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Intergenerational Education Mobility in Young Beneficiaries of Progresa Oportunidades-Prospera, 1997–2017

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Abstract:

Progresa-Oportunidades-Prospera (Progress-Opportunities-Prosper) sought to increase the human capital of its young beneficiaries to break the intergenerational transmission of poverty and therefore gave an important boost to increasing their schooling. This paper aims to analyze the intergenerational educational mobility achieved by a group of rural youth who were beneficiaries from the beginning of the program. We start from the theory of intergenerational social mobility and analyze the group under study using quantitative techniques using the Panel ENCEL 1997–2017 as statistical input. The results show changes in the educational strata attained by young people concerning those of their parents, with upward mobility predominating (80%). Women, Indigenous people, and migrants had the highest mobility. Although the results were positive, they are considered modest, as most of them barely reached secondary school, a level insufficient to compete in the market for quality employment.

Keywords:

Social policy
Social development
Human capital
Poverty alleviation
Intergenerational educational mobility

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1. Introduction

Inequality, poverty, and social mobility are closely related phenomena. Persistent poverty and inequalities lead to their intergenerational transmission and create barriers to people's social mobility. Intergenerational social mobility is an indicator of the relative well-being achieved within households, as it reflects the relationship between the origin and destination characteristics of

its members in different dimensions of well-being, for example, in education, occupation, and income. Within social mobility, intergenerational educational mobility (MEI) can be seen as an end, when it takes the form of educational attainment, and it can be conceived as a means when it becomes an equalizing factor of opportunities that allows people to increase their skills and improve their qualifications and income in the labor market.

Public policies play an important role in containing and reducing inequalities and poverty levels. Specifically, social programs have focused on addressing aspects of poverty that seek to mitigate the influence of the factors of the context of origin and allow the social mobility of new generations in families living in extreme poverty. The promotion of education has been an essential element in these programs since the last five years of the last century in Mexico.

For twenty years (1997–2018), the *Progresa-Oportunidades-Prospera* (POP) program was the main social policy instrument aimed at serving the population living in extreme poverty in our country. It sought to reverse inequality of opportunities by helping to break the intergenerational transmission of poverty. Its strategy was to provide new generations with monetary and in-kind support to improve their education, health and nutrition. The transfer of resources to households would improve their food consumption and encourage their members to attend health services and children to go to school. In their logic, nourished and healthy children and young people would achieve better school performance.

Education was central to the program because it represented the investment that in the future would provide the possibility of better labor insertion and with it better levels of well-being in families [1]. Therefore, MEI was a necessary mechanism to move from a certain origin to a better educational and social destination.

This article aims to analyze the MEI of a group of young people who were beneficiaries of the POP in different rural areas of the country and to estimate the weight of ascriptive and change (or non-ascriptive) factors in the level of mobility achieved. We sought to answer the following questions: What are the level and characteristics of the MEI achieved by young people, and are there differences by sex, ethnic and migratory status, and state? How do different ascriptive factors (socioeconomic origin, place of origin, and individual characteristics) and factors of change (migration status, time of exposure to POP, and amount of POP support) influence the levels of mobility achieved? We analyze the characteristics of MEI based on educational mobility tables and study the incidence of ascriptive and switching factors on MEI using a generalized ordered logistic model.

Without ignoring the fact that research on MEI exists in Mexico, the innovation of this study lies in analyzing the mobility of a particular group of young people who started from a situation of extreme poverty in rural areas and who, as a result, had access to the benefits of POP. There are precedents for studying the MEI of this group [2,1]; however, here we incorporate a broader period of the intervention, from the start of the program in 1997 until 2017, a year before its cancellation. While this analysis does not constitute an evaluation of the impact of the program on MEI, it does allow us to visualize the changes that the study group experienced concerning the educational attainment of their parents, as well as to identify some factors that influence this process.

