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The skilled diaspora: an analysis of the situation of Mexicans with higher education in the United States

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Abstract

This research analyzes the skilled migration of Mexicans to the United States. In particular, it studies the mismatch between educational training and job opportunities in both Mexico and the United States with the construction of three contrasting groups: 1) Mexicans in Mexico with higher education, 2) Mexicans in the United States with higher education, and 3) Americans (white/non-Hispanic) with higher education. A recent period (2022-2023) is studied where 33% of migrants in OECD countries, including the 1,313,666 Mexicans in the US, have post-secondary education, of which only 42.8% obtain professional jobs in line with their training. The Mexican National Occupation and Employment Survey (ENOE) and the US Integrated Public Use Microdata Series (IPUMS) were used as sources of information. The study categorizes individuals by nationality and education, focusing on gender differences and the wage "premium" of education. Among the results, it was found that Mexicans with higher education in Mexico have a higher wage "premium" in relative terms compared to those who migrate and that Mexican women abroad have a smaller gap relative to US women. At the same time, male migrants have a more significant wage gap than their US peers.

Key Words

Skilled Migration, Salaries of Professionals, Returns to education

Introduction

Globally, among the countries belonging to the Organization for Economic Cooperation and Development (OECD), 33% of the migrant population is skilled, that is, has at least one higher education and/or postgraduate degree, in terms of volume this represents 38,332,762 people

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(López, Isidro and Reyes, 2022). Of these, 1,313,666 migrants are in the North American region, where it is relevant to note that Mexican migration is characterized as unidirectional since more than 90% of the population that emigrates does so to the United States of America (USA) (BBVA-CONAPO, 2023). Data from the American Community Survey (ACS) indicate that there were 10,242,681 Mexican migrants in the United States in 2022 (IPUMS, 2022). It is also important to note that in recent years there has been a significant slowdown in Mexican migration to the United States, which is also reflected in the indicators of skilled migrants, for example, according to data from Lopez, Isidro and Reyes (2022) from 2010 to 2015 there was a 17.3% growth in skilled migration, while between 2015 and 2020 the growth was lower at 13.7%, however, in terms of volume the growth was from 818,620 in 2010 to 1,091,944 in 2020. All these people, who have at least one year of college, are not necessarily inserted in skilled jobs or jobs in line with their profession, for example, only 42.8% of Mexican migrants in the U.S. work in professional occupations and the rest perform various jobs such as service work, sales, and even manual labor (BBVA-CONAPO, 2023). The above data reveal that there is a continuous migration in terms of volume of qualified Mexican people who mainly go to the U.S. where they are not always inserted in jobs according to what they studied. This has an impact on the country of origin due to the loss of talent and therefore limits the country's possibilities for economic development. This paper analyzes the characteristics of Mexican professional workers in Mexico and the United States in order to compare the characteristics of the labor market where they work. In the first section, the theoretical principles that explain skilled migration are discussed, followed by the economic rationale. The methods section explains the procedures applied to the data obtained for Mexico and the United States. The results section presents the composition of the professional labor force for both countries, the wage differences within the groups studied, and finally, the educational returns in both contexts are presented.

Background on skilled migration

The study of the causes and effects of skilled migration can be done from different approaches and theories. In this section we develop the neoclassical macroeconomic and microeconomic approach, as well as the new migration theory to understand the phenomenon we are analyzing.

From the neoclassical macroeconomic approach, skilled migration would be considered to be caused solely by wage differentials between countries, which cause workers to move from low-wage countries to high-wage countries; The neoclassical microeconomic approach stipulates that the potential migrant estimates the costs and benefits of moving to alternative international locations and relocates where the expectations of net benefit are greater in the perspective of time (Borjas, 1990); the postulates of the new migration theory shift the focus from the subject to the family economic unit, i.e., the household. This theory proposes that in the face of the ups and downs of national economies, households diversify their opportunity to increase their income by having one or more of their members migrate temporarily or permanently in order to sustain a constant flow of money from abroad. Under this theory, whose most prominent exponent is Oded Stark (1984; 1991), postulates were derived that marked a milestone in the study of migration and that include

the role of government actions in influencing migration rates. According to Massey et al. (2008) among the postulates of this current of the New Migration Theory are:

> […] 6. Governments can influence migration rates not only through policies that intervene in the labor market, but also through policies that shape the insurance, capital, and futures markets. Public insurance programs, particularly unemployment programs, can significantly affect incentives to move internationally.
> 7. Government policies and economic changes that shape income distribution will change the relative deprivation of some families and thus alter their incentives to migrate.
> 8. Government policies and economic changes that affect income distribution will influence international migration independently of their effects on average income. In fact, government policies that produce high average incomes in areas of origin countries may "increase" emigration if "relatively" poor families do not participate in the rise in income growth. Conversely, policies may reduce emigration if the "relatively" rich do not participate in such an increase in income.

The above is intended to highlight that, although international migration for labor reasons responds to wage differences between countries, it can also originate from individual or family factors and, above all, that the role of the State through the government has an impact by creating incentives to regulate migratory flows.

This paper postulates that, although individuals have the capacity to make rational choices about where to work, the labor market context influences the decisions they make. In this sense, knowing the labor structure of the country of origin and the receiving country is important to understand the expulsion potential of a country.
According to Bautista (2017) in 2015 in the United States of America (USA) there were 8% of professional jobs equivalent in terms of volume to 11.1 million jobs, on the other hand, in that same year in Mexico only 3% were in the same category equivalent to 1.3 million, indicating that in the neighboring country in a structural way there are more job positions to be placed when you have a professional educational degree.

Human capital theory and mismatches with wage reality

The theory of human capital, supported by economists such as Schultz (1961) and Becker (1990), explains that the degree of schooling in relation to the salary received generates a convex function, since there is evidence that each additional degree of schooling corresponds to a higher salary. This is because schooling, being an intangible good, increases human capital that generates material gains, can be measured with rates of return on investment and measure productivity levels. These procedures helped to consolidate the theory and make it the standard for the development policies of countries open to capital market influences. Initially, it was considered that when people understood that education was necessary to acquire human capital and that with it they would increase their quality of life, they would be willing to educate themselves; however, a set of externalities that condition human capital, such as access to educational services, economic condition and family nucleus, were not analyzed (Acevedo, 2018).

