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 mainly 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. Our findings suggest educational mismatches at both ends. Overeducation after migration is often observed among those with long-term matching or out-of-labour-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

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

Though Uruguay has not enforced specific policies to attract highly skilled migrants, its progressive migration and refugee governance have attracted highly skilled refugees and migrants from

Venezuelan and Cuban origin since 2015. In addition, it receives immigration from neighbouring countries, Peru and the Dominican Republic, among which medium and low skill levels predominate (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 regarding 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 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 time 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 subsequently grouped into occupation classes. Each occupation class was then assigned an expected

[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, allowing 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 better fits the Mexican labor market where these surveys have been developed initially. The classification consists of 18 major occupation groups and one group for unemployment and population out of the labor force.

educational attainment required to perform its tasks, which was later compared to the actual educational attainment of individuals. This comparison categorised 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 from 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 2,219 individuals, 70% of whom live in Uruguay and the rest abroad. Similar to other LAMP surveys, complete 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 labour histories sample to 480 cases.

For estimation, we first apply 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.

Results

In Table 1, we present the cross-sectional characteristics of the subsample used that 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. However, this gender distribution does not hold for the total sample of survey participants. On average, these individuals had around 12 years of schooling in 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.

[2] The LAMP project includes informant person year data in the so-called LIFE and SPOUSE files for the informant and spouse, respectively.

Table 1. Demographic and labor characteristics of the foreign-born population at the third year since migration (tm+2). Migrants of Dominican, Peruvian, and Venezuelan in Montevideo 2018

	Dominican Republic	Peru	Venezuela
Percentage	31.3	32.1	36.6
Female (percentage)	62.1	70.5	52.6
Mean age at migration (se)	30.0 (0.29)	30.1 (0.21)	30.7 (0.16)
Mean years 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 tm+2 (percentage)			
Not in labor force	5.9	11.7	4.9
Unskilled	65.5	54.0	14.0
Skilled manual-Low skilled non-manual	21.1	27.4	48.5
High-skilled non-manual with technical education	3.5	3.1	13.0
High-skilled non-manual with university education	0.1	3.7	18.0
Unemployed	3.4	0.0	1.1
Unknown	0.5	0.0	0
Total	0	0.2	0.8
Educational Match at tm+2 (percentage)			
Undereducated	9.7	10.3	8.7
Matched	34.1	27.6	25.5
Overeducated	46.0	50.3	60.7
Unemployed	2.3	0.0	1.5
Non in the labor force/Unknown	6.9	10.3	3.1
Unknown	0.0	1.9	0.5
Total	100	100	100
N	177	145	196

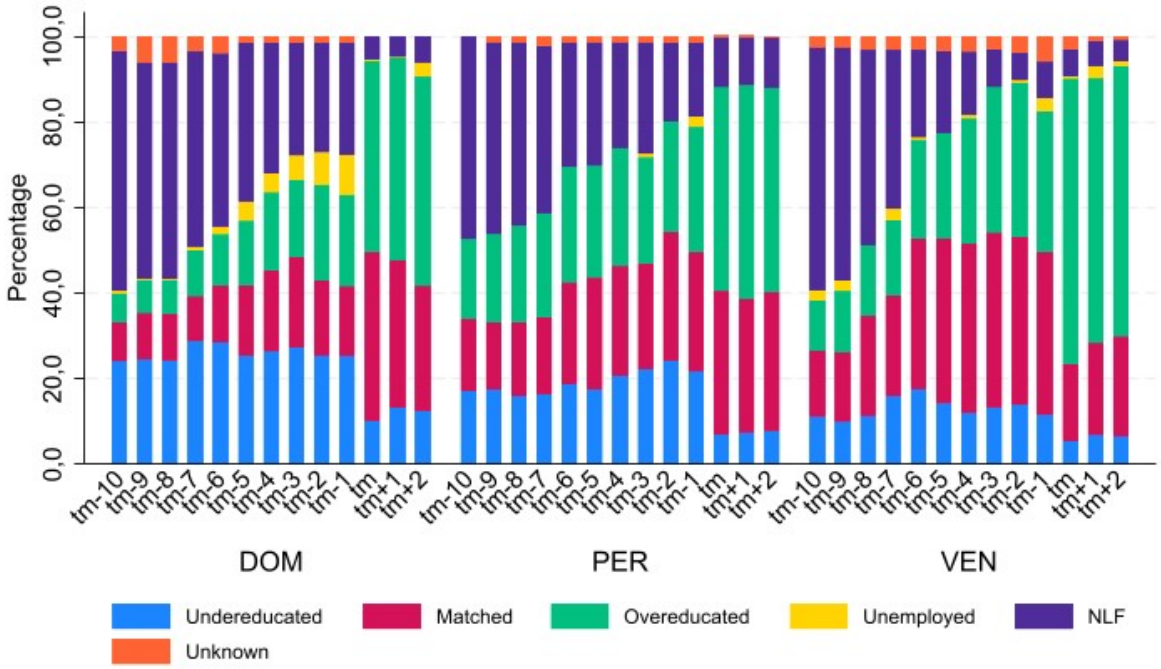
Note: We include all foreign-born individuals at LIFE and SPOUSE ENIR files regardless of the duration of their stay in Uruguay. N=558 individuals.