Based on the results of previous research on MEI in Mexico, and particularly on the impact of the program on educational indicators and MEI, we expect to find high rates of upward mobility, as well as differences between study subgroups in favor of women, Indigenous people, and migrants. We also expect to find that young people from southern states, particularly Guerrero, have lower levels of upward mobility. Finally, we consider that we will observe an incidence of ascriptive factors that tell us about the weight of intergenerational inheritance, as well as factors of change, which refer to the importance that access to opportunities in more favorable contexts, as well as POP intervention, can have for MEI.

The document is divided into five sections: the first presents the analytical perspective that guides the study; the second describes the characteristics of the program, its objectives, its theoretical basis, and the main results of its evaluations in education; the third explains the methodological design and the source of information; the fourth presents the results, both of the MEI and the analysis of the ascriptive and change factors; finally, the fifth section systematizes the conclusions, articulating an

analytical synthesis of the main findings of the study.

2. Theoretical approach to the study of MEI

2.1. Studies on intergenerational social mobility

Social mobility refers to the changes that members of a society experience in their socio-economic position or status. Social mobility studies analyze the degree and form of association between social origins, understood as the conditions and circumstances of a person's early life, and the nearest point in time, i.e. social destiny [3].

In their analysis, a distinction can be made between intergenerational mobility, which shows the change in position relative to the household of origin, and intragenerational, which describes changes in socio-economic position over the life cycle of individuals [4]. Intergenerational mobility is measured in absolute and relative terms. Absolute mobility reflects changes in living standards relative to those in the household of origin, i.e. intergenerational comparison [5]. Relative mobility shows the "comparative mobility opportunities between groups with different social origins" after controlling for absolute mobility, reflecting "social fluidity and equality of opportunity" [6].

Ganzeboom *et al.* [7] distinguish three precursor generations in mobility studies, which differ in data collection, measurement procedures, methods of analysis, and the definition of research problems. The first generation developed in the post-war period, characterized by studies of social stratification in which occupational mobility was the main topic; the second generation was characterized by the incorporation of models of trajectories of educational and occupational attainment; and the third generation by the use of more specialized statistical techniques based on log-linear models of occupational mobility.

Subsequently, social mobility studies broadened their interests to include the role of family structure, residential segregation, school systems, the labor market, and the welfare state, among other topics [1]. Since the second generation of studies, education has been identified as a relevant factor in social mobility [8].

The MEI makes it possible to contrast changes between parents and children in educational attainment and, therefore, reflects a dimension of inequality of opportunity in society. Inequality of opportunity refers to the weight of ascriptive factors, which are unrelated to the responsibility or merit of individuals, on social destinies [9,10]. Ascriptive factors refer to characteristics such as family socio-economic background, gender, ethno-racial characteristics, and the territorial context of early life, which allows us to understand the effects of the social circumstances of origin on people's destinies [10].

Social stratification can be changed through the incidence of factors that diminish the weight of ascriptive elements in the distribution between origins and destinations. Such factors can be productive, associated with the economic development model; institutional, linked to the segmentation of labor markets or the stratification of the education system; political, referring to the existence or not of redistributive policies; and demographic, in phenomena such as migration or fertility [11]. In this sense, the fact that MEI depends less on ascriptive factors and more on factors of change (or non-ascriptive) would be an indicator of the proper functioning of redistributive policies implemented by the state [4].

For this research, we return to the perspective of intergenerational mobility, with an emphasis on absolute mobility and a particular interest in analyzing educational inequalities based on the study of the weight of ascriptive and non-ascriptive factors on intergenerational changes in educational attainment.

2.2. Studies on intergenerational educational mobility

Research on stratification and social mobility has shown, for Latin America, the persistence and increase of the association between social origins and social destinations in educational attainment [12]. Research by Fernández [13] and Blanco [14] shows the effects of the change in the economic model on social mobility, and demonstrates that students' academic performance is strongly determined by social origins, socio-demographic traits of families, and the existence of favorable conditions for learning in the home; that is, the social origin of individuals is a primary factor in their social destiny. In addition, the works of Martínez [15] and Solís [16] analyze

educational inequality measured in years of schooling and show that Mexico, in comparison with other countries of the Organization for Economic Co-operation and Development (OECD), shows greater inequality mainly due to socio-economic factors.