Villareal (2018) explains that human capital focuses on the hypothesis that establishes a direct relationship between education, economic development, income and progress and that the founders of human capital theory argue that education should be conceived as an investment that individuals make with the purpose of increasing their human capital endowment, which will result in an increase in their productivity and, therefore, contribute to the growth of economies. From the 1970s onwards, studies on capital and education showed that the cultural and socioeconomic environment gave advantages to groups over others, which discarded the idea of a fair and balanced society promoted by the original idea of capital (Morduchowicz, 2000).

With the above, the main idea of the human capital theory and its limitations with respect to the current labor scenario, the signaling theory was found (Arrow, 1973; Spence, 1973; Stiglitz, 1975, as cited in Paredes & Bara, 2003), which establishes that education has the basic objective of serving as an informative instrument (or reference) for employers, as a reference for other types of information on the characteristics of the worker. The idea of human capital admits that the most capable individuals for the world of work, in general, are those with the most schooling (Paredes & Bara, 2003). The argument that education serves to signal or increase productivity has implications for educational policy and, in this sense, lies the importance of analyzing educational returns in the labor market. The fact that an individual has a higher level of income thanks to his or her schooling, regardless of his or her productivity and without taking into account the signaling effect, affects the rate of return on education, thus obeying the principles of human capital theory and ignoring the fact that variables such as productivity level, age and experience play a fundamental role in the labor market and even determine to a greater extent an individual's salary. Currently, education has a social impact, especially in developing countries, where it is often considered a privilege rather than a fundamental right. If the education-income relationship were governed by the laws of "signaling", schooling would have a less obvious social effect, as a scheme to help assign the right individual to the right job.

All customers in the market want to enjoy the good offered by the best producer, which is produced with the technology that allows the best producer to offer it to all customers at a low cost (Mankiw, 2012). As human capital arguments, educated personnel are creative, innovative and capable of implementing a better use of technology, which generates substantial benefits in work

environments. It is considered that, in the productive sphere, people who have studied are less likely to be unemployed (Acevedo, 2018). Indicators, such as the unemployment rate, are considered relevant to raise economic returns, in addition, they influence other areas of social interest.

On the other hand, the remarkable growth of the educational field in most economies in recent decades has raised the fundamental question of whether the labor market has the necessary aptitude to generate highly skilled job opportunities. In this context, the ability of the market to take full advantage of the investments made at both the individual and societal levels in education is questioned.

In this research, the term educational mismatch or professional mismatch is used, which is defined as the difference between the level of schooling acquired by the subject and the level of schooling required for the occupation in which he/she works. Duncan and Hoffman (1981) stratify the economically active working population into three categories to measure educational mismatch.

i. Overeducated: a worker who performs an occupation that requires a lower level of schooling than he/she possesses.
ii. Undereducated: a worker who performs an occupation that requires a higher level of schooling than he/she possesses.
iii. Adequately placed: a worker who performs an occupation that requires a level of schooling equal to the one he/she possesses.

Labor mobility theory addresses the notion that overeducation is not necessarily a persistent state (Sicherman & Galor, 1990). According to this theory, workers have the ability to perform temporary functions in jobs that provide them with specific skills, which they can later apply in a higher-level occupation. This approach holds that individuals acquire skills and experience in a particular occupation for the purpose of moving to another occupation involving a higher level, with a consequent decrease in overeducation.

Within the framework of the analysis of hiring dynamics, another perspective can be found in the labor competence model proposed by Thurow (1975). According to this theory, employers use personal characteristics, among which education stands out, as fundamental criteria in their personnel selection processes. Education, in this context, is conceptualized as an indicator that reflects an employer's willingness to invest in an employee's training and development.

Thurow's model proposes two distinct queues. In the first instance, workers form a queue to access jobs whose relative position depends directly on their educational attainment. The second queue, on the other hand, is composed of jobs ranging from the least demanding in terms of training to those demanding the highest qualifications. From this perspective, the model argues that workers find a continuous incentive to seek higher education, as this allows them to move up the queue towards higher quality jobs. The job classification is set according to the level of training required, so that the wage offered not only reflects the worker's productivity, but also the costs associated with their on-the-job training.

Since high-quality jobs are limited, only a few workers will have access to them, and those with higher levels of education will be assigned to lower-quality jobs that demand comparatively less education. In this context, employers can hire more educated candidates, even if they do not fully match the job requirements, to reduce training costs in the long run. In the same way, Sattinger (1995) exemplifies this type of labor market imperfections as follows: Assuming that there is an increasing relationship between lower productivity workers and average productivity jobs; subsequently, these same jobs will not be available to average productivity workers. These externalities arise when the labor relationships formed have lower output compared to unrealized

potential relationships. The employer and employee, in deciding to formalize the employment relationship, do not directly consider the loss of these future more productive relationships[1].

The labor market, according to Sattinger (1995), creates wage differentials based on characteristics that allow the worker to select the job he/she would obtain in an optimal assignment. This selection process presupposes that both workers and employers possess complete and total knowledge of the vacancies and skills available in the market. However, this condition is unrealistic in an economy where information is asymmetric and search is necessary. Sattinger's (1995) efficient allocation model defines efficient allocation as that which maximizes output given the existence of informational constraints. Search becomes an essential requirement in this context, as economic agents must navigate through incomplete information to form productive pairings. In addition, Sattinger (1995) introduces a method for calculating the opportunity costs of workers and jobs, which differ systematically from the reservation wages and profits that workers and employers use to determine whether to form matches. Ex ante differences between workers and jobs generate labor market externalities, resulting in inefficient allocations of workers to jobs and the possibility of multiple equilibria. Intervention in the labor market, by altering the allocation, can increase aggregate output but can also lead to regressive redistributions.

Freeman (1976), being motivated by the notable increase in the number of college graduates during the 1970s in the United States. This phenomenon led to a decline in the returns associated with college education. Freeman's (1976) study reveals that, in a span of only six years, the earnings premium for recent college graduates experienced a significant reduction from 40% to 16%. This decline raised concerns about possible overinvestment in college education in the United States, giving rise to the fundamental question of the cost- effectiveness of college education.

According to this theory, the wage associated with college education decreases in response to the increase in the supply of highly educated workers. This phenomenon can be explained by firms adjusting their production technology to take advantage of the now cheaper and more abundant highly skilled labor force. It may also occur through a competitive process among highly educated workers, who compete for a limited number of skilled jobs by not accepting wages that meet their demands (Leuven and Oosterbeek, 2011).