Source: Files LIFE4 and SPOUSE4 from Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

In contrast, Venezuelans are predominantly concentrated in skilled manual or non-manual jobs or high-skilled non-manual occupations. Notably, while overeducation is more common among Venezuelans, all three communities are mostly affected by this type of educational mismatch at time tm2. However, as can be seen in Figure 1, mismatches arise earlier for most of them. 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. However, 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).

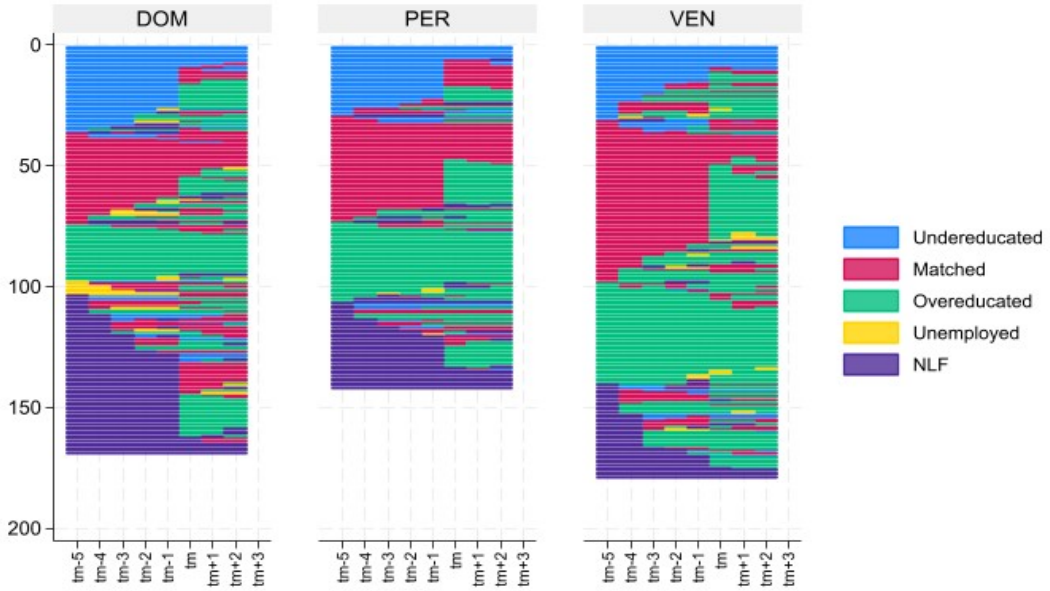
Figure 1. Relative distribution of educational (mis)match by year for ten years before migration and the first three years after migration. Migrants of Dominican, Peruvian, and Venezuelan origin in Montevideo



Note: We include individuals with at least three years of experience in Uruguay. This includes individuals of any age from tm-10 to tm+2. "tm" stands for time of migration (year). N=558 individuals and 7,254 person-years.
Source: Files LIFE4 and SPOUSE4 from Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

