Educational Mismatch on Both Ends: A Sequence Analysis of Labor Trajectories of South-South Migration in Montevideo

SHORT

The educational mismatch is a well-documented issue among newly arrived refugee and migrant populations, and research mostly focuses on cross-sectional analysis paying little attention to labor trajectories before migration. However, examining labor trajectories at origin and path dependency in explaining outcomes regarding educational mismatch at the destination is of utmost importance in segmented labor markets involving south-south migration flows. To this end we use retrospective labor trajectory data to examine the persistence of educational (mis)match from the origin to the destination, using data from the 2018 Ethnosurvey on Recent Immigration for Dominican, Peruvian, and Venezuelan migrants residing in Montevideo. We apply sequence analysis techniques, including optimal matching and Ward clustering, to identify predominant educational (mis)match trajectories at the origin and the destination. Preliminary findings suggest educational mismatches at both ends. Overeducation after migration is observed often among those with long-term matching or out-of-labor-force backgrounds, but can also follow prior overeducation backgrounds from origin. Likewise, undereducation trajectories at the origin can be overcome or persist post-migration. Cluster analysis of pre-migration and post-migration trajectories indicates stability and limited occupational mobility at both ends. This paper contributes to further studies on the life course impacts of migration, with a special focus on individuals who experience mobility across segmented labor markets.

EXTENDED

Introduction

Educational mismatch has been frequently discussed in migration studies as both a cause and a consequence of migration, and as a key aspect of social inclusion in host countries (Piracha, Tani and Vadean 2012). Research using sequence analysis perspective at times combined with multivariate analysis has contributed to understand the nuances of social inclusion at destination by identifying how individuals are sorted into different labor sequences (Backman, Lopez, & Rowe 2021; Klaexon & Wixe 2023; Kogan 2007; Zhou 2023), migration trajectories (Liao & Gan 2020) and even how these trajectories relate to each other and to family formation trajectories (Mikolai & Kulu 2022ab). The assessment of labor trajectories by means of sequence has been limited to episodes of activity status, wage, or prestige of occupations. In contrast, the assessment of educational mismatch has rarely been explored from this optics and the studies that use longitudinal data limit their focus to the trajectories at destination.

One of the few research that addresses the impact of prior over- or under-education on educational mismatch at destination, do it so for immigration in Australia (Piracha, Tani and Vadean 2012). Using data from the last job at origin and several jobs at destination hey found that over-education at home increases over-education in Australia by 45%, while under-education at home raises the likelihood of under-education in Australia by 61%, and results hold even upto 17 months after migration.

Though Uruguay has not enforced specific policies to attract highly skilled migrants, its progressive migration and refugee governance has attracted highly-skilled and skilled refugees and migrants from Venezuelan and Cuban origin since 2015. In addition, it receives immigration from neighboring countries, Peru and the Dominican Republic, among which medium and low skill levels predominates (Prieto et al 2022; Wang et al 2023). Despite of a high prevalence of regularization among recent migrants, the evidence shows that educational mismatch is one of the aspects that affects the quality of employment of migrant populations in Uruguay (Márquez Scotti, Prieto Rosas & Escoto Castillo, 2020; Méndez, 2018). However, this evidence is based on cross-sectional data from the Uruguayan labor force survey and the analysis overlooks the effects of path dependency on labor trajectories at origin.

Taking advantage of time and place variant retrospective information on the complete labor trajectories of migrants residing in Montevideo, we analyze labor trajectories at destination in terms of educational mismatch and the extent to which they are associated with analogous trajectories at origin. In other words, we address to what extent the educational mismatch experienced at the destination is associated with i) the labor trajectory at the origin, and (ii) the demographic attributes of migrants. We try to respond to the following questions: (1) Is international migration associated with a disruption in the educational matching trajectory? (2) What are the typical trajectories of educational (mis)match at the origin? (3) How do these trajectories relate to the observed trajectories at the destination? (4) Are migrants who experienced educational mismatch at origin more or less prone to experience it at the destination? (5) Are results consistent along different communities of origin?

By accounting for both, labor trajectories at origin and destination and focusing on low and middle-income countries of origin and destination respectively, this research contributes to further studies on the life course impacts of migration, with a special focus on individuals who experience mobility across segmented labor markets.