A similar phenomenon occurred in Mexico during the 1980s, specifically the 1990s. Manacorda, Sánchez-Páramo and Schady (2010) have shown that there was a notable increase in the demand for highly skilled workers in Mexico. This phenomenon is attributed to economic openness and technical change biased in favor of jobs requiring specialized skills. This scenario could have contributed significantly to the increase in educational attainment.

In contrast, according to Urciaga (2004), this economic opening, accompanied by less state intervention and regulatory changes in the commercial sphere in 1994, generated an increase in competition that resulted in a decrease in real wages. This situation, in turn, led to an increase in income inequality levels. The Biased Technological Change Hypothesis (BTCH) explains this phenomenon, attributing it precisely to trade liberalization, which has influenced the preference for

hiring workers with specific skills, while at the same time favoring the expansion of the production of goods associated with this labor group. This dynamic has contributed to an increase in the relative wages of skilled workers, while at the same time causing a simultaneous decrease in the wages of less skilled workers. However, the Stolper-Samuelson Theorem (1941) suggests that international trade causes a decrease in the relative wages of skilled workers in a country with an abundance of unskilled labor, the HCTS suggests that these wages should increase. A trend contrary to that expected by the HCTS was observed in developing countries during the 1990s and the beginning of the 21st century. In Mexico, after the signing of the North American Free Trade Agreement (NAFTA), there was evidence of an increase in wages for unskilled workers, as trade liberalization increased the demand for unskilled labor and reduced the demand for skilled workers. As a result, wages for skilled workers decreased and wages for unskilled workers increased, leading to a reduction in wage inequality between the two groups and a trend towards the equalization of their respective wages.

Likewise, the schooling rate increased during the same period. This increase in educational attainment has resulted in a significant decrease in the wage gap since 1998, thanks to the decrease in the economic benefits associated with education. However, research indicates that changes in the demand for skilled labor have been insufficient to offset the increase in the supply of workers with higher education. As a result, the Mexican labor market has not been able to effectively digest the abundant amount of skilled individuals entering it (Lopez- Calva and Lustig, 2009; Campos et al., 2012). However, in both contexts, possessing a surplus of education has been found to have economic value. In recent decades, a significant increase in the unemployment rate of workers with lower levels of education has been

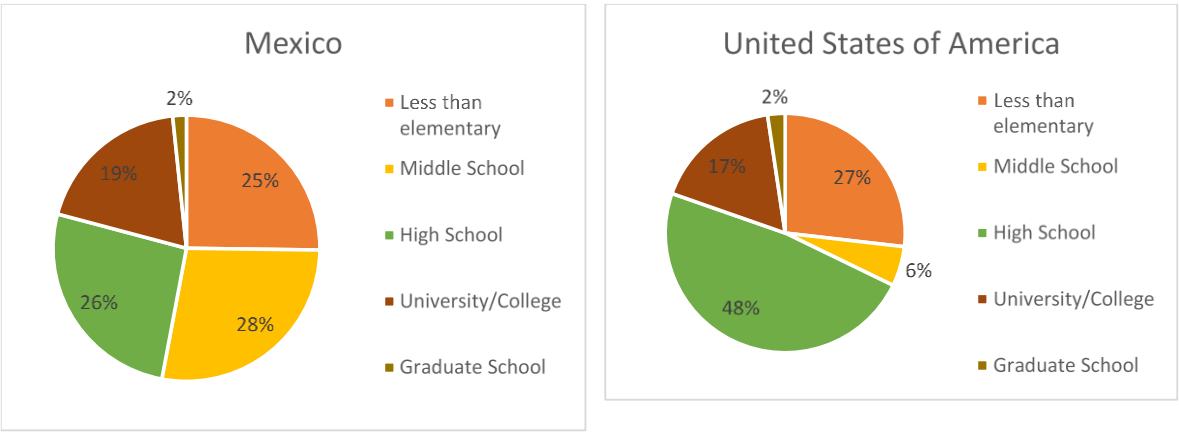
observed in the United States. In contrast, in Mexico, the unemployment problem has mainly affected highly skilled groups of workers. This disparity can be attributed to the prevailing bias in the U.S. labor market, which favors the demand for highly skilled labor. This makes the idea of migrating to a developed country, such as the United States, attractive to the best qualified workers.

Educational Outlook of the Mexican labor force

For the study of skilled migration, it is relevant to analyze the levels of schooling of the population of origin and of the migrant population. In Mexico, during the last decades there has been a generalized increase in the level of schooling in the population, from 8.6 to 9.7 years of schooling on average between 2010 and 2020 (INEGI, 2021). On the other hand, in the United States, in 2010 the average schooling level was 13.2 and in 2020 it was 13.3 years (Our World In Data, 2024) this indicates a process of stabilization of education in that country where substantial increases would not be expected and a difference of 3.6 years of schooling when compared to Mexico.
The gradual increase in schooling in Mexico has led to a concentration of 19% of the population with more than 15 years of higher education and 2% with a postgraduate degree in 2022 (Figure 1); on the other hand, the profile of the migrant population is slightly different given that only 17% has higher education and 2% has a postgraduate degree. Figure 1 also shows that 48% of Mexican migrants in the United States have a high school education, a higher percentage than in Mexico with only 26%.

A review of this data on schooling shows that the Mexican migrant population has a profile that is concentrated in the population with a high school education, which places it above the national average, and that the fact that only 17% of the population has a higher education indicates that there is a process of selectivity when migrating among Mexican professionals.