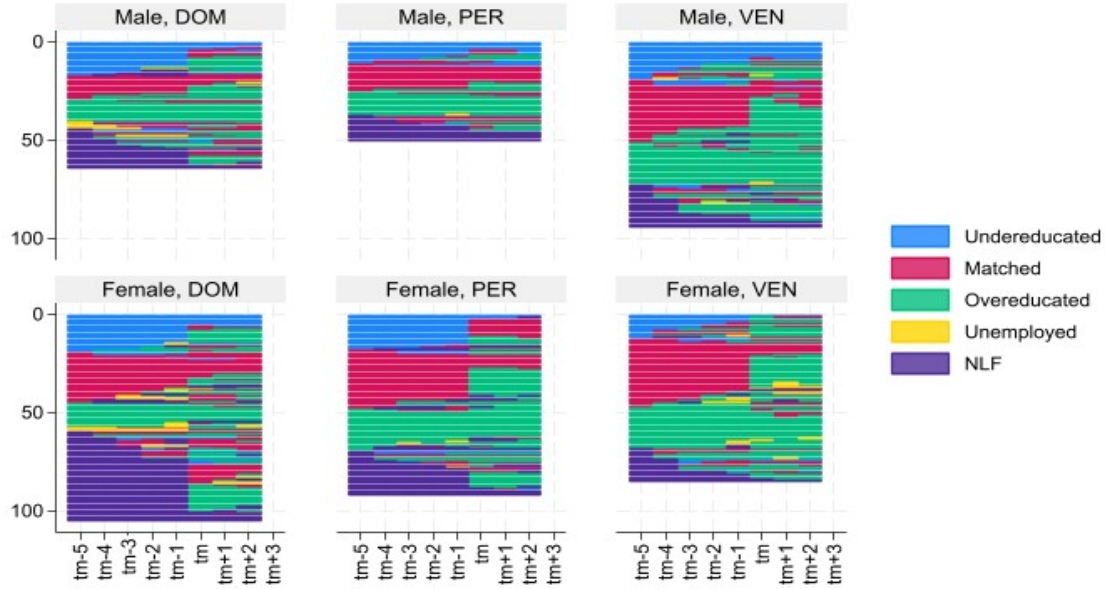
The cluster analysis for trajectories of (mis)match for the five years before migration at the home country yielded four meaningful clusters/types of migrant workers: those persistently working in jobs below their education (overeducated), those consistently in jobs above their education (undereducated), 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 (tm+1 and tm+2) (Figure 3).

Figure 2. Sequence of educational (mis)match for the last five years before migration and first three years at the destination. Dominican, Peruvian, and Venezuelans in Montevideo 2018



Note: We include individuals with at least three years of experience in Uruguay. This includes individuals of any age from tm-10 to tm+2. "tm" stands for time of migration (year). N=491, 3,928 person-years.
Source: Files LIFE4 and SPOUSE4 from Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

Figure 3. Sequence of educational (mis)match for the last five years before migration and first three years at the destination by sex. Dominican, Peruvian, and Venezuelans in Montevideo 2018



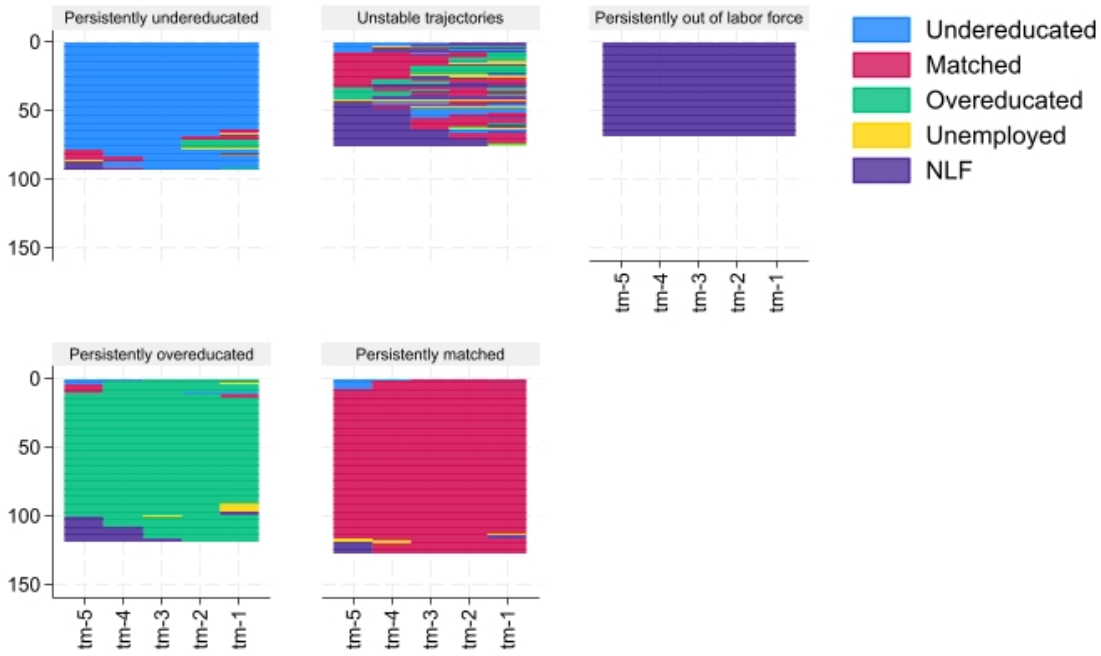
Note: We include individuals with at least three years of experience in Uruguay. This includes individuals of any age from tm-10 to tm+2. "tm" stands for time of migration (year). N=491, 3,928 person-years.
Source: Files LIFE4 and SPOUSE4 from Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

