUMS. https://doi.org/10.18128/D020.V7.2

OECD & European Commission. (2020). *Cities in the World: A New Perspective on Urbanisation*. OECD. https://doi.org/10.1787/d0efcbda-en

Permanyer, I., Esteve-Palos, A., Garcia, J., & Mccaa, R. (2015). Human Development Index-like Small Area Estimates for Africa Computed from IPUMS-International Integrated Census Microdata. *Journal of Human Development and Capabilities*, *16*(2), 245–271. https://doi.org/10.1080/19452829.2014.956300

Reed, H. E., Andrzejewski, C. S., & White, M. (2010). Men's and women's migration in coastal Ghana: An event history analysis. *Demographic Research*, *22*, 771–812. https://doi.org/10.4054/DemRes.2010.22.25

Rees, P., Bell, M., Kupiszewski, M., Kupiszewska, D., Ueffing, P., Bernard, A., Charles-Edwards, E., & Stillwell, J. (2017). The Impact of Internal Migration on Population Redistribution: An International Comparison. *Population, Space and Place*, *23*(6), e2036. https://doi.org/10.1002/psp.2036

Schwartz, A. (1976). Migration, Age, and Education. *Journal of Political Economy*, *84*(4, Part 1), 701–719. https://doi.org/10.1086/260472

Williams, N. (2009). Education, gender, and migration in the context of social change. *Social Science Research*, *38*(4), 883–896. https://doi.org/10.1016/j.ssresearch.2009.04.005

Yap, L. Y. L. (1977). The attraction of cities: A review of the migration literature. *Journal of Development Economics*, *4*(3), 239–264. https://doi.org/10.1016/0304-3878(77)90030-X