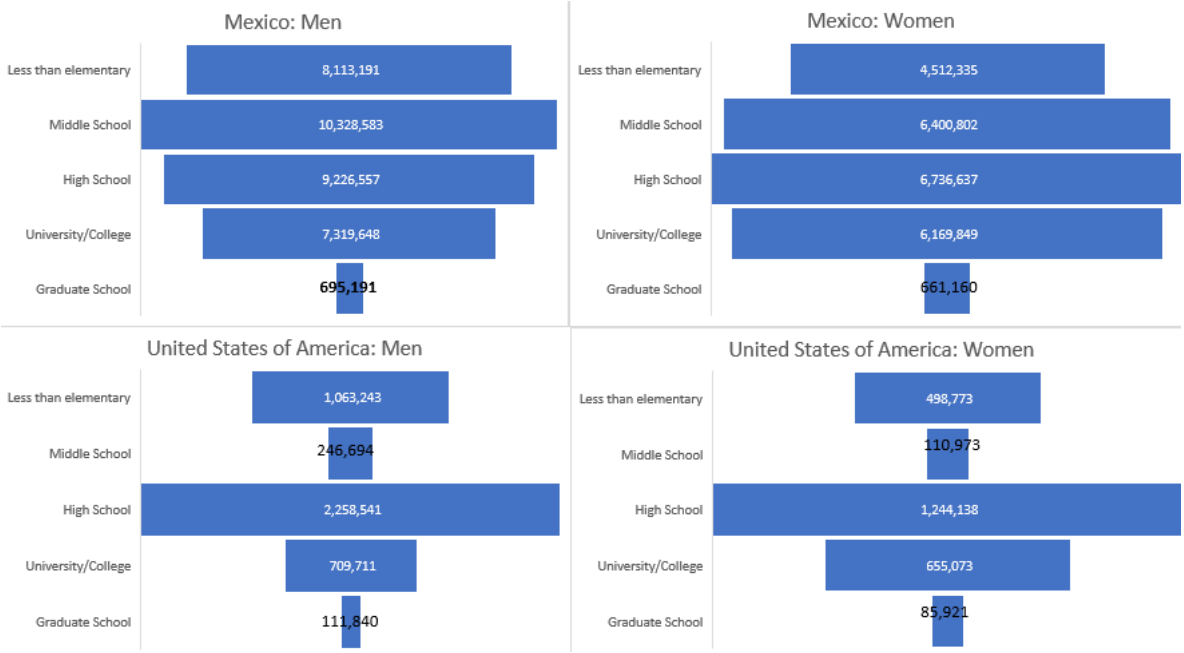
Figure 1. Schooling of the Mexican population over 15 years of age in Mexico 2022 and in the United States 2023.



Source: Own elaboration. Data for Mexico are from INEGI (2023) Encuesta Nacional de Ocupación y Empleo II Trimestre, those for the United States were obtained from the IPUMS platform with the American Community Survey 2022.

In addition to knowing the schooling characteristics of the population over 15 years of age, it is necessary to dimension it in terms of the economically active population in both countries for the population of the place of origin and for Mexican migrants in the United States. Figure 2 shows the size of the labor force of those between 15 and 64 years of age in Mexico (60,163,953) and Mexicans in the United States (6,984,907). First of all, there is a gap between men and women in both countries. In Mexico there were 35,683,170 men and 24,480,783 women, who in correspondence with the general pattern of schooling seen above, concentrate a greater volume of the economically active population in the secondary schooling levels or less. Likewise, the volume of men with higher education stands out at 7,319,648 and that of women at 6,169,849, which in percentage terms represent 20.5% and 25.2% of the labor force, respectively. On the other hand, if we observe the structure by educational level of the Mexican labor force in the United States, we find a concentration of population in the high school level with 2,258,541 men and 1,244,138 women, which in relative terms represent 51.4% and 47.9% (respectively) while the high school level with values of 709,711 for men and 655,073 for women represent 16.2% and 25.2% of the labor force by sex. This last proportion indicates a difference with respect to the male composition of the Mexican labor force in Mexico.

Figure 2. Economically active population by schooling and sex of the Mexican population in Mexico and the U.S., ages 15 to 64.



Source: Own elaboration. Data for Mexico are from INEGI (2023) Encuesta Nacional de Ocupación y Empleo II Trimestre, those for the United States were obtained from the IPUMS platform with the American Community Survey 2022.

The educational and compositional characteristics of the Mexican labor force in Mexico and in the United States point to important differences between them and raise the objective of this research to identify the magnitude of the differences in the labor market between the Mexican professional population living in Mexico and in the United States as an approximation to the determinants of skilled migration. To solve this objective, the following questions are posed about the university-educated population in both countries: In what occupations are professionals inserted? What is the magnitude of the wage differences between the Mexican professional population in both countries? and How much is the gain in terms of wages when studying for a bachelor's degree in both contexts?

Data and methods

In order to carry out this quantitative research, two secondary sources of information are used, in the case of Mexico, the National Occupation and Employment Survey (ENOE) conducted by the National Institute of Statistics (INEGI) (2023) and the Integrated Public Use Microdata Series (IPUMS) (2023) from the United States to work with the harmonized data of the American Community Survey. The ENOE is a nationwide survey representative of 39 cities and 32 states in Mexico and has been collected continuously since 2005. Quarterly results are produced and the type of sampling

used is probabilistic, two-stage, stratified and by conglomerates, where the sampling unit is the private dwelling and the unit of analysis is the household and the residents of the dwelling, data are collected on work from 12 years of age, but results are presented considering the population over 15 years of age. The pandemic modified the form of collection and the factors of expansion of the survey from 2020 to 2022, the year 2023 is selected for analysis when the previous methodology was retaken, which contains a greater number of samples and is conducted face to face throughout the country. The American Community Survey is a survey collected by the United States Census Bureau on a continuous basis and provides information per year about the entire population of the country including Puerto Rico, has a sample of 3.5 million households and is designed to provide reliable information on the social, economic and demographic characteristics of households. The most recent information available from this source is for the year 2022, the year selected for the comparative analysis. Economic characteristics are collected starting at age 16.
Using these sources of information, three groups were identified for study and comparison: a) the population of Mexicans in Mexico with higher education; b) the population of Mexicans in the United States with higher education; and c) the U.S. population (non- Hispanic/white) with higher education. The analysis is done separating by sex in all cases where it is possible with the data.

Table 1. Description of sample size and population under study.

Group	**Sample**	**Weighted population**	**Source of information**
Mexicans in Mexico with higher education studies	48,390 (46.4% women)	12,959,974 (45.8% women)	ENOE II Quarter, 2023
Mexicans in the U.S. with higher education studies	10,831 (49.5% women)	1,320,392 (47.6% women)	IPUMS-ACS 2022
Americans (white/non-Hispanic) with a high school education	474,295 (49.6% women)	45,803,882 (48.9% women)	IPUMS-ACS 2022

Source: Own elaboration. Data for Mexico are from INEGI (2023) Encuesta Nacional de Ocupación y Empleo II Trimestre, those for the United States were obtained from the IPUMS platform with the American Community Survey 2022.