Table 2. Relative distribution of cases by continuity-discontinuity of educational mismatch after migration. Dominican, Peruvian, and Venezuelans in Montevideo 2018

		Continuity	Discontinuity
Male (per cent)			
	Dominican Republic	42.2	57.8
	Peru	66.0%	34.0
	Venezuela	51.1	48.9
Female (per cent)			
	Dominican Republic	30.5	69.5
	Peru	39.1	60.9
	Venezuela	36.5	63.5%
Mean age at migration			
	Dominican Republic	32.5 (1.1)	27.1 (0.7)
	Peru	30.9 (1.1)	32.5 (1.2)
	Venzuela	30.9 (0.9)	31.3 (0.9)

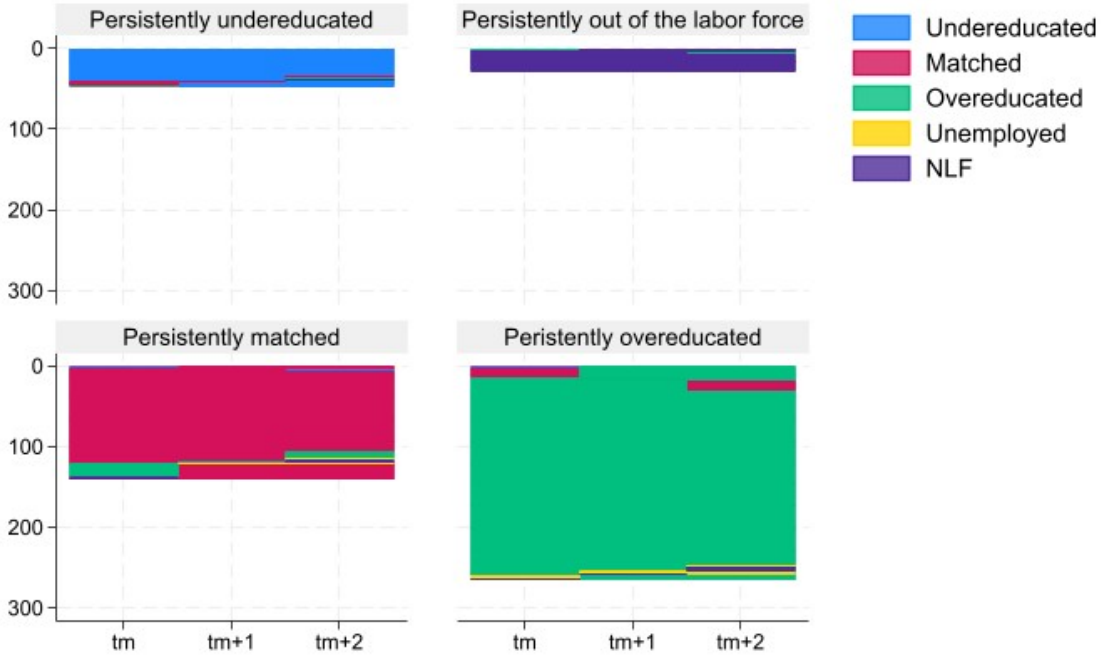
Note: We include individuals with at least three years of experience in Uruguay. This includes individuals of any age from tm-10 to tm+2. "tm" stands for time of migration (year). N=490, 3,920 person-years.
Source: Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

Figure 4. Clusters for educational (mis)match along labor trajectories observed at origin five years before migration. Migrants of Dominican, Peruvian, and Venezuelan in Montevideo 2018



Note: We include individuals who lived in Uruguay for at least three years and were at least 14 years old five years before migration. Data from life and spouse files is used. "tm" stands for time of migration (year). N=480 individuals, 1,440 person-years.
Source: Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

Figure 5. Clusters for educational (mis)match along labor trajectories observed at the destination in the year of migration and two subsequent years. Migrants of Dominican, Peruvian, and Venezuelan in Montevideo 2018



Note: We include individuals who lived in Uruguay for at least three years and were at least 14 years old five years before migration. Data from life and spouse files is used. "tm" stands for time of migration (year). N=480 individuals, 1,440 person-years.
Source: Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