Other studies that have focused on educational transitions [17,12] show the effects of inequality at each educational level and how the segmentation of educational provision is related to inequality, which has highlighted the existence of divergent educational trajectories. In international studies of this type, a debate has emerged around the fact that the effects of social background on school progression diminish as one moves to higher levels of education [12,18].

Internationally [19], in Mexico [8,12,10], and in some Mexican cities [20], it has been documented that the expansion of educational coverage has allowed access to schooling for the most disadvantaged social groups. However, they point out that such results should be analyzed with caution as they do not necessarily imply an overall reduction in inequality, but simply a transfer of inequality from the basic level to intermediate and higher education [21,12,22]. Moreover, it has been documented that improvements in coverage mostly benefit the more privileged sectors, as they tend to use all their resources to leverage the expansion of education to their benefit [23].

De la Torre [24] and Orozco *et al.* [25] conclude that upward educational mobility in Mexico is high, although limited because educational disadvantages persist between generations, mainly in the southern states, where mobility rates are lowest, and because home conditions continue to determine educational opportunities. They also point out that the burden of educational inheritance can be reduced by improving the quality of public schools and with the help of cash transfers to the most vulnerable households. De Hoyos *et al.* [21], based on the analysis of the effects of education policies, agree that policies aimed at improving the education of the poorest can be a tool for equalizing opportunities in society.

Finally, Rodríguez [26] synthesizes the results of MEI research in Mexico as follows: (a) children mostly have better levels of schooling than their parents; (b) absolute rates of educational mobility are high; (c) absolute mobility rates show a predominance of upward educational mobility as opposed to downward and immobility; (d) relative mobility rates show an increase in the association between educational origins and destinations, i.e. there is greater rigidity in the educational mobility regime; and (e) educational opportunities are presented in a differentiated way, in particular it is more difficult for children of parents with low levels of education to access upper secondary and higher education.

3. Progress-Opportunities-Prospera (POP)

3.1. Background

For twenty years (1997–2018), POP was the central anti-poverty program in the country and was considered a pioneer and international benchmark [27]. It was a conditional cash transfer program that sought to contribute to breaking the intergenerational transmission of poverty by promoting the formation of human capital in new generations [28].

In its beginnings, *Progresa* had a coverage of 300,000 families in rural areas; at the beginning of 2002, its population served had increased to 2.4 million households, two-thirds of which were in Indigenous communities. In that year, when it changed its name to *Oportunidades*, it increased its coverage to the 32 states of the country in rural and urban areas, reaching 4.2 million beneficiary households. By the end of 2018, under the name *Prospera*, it served 6.7 million households in 111,844 localities [29].

Its distinctive features were cash transfers, targeting, conditionality, articulation, and evaluation [30,27]. Cash transfers sought to increase household income and consumption to improve household welfare and encourage the development of human capital. Targeting was intended to ensure that support was delivered to households living in extreme poverty. Conditionality established a system of co-responsibilities for permanence in the program, aimed at ensuring school attendance and health care. Articulation implied the coordination of the program's actions among various ministries and the three levels of government. An evaluation was the mechanism (internal and external) for monitoring and continuous improvement of results.

The actions deployed were organized into three

main components, although during its two decades of operation, other components were incorporated, mostly of a temporary nature. The education component consisted of scholarships and school supplies packages, and its conditionality was recorded through school attendance lists. The health component promoted health care and the provision of food supplements to young children and pregnant or breastfeeding women, with co-responsibility involving attendance at regular check-ups and health talks. The food component provided monetary support to improve household consumption and nutritional status [27].

3.2. Theoretical foundations

The design of the program emerged from a diagnosis carried out between 1995 and 1997, which identified that people's low level of human capital generated a "vicious circle" at the individual-family level, reproducing poverty from one generation to the next [30]. Malnutrition and poor health led to low school performance, which translated into limited productivity, low labor income, and ultimately, the reproduction of poverty patterns [31]. The program had two interrelated objectives: in the short term, to improve the well-being of families by increasing their consumption capacity; and in the long term, to develop the human capital of its youngest members to improve their well-being in the future [27].