With these populations, this quantitative research first estimates descriptively the occupational structure of people with higher education in order to characterize the occupations in both labor markets, and then studies the differences in wages in the three groups. Through an inferential analysis, the magnitude of the advantage/premium provided by the educational credential is calculated between the groups analyzed and in each context with the calculation of educational returns using the Mincer equation.

Results and discussion

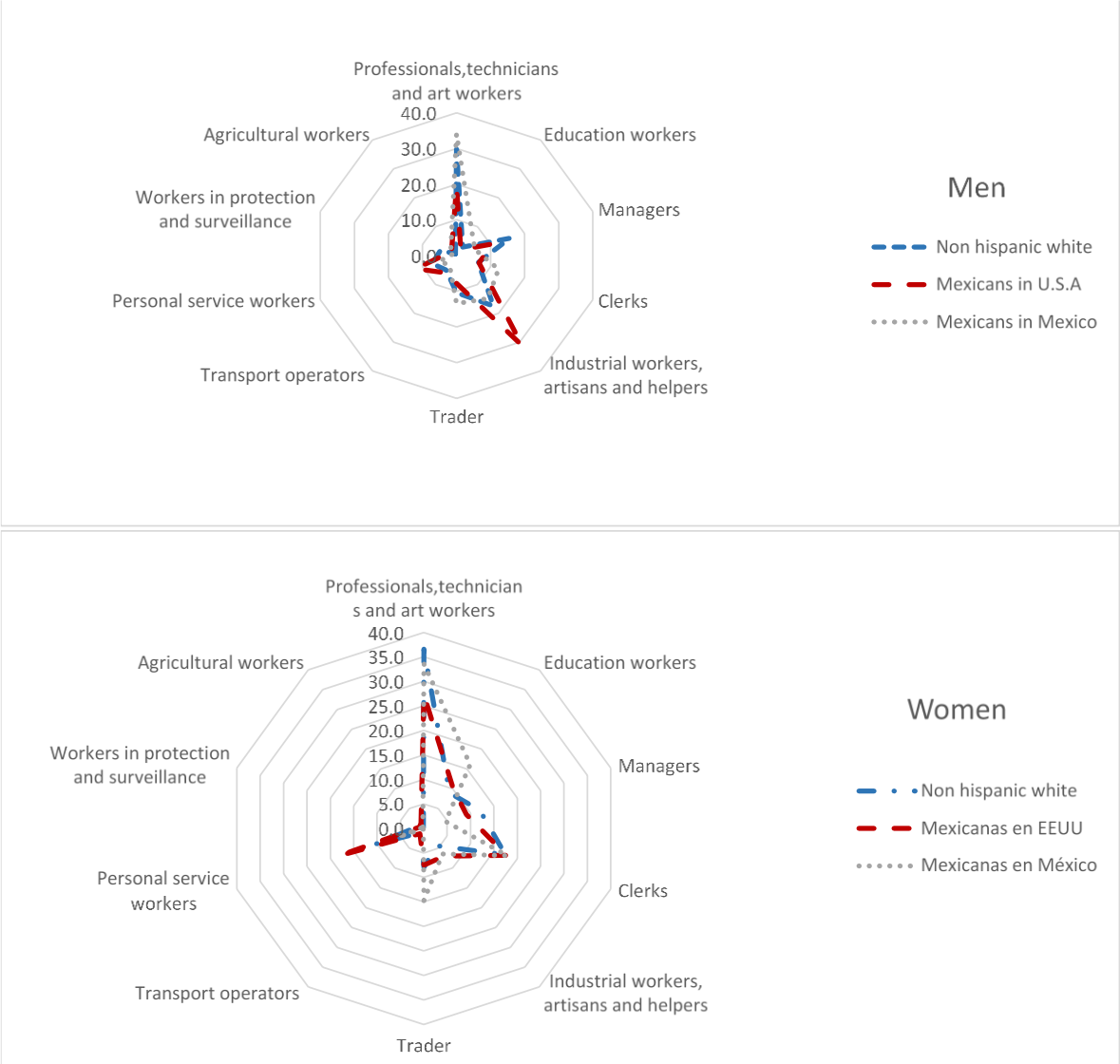
Occupational structure in Mexico and the United States

According to Blau and Duncan (1967), the organization of labor in the capitalist economic model has a stratification premise that has been addressed by different economic and sociological theorists, from Marx's class struggle, Weber's distinction in social systems marked by prestige and the organization by social origins proposed by Blau and Duncan; there are also other approaches linked to the subjective prestige that derives from institutions and falls on the subjects (Zhou, 2005).

In a simplified manner, it can be said that the occupational structure is conceived at the level of relationships established between groups and subgroups that constitute the labor force. Operationally, for this article we took the occupational structure of the working population in Mexico proposed by INEGI (2023) composed of the following ten categories: Officials and Managers; Professionals, technicians and art workers; Education workers, Office workers, Industrial workers, craftsmen and assistants, Merchants, Transport operators, Personal service workers, Protection and surveillance workers, Protection and surveillance workers, Agricultural workers. For comparison purposes, the same categories were constructed with the U.S. data source. Figure 3 shows the results.

The top panel of Figure 3 shows the information for men containing the three selected groups. In the occupation "professionals, technicians and art workers" where by educational credential we would expect a higher concentration of all groups, we found that 34.1% of non- migrant Mexicans are found there, followed by Americans (white, non-Hispanic) with 29.8% and that in opposition only 19.4% of professional migrants in Mexico are in this position. Another occupational position strongly linked to high social prestige is that of officials and managers, in which men (non-Hispanic whites) in the United States have greater access to these positions with 15.6%, while Mexican migrants have 10.7%. In addition, it is striking that, among men, 31.1% of Mexican professional migrants occupy positions as industrial workers, artisans and helpers, an indicator of the selectivity of professions among those who migrate and are mainly oriented to industry and not to services. The lower panel contains the information for female professionals in all three groups. In the category of professionals and technicians, the percentage of non-migrant Mexican women in Mexico is 33.6%, similar to the percentage of their U.S. peers (non-Hispanic white women) who account for 36.6% of the occupational structure, and also highlights the fact that Mexican migrant women account for 27.3% of the occupational structure, which is important in two aspects. The first is the gap they have in relation to their peers in the same country -which, being -9.3 percentage points, is smaller in comparison with that of men- and the second aspect has to do with the difference of -6.3 percentage points in comparison with non-migrant women, both indicators reveal that the distance between professional women in both contexts, at least occupationally, is not as wide as that of men. It is also noteworthy that almost one-fifth of Mexican professional women in the United States are employed in personal services, which is double that of their U.S. peers and almost 4 times more than non-migrant women in Mexico, which is relevant because it has direct implications for the wages they earn.