Data and Methods

The LAMP survey questionnaires organize retrospective information into tables displaying occupation episodes in the rows and columns where several time variant attributes by episode are collected. Such attributes include -among others– occupation, educational attainment, place (city, country), and duration for each occupation. This retrospective data is recorded since the first labor episode reported by individuals, for both the main respondent and their spouse regardless of their place of residence. For this paper, we use informant and spouse data limiting the latter to those residing in Uruguay at the moment of the survey.

To calculate the educational match indicator, we use time-varying data on occupation and years of schooling. Occupations were initially coded using the Mexican Occupation Classification (1996)[1] and

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[1] The Mexican Occupation Classification is based on the adaptation of the 1968 International Standard Classification of Occupations (ISCO) to the Mexican reality (INEGI, 1994). This adaptation does not break with the international classifier which allows us to form large occupational class groups and apply the normative construction of mismatch developed by ILO (2013). The LAMP project has been using this classification as it

subsequently grouped into occupation classes. Each occupation class was then assigned an expected educational attainment required to perform its tasks, which was later compared to the actual educational attainment of individuals. This comparison resulted in categorizing individuals as undereducated when they achieved lower educational attainment than expected, as matched when their education equals the expected, and as overeducated when they have achieved higher education than expected. As described, we follow a normative approach to educational mismatch, as outlined in the ILO (2013) guidelines.

To respond to the research questions, we use retrospective life-history data collected in Montevideo in 2018 to migrants of Dominican, Peruvian, and Venezuelan origin by LAMP. We use Respondent Driven Sampling (RDS) to recruit participants of the same origin reaching a final sample of 803 informants: 136 from Cuba, 172 from Dominican Rep., 124 from Peru, and 371 from Venezuela. Informants reported data at the family level for a total of 2,219 individuals of whom 70% are living in Uruguay and the rest abroad. Similar to other LAMP surveys full labor histories were collected for the informant and their spouse (1,218 individuals)[2].

Given the different durations of stays in Montevideo, with Cubans being a community where around 8 out of 10 interviewees arrived in the same year of the survey, we limit the analysis to Peruvian, Dominican, and Venezuelan origins. Also, to achieve balanced data where all individuals shared the same length of observation, we consider the last five years before migration and the first three years after which reduces the labor histories sample to 495 cases.

For estimation we apply, first, sequence analysis techniques combining Optimal Matching and Ward clustering to create two categorical variables for origin and destination labor trajectories. Second, we specify a multinomial regression for educational mismatch at destination for the second year after migration (dependent), including trajectories at origin as an independent variable along with other demographic controls such as age, sex, migration cohort, and community of origin.

Preliminary results

In Table 1, we present the cross-sectional characteristics of the subsample used for the analysis three years after migration. This subsample includes adult individuals who had resided in Uruguay for at least three years -including the year of migration in this count-, were 14 years or older ten years before migrating, and represents a relatively balanced mix of origins, with the Venezuelan community having a slightly greater presence. The mean age at the time of observation is approximately 30 years, with a larger proportion of women observed in each community, although this gender distribution does not hold for the full sample of survey participants. On average, these individuals had around 12 years of schooling for Peruvians and Dominicans, whereas Venezuelans, on average, had four additional years of education, with the majority holding a university degree. As shown in Table 1, Peruvian and Dominican communities have a higher prevalence of unskilled jobs, whereas Venezuelans are predominantly concentrated in skilled manual or non-manual jobs, or high-skilled non-manual

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better fits the Mexican labor market where these surveys has been originally developed. The classification consists of 18 major occupation groups and one group for unemployment and population out of the labor force.
[2] LAMP project includes informants person year data in the socalled LIFE and SPOUSE files, for the informant and spouse respectively.

occupations. Notably, while overeducation is more common among Venezuelans, all three communities are affected mostly by this type of educational mismatch at time tm2. But as can be seen in Figure 1 mismatch arises earlier for most of them.

Table 1. Demographic and labor characteristics of the foreign-born population at the third year since migration (tm2). Migrants of Dominican, Peruvian, and Venezuelan origin in Montevideo