Human capital theory underpinned the social and economic role of the program [1]. It hypothesized that investment in the generation of skills and knowledge influences people's future productivity and real income [32]. However, people in poverty, given their circumstances and consumption and investment preferences, were found to have poor human capital [33]. Through transfers and conditionalities, it was sought that households in poverty would perceive education as an investment and not as an expense, assuming that the retribution of investing in education would be reflected in the long term in better jobs and higher incomes [34].

3.3. The educational component

The educational component evolved through the incorporation of educational levels at which the scholarship could be granted, as well as in the recognized educational modalities, which made it possible to expand the number of children and young people receiving its benefits [27].

The support originally granted to families consisted of educational scholarships and resources for the purchase of school supplies for each child studying between the third year of primary and the third year of secondary school [30]. From 2002 onwards, scholarships were granted for upper secondary students in the school-based modality, in 2014 the non-school-based modality was incorporated, and in 2016 the mixed modality was added. In 2012, scholarships were added for the first and second year of primary school in rural areas to encourage children to enter school on time. Finally, scholarships for higher education were included in 2016 through co-financing schemes with the National Coordination of Scholarships for Higher Education [27].

The amounts of the scholarships were defined to discourage children from entering the labor market, taking as a reference the income they received from working [30,28]. The amount offered was different for each level of education and increased with increasing levels of schooling. The amounts were equal for men and women in primary school; but from secondary school onwards they were higher for women because it was identified that from the age of thirteen onwards they had lower school attendance rates than men.

Scholarships encouraged school attendance and co-responsibilities promoted permanence. The health and nutrition components had an impact on the beneficiaries to guarantee their adequate school achievement, and to achieve the greatest possible accumulation of human capital throughout their educational trajectories. Based on the development of human capital, generated by the investment in the three components, educational mobility was a crucial element to promote social mobility and, consequently, to break the intergenerational transmission of poverty.

Evaluations of the education component showed that the program had positive effects on school enrolment and retention, increased schooling, transition from secondary to baccalaureate, reduction of grade repetition, academic performance, and MEI. More favorable impacts were also documented for women and Indigenous people in several educational indicators, which favored the closing of gender and ethnic gaps that historically persisted in the country. Of these studies, the

following stand out: Skoufias and Parker [35]; Parker [36,37]; Schultz [38]; Behrman *et al.* [39]; González de la Rocha [40]; Yaschine [1]; ASF [41]; Parker and Todd [42]; Parker and Vogl [43]; Acevedo, Ortega and Székely [44]; Mendoza [2]; Gutiérrez *et al.* [45], and Behrman *et al.* [46].

In particular, studies analyzing MEI showed that the program had a positive impact on the upward mobility of beneficiaries after ten years of operation [2]. The educational mobility of program beneficiaries was predominantly upward, was related to the degree of exposure to the program, and was higher for women, Indigenous, and migrants (compared to men, non-Indigenous, and non-migrants, respectively). It is also noted that while MEI was high compared to their parents, it was limited to the educational attainment of their peers in other socio-economic strata, reflecting the weight of origin in education [1,2].

4. Methodological design

4.1. Source of information and delimitation of the study group

The source of information used is the panel database of POP's Rural Household Evaluation Survey (ENCEL) 1997–2017. This panel consisted of ten survey rounds: the first seven were conducted between 1997 and 2000, and information was subsequently collected in 2003, 2007, and 2017. The ENCEL was conducted in a sample of rural localities of high and very high marginalization in seven Mexican states: Guerrero, Hidalgo, Michoacán, Puebla, Querétaro, San Luis Potosí, and Veracruz. The last round of the ENCEL was applied in 334 localities [47].

The present research takes the information from the final round of 2017 to construct the dependent and independent variables, except the variables required for the construction of the household wealth index of origin, which are obtained from the baseline round of 1997.