Figure 3. Distribution of the college-educated workforce by occupation and sex.

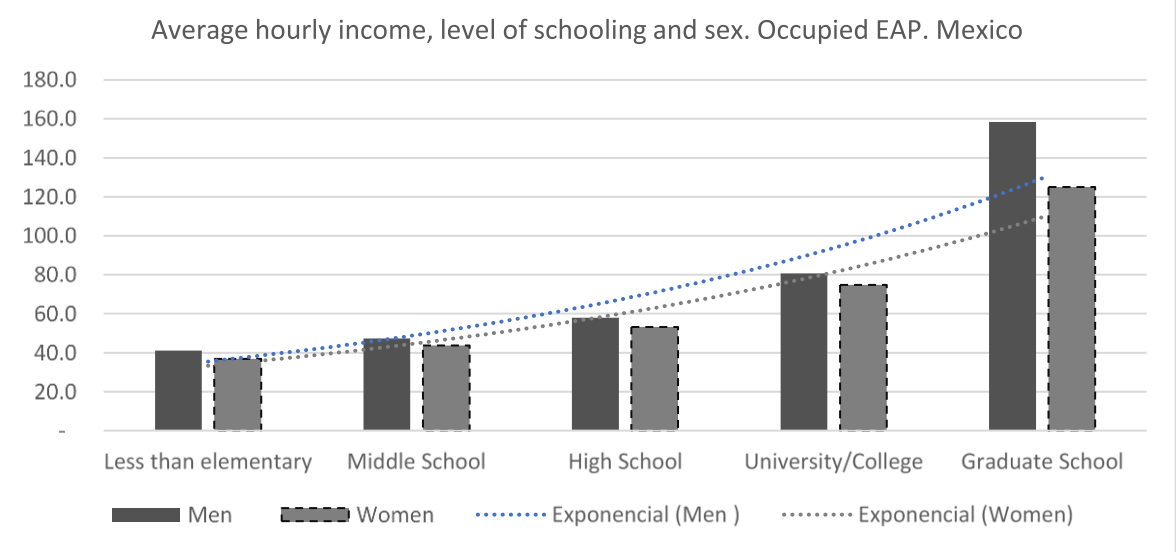


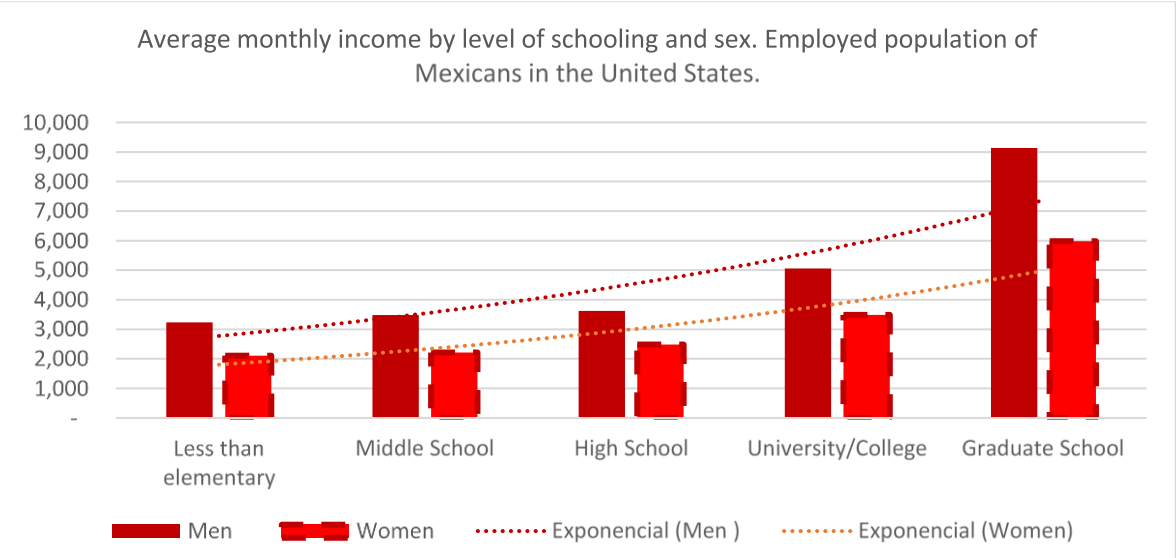
Source: Own elaboration. Data for Mexico are from INEGI (2023) Encuesta Nacional de Ocupación y Empleo II Trimestre, those for the United States were obtained from the IPUMS platform with the American Community Survey 2022.

Wage differentials by occupation for professionals in Mexico and the United States

One more dimension to analyze regarding labor market conditions among the populations studied is the salary received and its relationship with schooling. for this purpose, monthly salaries were calculated (Figure 4).

Figure 4. Calculation of wage differentials between men and women for both countries.





Source: Own elaboration. Data for Mexico are from INEGI (2023) Encuesta Nacional de Ocupación y Empleo II Trimestre, those for the United States were obtained from the IPUMS platform with the American Community Survey 2022.

The upper panel contains information on the population in Mexico, in which it is observed that the median hourly wage increases as the individual advances in education level, with a variation after

passing from high school to higher education of approximately 39.4% for men and 40.61% for women, which translates into a greater benefit for professional women with respect to those who do not have this level of education, similarly in the case of men.

The compensation in terms of the worker assuming the cost of studying for a postgraduate degree increases to a greater extent in the case of men, with a salary 96.20% higher; while, for women, the reward for assuming this same cost benefits her by 67.23%. This shows us that there is an important salary gap due to the gender of the individual within the formal labor market, which tends to reward the better qualified man to a greater extent.