	DOM	PER	VEN
Percentage	31.3	32.1	36.6
Female (percentage)	62.1	70.5	52.6
Mean age at migration (se)	29.9 (0.59)	32.8 (0.81)	32.0 (0.61)
Mean yrs of schooling (se)			
Both	11.5 (.191)	12.3 (.222)	15.8 (.084)
Male	12.0 (.261)	12.5 (.398)	15.5 (.115)
Female	11.1 (.262)	12.2 (.267)	16.1 (.119)
Occupation class at tm2 (percentage)			
Not in labor force	6.9	11.9	5.0
Unskilled	71.0	56.7	14.2
Skilled manual-Low skilled non manual	17.3	23.9	47.7
High skilled non manual with technical education	3.9	3.4	13.1
High skilled non manual with university education	0.1	4.0	18.0
Unemployed	0.8	0.0	1.1
Unknown	0.0	0.2	0.8
Total	100	100	100
Educational Match at tm2 (percentage)			
Undereducated	12.9	5.5	5.4
Matched	26.1	32.7	23.5
Overeducated	53.3	49.8	64.2
Unemployed	0.8	0.0	1.1
Non in the labor force/Unknown	6.9	12.0	5.8
Total	100	100	100
N	167	135	194

Note: we include all foreign-born individuals at LIFE and SPOUSE ENIR files regardless of the duration of their stay in Uruguay. n=496 individuals.

Findings highlight that overeducation at destination arises after migration among those coming from a long-term trajectory of matching or those that were out of the labor force at the origin, but it could also be a continuation of long-term mismatch trajectories. Similarly, trajectories of undereducation observed at the place of origin can either be overcome through subsequent experiences of matching at the destination or may persist even after migration (Figure 1).

Figure 1. Relative distribution of educational (mis)match by year for 5 years before migration and the first 3 years since migration. Migrants of Dominican, Peruvian, and Venezuelan origin in Montevideo
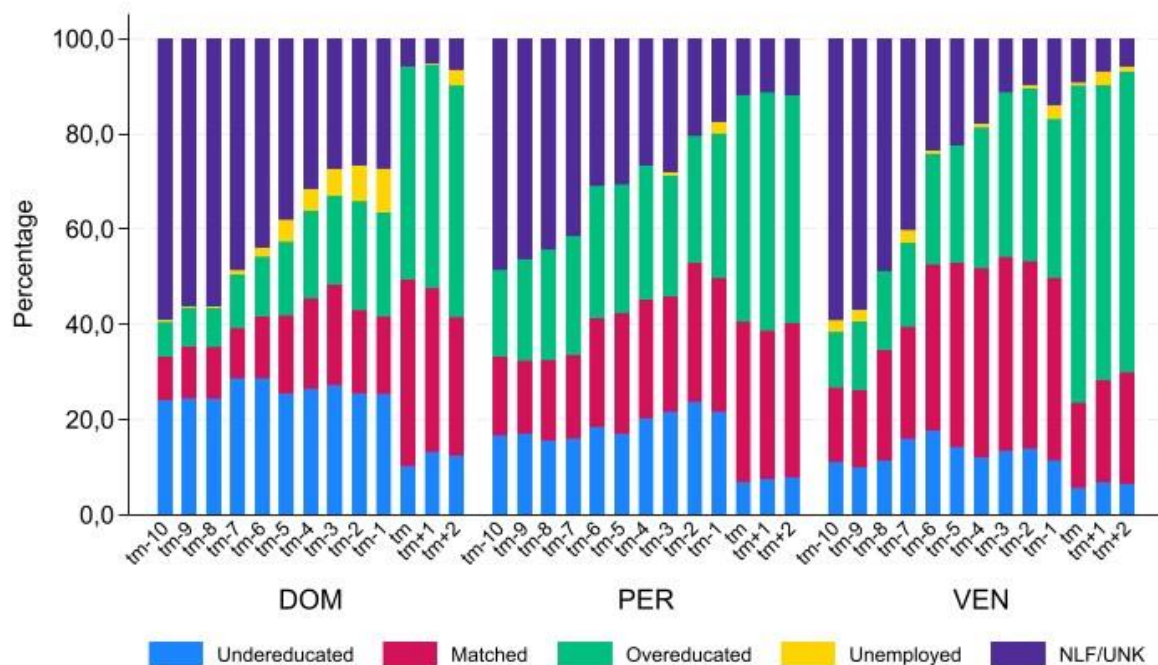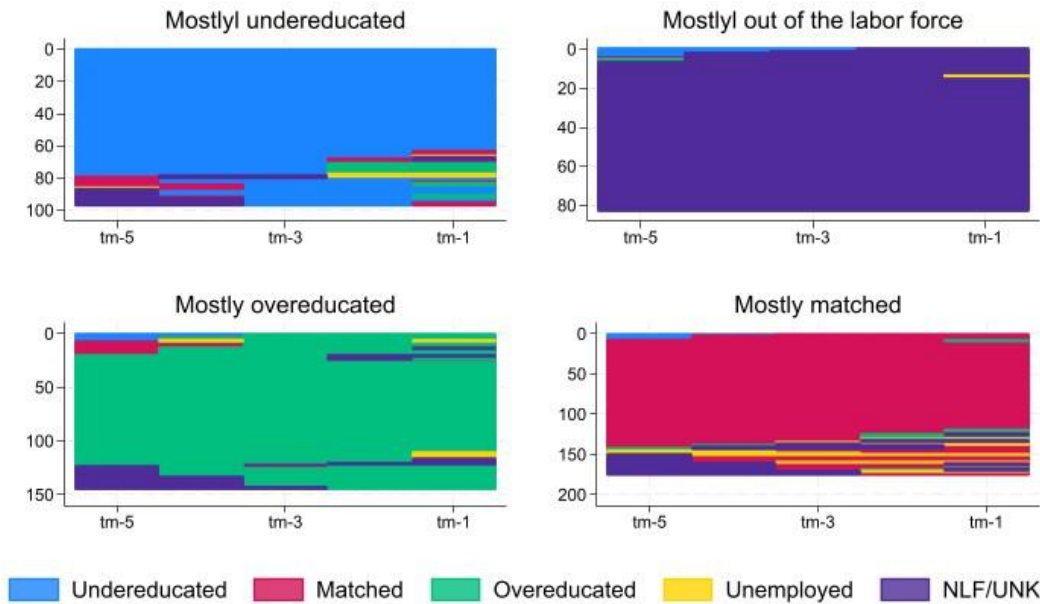