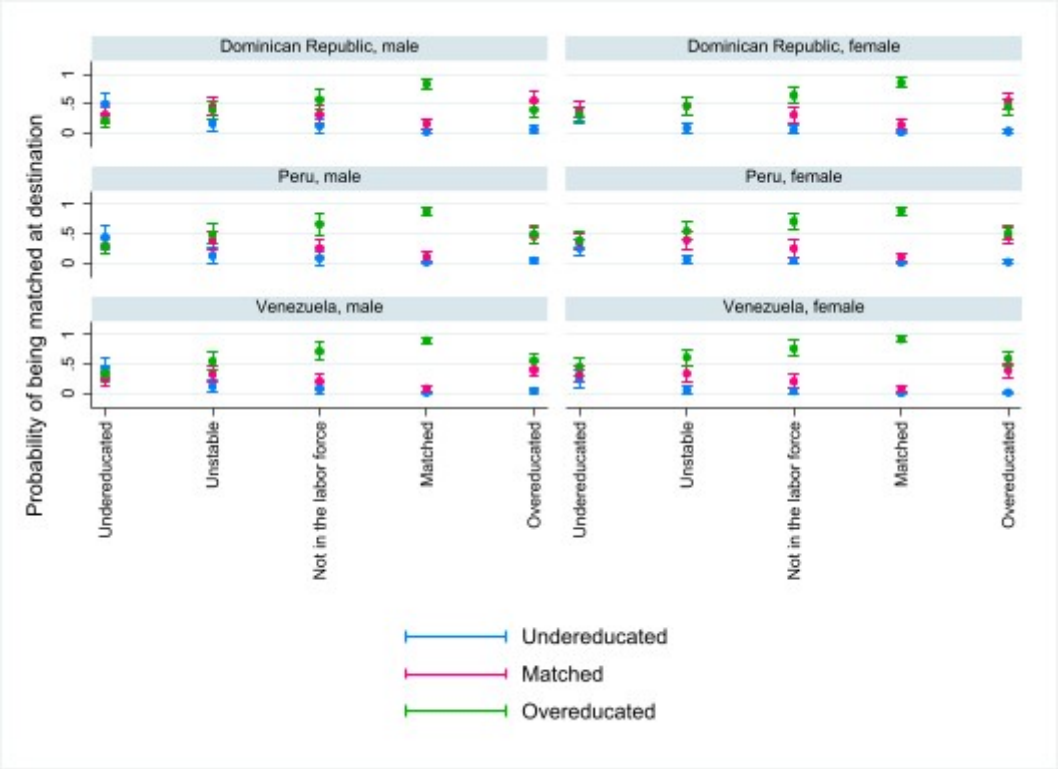
Table 3. Descriptive statistics of cluster labor trajectories observed at the destination. Migrants of Dominican, Peruvian, and Venezuelan in Montevideo 2018

	Persistently undereducated	**Persistently out of the labor force**	**Persistently matched**	**Persistently overeducated**
Dominican Republic	44.7	28.6	40.0	29.4
Peru	25.5	50.0	28.6	27.6
Venezuela	29.8	21.4	31.4	43.0
Male	59.6	35.7	40.7	40.8
Female	40.4	64.3	59.3	59.3
Mean age at migration	32.6 (1.4)	29.8 (1.3)	30.9 (0.7)	32.5 (0.5)
Mean year schooling	8.9 (0.6)	7.4 (1.3)	12.0 (0.29)	14.3 (0.13)
Mig. cohort before-2015	66.0	75.00	67.14	53.58
Mig. cohort 2015-2017	34.0	25.0	32.9	46.4
N	*47*	*28*	*140*	*265*

Note: We include individuals who lived in Uruguay for at least three years and were at least 14 years old five years before migration. Data from life and spouse files is used. "tm" stands for time of migration (year). N=480 individuals, 1,440 person-years.
Source: Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

The specific cluster analysis for the trajectories observed during the five 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.

Figure 6. Predicted probability of being matched, overeducated, or undereducated in the first three years at destination. Migrants of Dominican, Peruvian, and Venezuelan in Montevideo 2018



Note: We include individuals with at least three years in Uruguay, and at least 14 years old five years before migration. Data from life and spouse files is used. "tm" stands for time of migration (year). N=480 individuals, 1,440 person-years.
Source: Ethnosurvey on Recent Immigration, Montevideo 2018. Latin American Migration Project.

The estimated models show that, regardless of gender, community of origin, and (mis)match trajectory at origin, it is more likely to be persistently overeducated in Uruguay, which points to a destination effect. However, such probability (persistently overeducated) increases for individuals who were persistently matched at their country of origin (Figure 6). Additionally, people who, for the first time, enter the labor market at the destination are more likely to do so following an overeducation pathway in Uruguay. Then, when the undereducated condition comes from the origin, the probability of following undereducated, matched, or overeducated trajectories remains the same. Finally, those who arrive in Uruguay after a labor trajectory of persistent overeducation have similar odds of holding to such a state or following a matching pathway.

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