Similarly, analyzing the minimum and maximum acquired for both genders, it is observed that, as the individual advances in level of schooling, the average minimum figure provided by this advancement increases. This effect occurs for both men and women. In addition to the above, the figures presented in terms of minimums in Figure 10 show that women with higher education obtain a salary 64.89% higher than men with the same characteristics, and the same is the case for women who have a postgraduate degree, which gives them a salary 1.92% higher than that of men who have the same. For both genders, the individual who receives the maximum average figure is the one whose socioeconomic characteristics, knowledge and experience benefit him significantly in comparison to the one who does not possess these to the same extent. Once the above is delimited, it is observed that in general terms, the professionalized worker tends to earn -35.42% more than the one who does not have this status; similarly, the one who has a postgraduate degree tends to earn -11.92% more than the one who has a higher education. Once the figures are segregated in terms of gender, we observe that in terms of maximums, men with higher education earn a salary 50.33% higher than those with a high school education; similarly, men with a postgraduate degree earn -2.18% less than those with a higher education. This same gap is present and widens in the case of professional women, since they earn -66.78% less than those who do not have higher education; likewise, those who have a postgraduate degree earn -28.05% less than those who have higher education.

In general, the Mexican formal labor market tends to benefit those individuals who are young within it and those who receive minimum wages with respect to their level of education and skills. The former are rewarded for assuming the cost of having a certain level of schooling, although most of them receive a low salary together with the promise of acquiring "experience" within the industry or sector where they decide to settle; similarly, the latter are supported with tax benefits, transfers, etc., however, this monetary benefit does not extend to those who have some type of "over-education", experience and suitable characteristics for the work they do. However, this monetary benefit does not extend to those who have some type of "over-education", experience and suitable characteristics for the work they do, leading them to become unemployed, drop out of the formal labor market or migrate to a country with "better" labor indexes. The lower panel of Figure 4 presents the information for the Mexican migrant population in the United States. When analyzing the U.S. labor market data with the first generation Mexican migrant population as the subject of

study. The processed information shows a positive exponential behavior in terms of the average monthly salary received as one has a higher level of schooling, which varies by an average of 32.66%, with the graduate level having the highest average salary with respect to their previous level of studies, with 7,538.54 US per month; however, only 3.04% of the observations have such a salary. Approximately 49.94% of the individuals have an income of 3,053.10 US per month; this proportion belongs to the upper middle school level. Highly qualified personnel represent 23.31% of our population, which has an average monthly salary of 5,914.69 US and an approximate salary variation rate of 58.43%.

In terms of minimums and maximums, the calculated data show that the levels of schooling with the highest minimums are high school and graduate school, with 19.17 US and 4.58 US per month. The upper secondary level is the best rewarding in terms of minimums with respect to the other levels of education. With respect to maximums, the upper intermediate and postgraduate levels have the highest salaries with 60,333.33 US and 63,375.00 US monthly, respectively. The highly qualified worker receives an average minimum of up to 2.92 US monthly with an average variation rate of 190.84% respectively; followed by an average maximum of 60,312.50 US with an average variation rate of 2.79%. Segregating the data in terms of sex, the average salary of Mexican male migrants is 50.70% higher than that of Mexican female migrants (calculations not shown). Men within the subcategory of highly skilled personnel earn approximately 7,093.38 US per month and an average variation rate of 60.14%, this salary is 49.78% above the salary earned by women within the same subcategory, who earn approximately 4,736.00 US per month and a variation rate of 55.95%. If we analyze the minimum and maximum salaries, we find that men preside over the minimums in the levels from elementary school or less to high school, with an average monthly minimum of 8.89 US; while women have an average monthly minimum of 4.83 US, in these levels of schooling, men have a salary variation 700.42% higher than that of women. Nevertheless, Mexican migrant women within the subcategory of highly qualified personnel preside over the minimums with an average monthly salary of approximately 3.75 US and an average variation rate of 425.00%; this income is 80.00% higher than that of men within the same subcategory, who present an average monthly minimum of 2.08 US (calculations not shown). In terms of maximums, the highly skilled Mexican migrant woman is 0.07% above the man with the same characteristics, since she has a maximum average monthly income of 60,333.33 US and an average variation rate of 5.39%; while her counterpart has a maximum average income of 60,291.67 US and an average variation rate of 0.45%. In general, the distribution of minimums and maximums shows a higher compensation for highly qualified Mexican migrant women, who present an average monthly income 40.00% higher than that of their counterparts with the same characteristics, which denotes a decrease in the wage gap for both sexes as they advance in their level of schooling.

Returns on education for professionals in Mexico and the United States

Both schooling and occupations have an intrinsic hierarchical order that has been aligned with the paradigms of human capital accumulation, where it is expected that the highest salaries are concentrated in the highest positions. The study of this relationship between salary, education and

work experience is called returns to education and has been calculated with the Mincer equation. The equation calculates wage income as a function of schooling, is widely used because it returns the average monetary returns provided by an additional unit of education and allows direct comparisons.

The equation is estimated as follows:

$$Ln(\gamma) = \beta_0 + \beta_{age} + \beta_{age}^2 + \beta_{level\ of\ schooling} + \beta_{region} + \varepsilon$$

Where Ln (γ)= the logarithm of labor income.

Age is a continuous variable with values of 15 years and older in the case of Mexico and 16 years and older in the case of the United States.

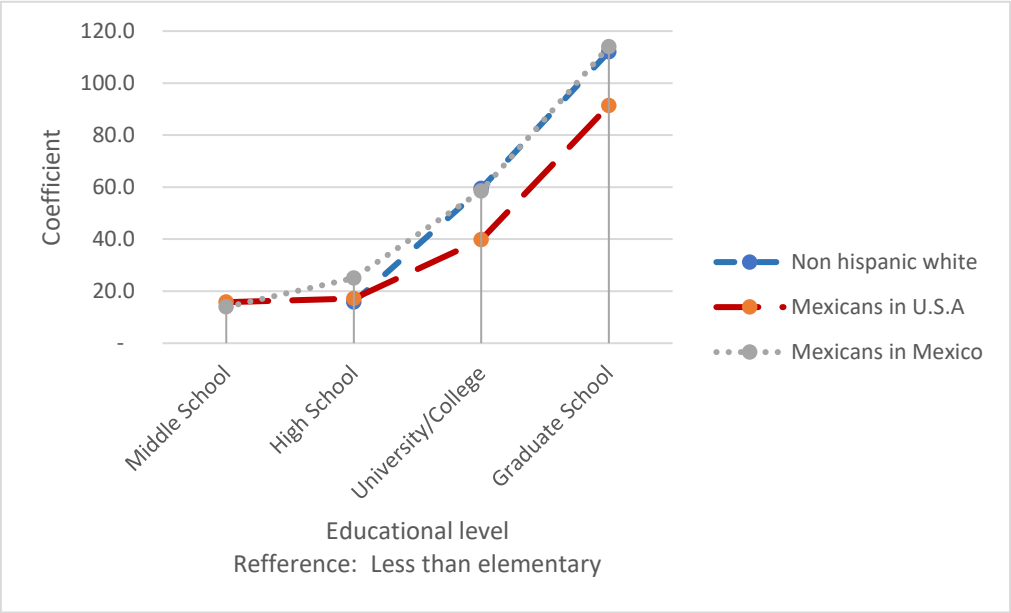
The level of schooling has the values 1= elementary school or less; 2= junior high school; 3= high school; 4= college; and 5= postgraduate.