Note: we include individuals with at least three years in Uruguay who were 14 years and older at tm-5. "tm" stands for time of migration (year). N=496 individuals, 6,448 person-years.

The cluster analysis for trajectories of (mis)match for the five years before migration at the home country yielded four meaningful clusters/types of migrant workers: those persistently working in jobs below their education (overeducated), those consistently in jobs above their education (undereducated), those whose education matched their work, and those primarily outside the labor force (Figure 2). Similar groupings were observed in the destination for the year of migration (tm) and the two following years (tm1 and tm2) (Figure 3).

Figure 2. Clusters for educational (mis)match along labor trajectories observed at origin 5 years before migration. Migrants of Dominican, Peruvian, and Venezuelan origin in Montevideo

Note: we include individuals with at least three years in Uruguay. Data from life and spouse files is used. "tm" stands for time of migration (year). N=496 individuals, 2480 person-years.
Source: Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

Figure 3. Clusters for educational (mis)match along labor trajectories observed at destination in the year of migration and 2 subsequent years. Migrants of Dominican, Peruvian, and Venezuelan origin in Montevideo
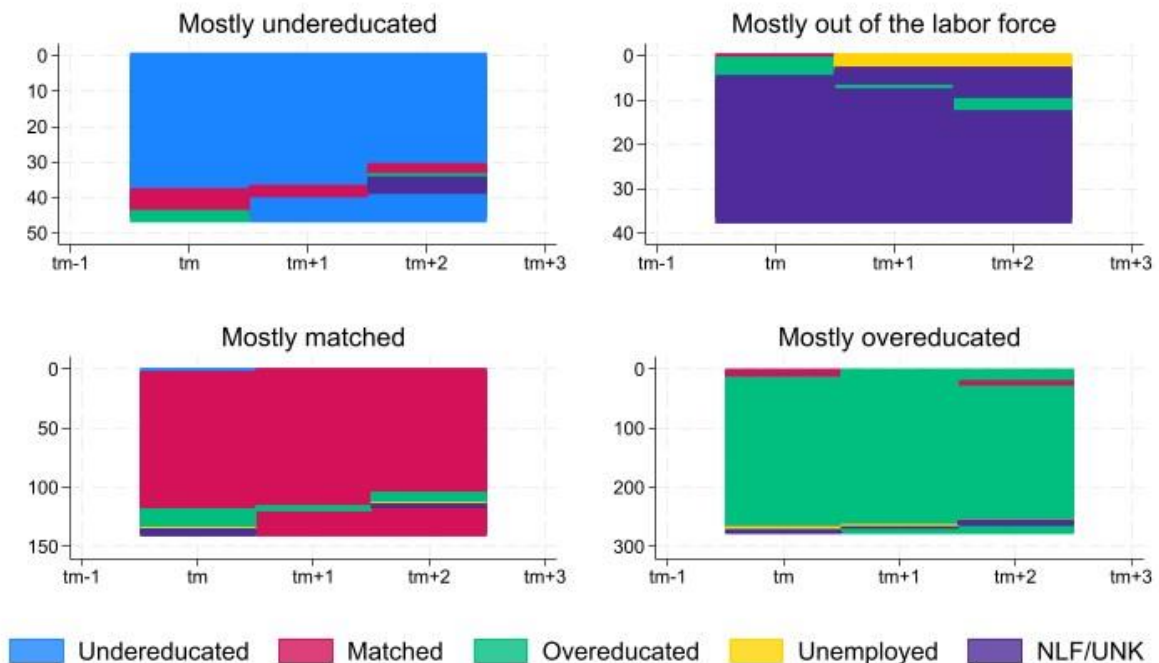
Note: we include individuals with at least three years in Uruguay. Data from life and spouse files is used. "tm" stands for time of migration (year). N=496 individuals, 1488 person-years.
Source: Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