The analysis also focuses on a sample of 4,467 young people, which was formed according to the following criteria: (1) they were between 18 and 35 years old; (2) they had been part of the households in the baseline round or any of the following rounds conducted until 2000, and were located in the 2017 round; (3) they had been beneficiaries of the program for at least one year; and (4) they had information on their schooling and that of their main provider, the vast majority of whom are fathers or mothers. **Table 1** shows the distribution of the study group by sex, ethnic and migration status, and entity of origin.

Table 1. Distribution of the study group by sex, ethnicity, origin, and migration status

	Frequency	Percentage
Gender		
Female	2,504	56.06
Male	1,963	43.94
Ethnic status		
Indigenous	1,227	27.47
Non-Indigenous	3,240	72.53
Entity of origin		
Guerrero	330	7.39
Querétaro	216	4.84
Hidalgo	816	18.27
Michoacán	634	14.19
Puebla	846	18.94
San Luis Potosí	643	14.39
Veracruz	982	21.98
Migration status		
Migrant	675	15.11
Non-migrant	3,792	84.89
Total		
Total number of young people	4,467	100.00

Source: Own elaboration based on Panel ENCEL 1997–2017

4.2. Methods for the characterization of the MEI

The analysis of the characteristics of the MEI of the study group is based on the elaboration of intergenerational mobility tables, which make it possible to identify absolute educational mobility and quantify the changes between the social origin, i.e. the educational level of the providers, and the social destination, which refers to the level reached by the young person.

For the study of absolute intergenerational educational mobility, an educational strata scheme was used as the main variable (**Table 2**), which allowed the

grouping of the next higher incomplete level of education to the lower complete level, given the importance of completing a level in the labor market.

The mobility tables are represented by a square matrix. It is made up of *Fi,j* persons, based on the fact that there are *i* columns and *j* rows. Each element of the matrix *Fi,j* represents the proportion of persons (in this case of young people) with a destination *j* determined by their provider with an origin *i*. The matrix contains frequencies in each cell, the total of each row is the sum of cases in the row and the total in the lower right corner expresses the sum of all cases in the sample [48].

Table 2. Clustering of educational levels by strata

Strata	Educational levels	Years of education
No basic education	No education Incomplete primary education	No year Less than five years
Primary education	Complete primary education Incomplete secondary education	Six years Seven to eight years
Secondary education	Secondary school completed Preparatory school incomplete	Nine years Between ten and eleven years
Completed upper secondary education	Preparatory school	Twelve years
Higher education	Higher education	Twelve years and more

Source: Own elaboration based on Mendoza [2]

The mobility tables allow the construction of two measures: mobility rates and exit rates. The rates reflect a summary measure of mobility behavior in the study group. They represent the proportion of cases out of the total that experienced immobility or mobility (upward or downward), regardless of the number of positions moved [48]. Based on the above, three parameters were established according to the educational stratum reached by a young person concerning that of his or her provider: (1) long-distance upward mobility, when it is greater in two or more strata; (2) short-distance upward mobility, when it is greater in only one stratum; (3) immobility-downward mobility, when the stratum is the same or lower than that of his or her provider.

Exit percentages record the distribution of destinations for each origin category [48], the sum of which for each category (row) is 100 percent. These percentages can be interpreted as "the probabilities that individuals have of having a certain destination, given each origin, considering structural mobility and relative mobility" [27]. The transition matrix obtained must be square and have several rows and columns equal to the number of educational strata, which are mutually exclusive. Furthermore, the records and numbers in the matrix must add up to one in each of its rows (100 percent probability distributed across the different strata) and must be positive [49]. Each value taken by the matrix *Pi,j* is established from the frequency distribution and reflects the probability of moving from category *i* to *j*, calculated as the quotient of the number of people who moved from *i* to *j* and the number of people who were initially in category *i* [49].

4.3. Determinants of MEI: generalized ordered logistic model

The second phase of the methodological strategy consists of estimating a generalized ordered logistic model to analyze the weight of ascriptive and switching factors on the MEI levels achieved by the young people in the study group. This type of model considers the order of the dependent variable and allows us to obtain partial cumulative probabilities, given that the data violate the proportionality assumption, i.e. it cannot be assumed that the same distance exists between the different categories [50–52].