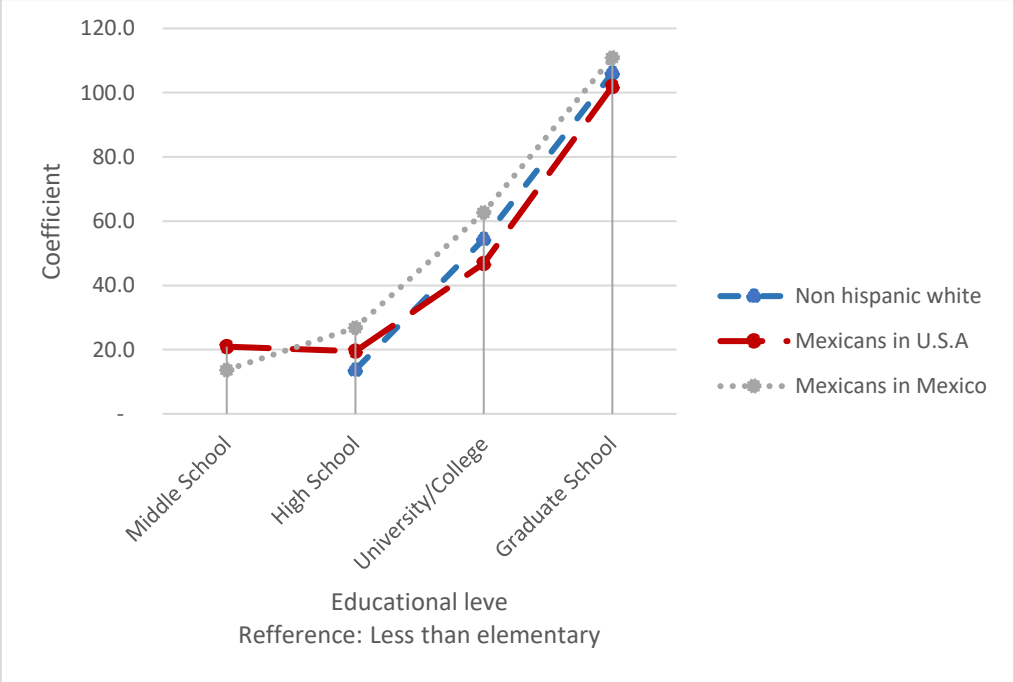
The regions for Mexico are North, North-West, North-Central, Central and South. Likewise, the regions for the United States are: South, East and Midwest and Pacific.

With the two sources, separate models were calculated for each group analyzed and by sex, so that the results would be comparable between countries. The statistically significant results are shown in Figure 5.

The top panel contains the data for the male population and shows that educational attainment has a positive relationship, the more education, the higher the earned income. Overall, when comparing the returns of U.S. men and women (non-Hispanic whites) with Mexican migrants, there is a clear gap and a difference between this group of migrants and their Mexican peers. The data indicate that Americans with a university education have a 59.4% higher performance compared to those with the lowest level of schooling, while Mexican migrants with higher education have a performance of only 39.7%. In the case of women, it is observed that Mexican migrant women with university studies have a performance of 46.8%, which is lower than that of U.S. women, which is calculated at 54.5%, and also lower than that of non-migrant Mexican women with university studies, who have a performance of 61.6%. In the particular case of women, it is observed that the gaps between the groups analyzed are smaller than in the case of men, which indicates that in the labor market, schooling has a higher premium among women in both countries.

Figure 5. Returns to education for the selected population by sex.





Source: Own elaboration. Data for Mexico are from INEGI (2023) Encuesta Nacional de Ocupación y Empleo II Trimestre, those for the United States were obtained from the IPUMS platform with the American Community Survey 2022.

Conclusions and future prospects

Through the comparison of populations, this research provides elements for the discussion of the labor characteristics of migrant professionals in the United States. In a context of stabilization of migratory flows in recent years due to the control policies of the northern country and the contingency of the COVID-19 pandemic, the examination of the salary characteristics of professionals in light of their peers in Mexico and compared with the local population is relevant to evaluate the so-called "education premium" postulated by the Human Capital theory.

The data showed that Mexican migrants have a lower participation in high-prestige occupations compared to U.S. and non-migrant Mexicans. This inequality is more pronounced for men than for women. In addition, there is a tendency or inclination toward industry rather than services among professional Mexican migrants. However, women are distributed more in the service and clerical categories than in any other. In terms of the structure of occupations, this implies an unequal distribution of job opportunities and speaks of a process of selectivity of this population and the creation of specific occupational niches for migrant professionals. Regarding wage differentials by occupation for professionals in Mexico and the United States, there is a significant wage gap between men and women, as well as between migrants and non-migrants. Men tend to be rewarded with higher wages than women, and non-migrants more than migrants. However, the wage gap is smaller among women than among men when looking at their U.S. peers. In addition, it is observed that the Mexican formal labor market tends to benefit young individuals and those earning minimum wages and that there is no policy to encourage better entry into the labor market for young university students.

Regarding the returns to education for professionals in Mexico and the United States, education has a positive return in both countries, i.e., the more education, the higher the income, however, the returns are higher for U.S. than for Mexican migrants. Likewise, women obtain higher returns to education in the labor market compared to men. These results point to a devaluation of the educational credentials of Mexicans, which due to the scope of the data, it is not known whether they were obtained in Mexico or in the United States, and which concretely establishes limitations in the professional practice when one is a migrant.

Finally, after analyzing the behavior of the populations studied, it remains a task for future research to explore the determinants behind the unequal distribution of professionals in occupations and the existing wage gap at a more local level in order to analyze the labor market mechanisms that favor or hinder the professional practice of Mexican migrants.

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