The specific cluster analysis for the trajectories observed during the 5 years before migration points to stability and few opportunities for occupational mobility which speaks to the degree of segmentation of the labor markets at the origin (Figure 2). Finally, the minimal number of changes shown in the trajectories at the destination might be attributed to the relatively short duration of exposure at the new location (Figure 3). However, this pattern could also point to the segmentation of the Uruguayan labor market akin to what was observed at the origin, which is presumable given the south-south nature of this case study.

Further work

Regarding the next steps in our research, we will continue by examining sociodemographic characteristics associated with the observed trajectories by means of bivariate analysis and specific multinomial regression models for educational mismatch at arrival and three years since migration. In addition, we will complement and justify the description of the case study drawing on the limits and opportunities to make further generalizations to similar contexts. We will also explore the robustness of results controlling for selection to employment in the clustering and multivariate analysis.

Reference

Backman, M., Lopez, E., & Rowe, F. (2021). The occupational trajectories and outcomes of forced migrants in Sweden. Entrepreneurship, employment or persistent inactivity? *Small Business Economics*, *56*(3), 963–983. https://doi.org/10.1007/s11187-019-00312-z

Bernard, A., & Kalemba, S. (2022). Internal migration and the de-standardization of the life course: A sequence analysis of reasons for migrating. *Demographic Research*, *46*, 337–354. https://doi.org/10.4054/DemRes.2022.46.12

INEGI (1994) Clasificación Mexicana de Ocupaciones Volumen I. Aguascalientes: INEGI. Recuperado de https://www.inegi.org.mx/contenidos/clasificadoresycatalogos/doc/clasificacion_mexicana_de_ocupaciones_vol_i.pdf

International Labour Office., & International Labour Organisation. (2013). *Global employment trends for youth, 2013 : a generation at risk*. International Labour Office.

Kogan I (2007) A study of immigrants' employment careers in West Germany using the sequence analysis technique. Social Science Research 36(2): 491–511.

Klaesson, J., & Wixe, S. (2023). Place and immigrant labour market integration: A sequence analysis approach. *European Urban and Regional Studies*. https://doi.org/10.1177/09697764231166358

Liao, T. F., & Gan, R. Y. (2020). Filipino and Indonesian Migrant Domestic Workers in Hong Kong: Their Life Courses in Migration. *American Behavioral Scientist*, *64*(6), 740–764. https://doi.org/10.1177/0002764220910229

Méndez, L. (2018). *Immigrants' over-education and wage penalty. Evidence from Uruguay.* (16/18; Working Paper).

Mikolai, J., & Kulu, H. (2022a). *Heterogeneity or disadvantage in partnership, childbearing, and employment trajectories of the descendants of immigrants in the United Kingdom? A multi-channel sequence analysis of longitudinal data* (12; Working Paper).

Mikolai, J., & Kulu, H. (2022b). *Partnership, fertility, and employment trajectories of immigrants in the UK: A three-channel sequence analysis* (6; Working Paper).

Piracha, M., Tani, M. & Vadean, F. Immigrant over- and under-education: the role of home country labour market experience. *IZA J Migra*tion 1, 3 (2012). https://doi.org/10.1186/2193-9039-1-3

Zhou, Y. (2023). Work trajectories and status attainment process: a study using sequence analysis. *Journal of Chinese Sociology*, *10*(1). https://doi.org/10.1186/s40711-022-00180-3