Table 3 summarizes the variables used in the model. The dependent variable is MEI, defined as a categorical and hierarchical variable, and can have three values: (1) long-distance upward mobility, (2) short-distance upward mobility, and (3) immobility-downward mobility. The independent variables included refer to three types of ascriptive factors: (1) family socio-economic background (household wealth index of origin); (2) place of origin (state of origin), and (3) individual characteristics (gender and ethnicity). Also included are variables associated with three factors of change: (1) migration status, (2) time of exposure to the program, and (3) total amount of monetary support received.

The generalized ordered logistic model was

Table 3. Variables in the generalized ordered logistic model

Variable type		Name	Categories
Dependent		Intergenerational educational mobility	3 = Long distance upward mobility 2 = Short distance upward mobility 1 = Immobility-Downward mobility
Type of variables	**Factors**	**Name**	**Categories**
Independent	Adscriptive	Household wealth index of origin	0 = Low, 1 = Medium, 2 = High
		Federal state	0 = Guerrero; 1 = Querétaro; 2 = Hidalgo; 3 =Michoacán; 4 = Puebla; 5 = San Luis Potosí; 6 =Veracruz
	In exchange	Sex	0 = Male; 1 = Female
		Ethnic Status	0 = Non-Indigenous; 1 = Indigenous
		Migration status	0 = Non-migrant; 1 = Migrant
		Time of exposure to the program	0 = 1 to 10 years; 1 = 11 to 16 years; 2 = 17 to 20 years
		Total amount of support received	0 = Low; 1 = Medium; 2 = High

proposed by Williams [50] and is expressed as follows:

$$P(Yi > j) = g(X\beta j) = \frac{\exp(aj + Xi\beta j)}{1 + \{\exp(aj + Xi\beta j)\}}, j = 1,2,\cdots,M-1$$

Where: M = number of categories of the ordinal dependent variable; Xi = independent variables; aj = cut-off points that are similar to the constants; βj = regression coefficients.

From the above, it can be determined that the probabilities that Y will take at each of the values 1, ..., M are equal to:

$$P(Yi = j) = 1 - g(Xi\beta 1)$$

$$P(Yi = 1) = g(Xi\beta_{j-1}) - g(Xi\beta j), j = 2,\cdots,M-1$$

$$P(Yi = M) = g(Xi\beta_{M-1})$$

First, we obtain the β coefficients that show the direction of the relationship of the independent variables concerning the categories of the dependent variable. Positive coefficients reveal that the higher the value of the independent variable, the more likely the dependent variable is to be in the reference category, in this case, long-distance upward mobility, and negative coefficients show that the lower the value of the independent variable, the more likely the dependent variable is to be in the contrast category, in this case, short-distance upward mobility or immobility-downward mobility [50].

Odds ratios (OR) are then obtained, which indicate the probability that the independent variables are likely to be in either the reference or comparison category of the dependent variable. The odds ratios are obtained concerning the independent variables' reference categories, represented by the value zero (**Table 3**). Finally, the marginal probabilities are obtained for each level of the MEI as a function of the independent variables and their categories.

It should be noted that the analysis has some limitations. The results are valid only for the young people in the study group and, although they can be taken as indicative, they are not generalizable to all POP beneficiaries. Furthermore, the methodological design does not allow attributing the results in educational mobility to the impact of the POP intervention. Finally, because 3.78% (169) of the young people in the study group continue their educational trajectory, it is possible that our analysis slightly underestimates the MEI because they are cases that do not reflect their mobility potential. However, it was decided to consider them in the sample given that the majority (98) are in higher education (in primary, 10; secondary, 32; and upper secondary, 29). Despite these limitations, the results show the characteristics of the MEI of the group of young people

studied, coming from rural households in conditions of extreme poverty, as well as the weight that certain factors have on it.

5. Results of the study on Mei in young Pop beneficiaries

5.1. Characterization of intergenerational educational mobility

To understand the level and characteristics of the MEI achieved by young people and their differences by comparing subgroups (gender, ethnic and migration status, and place of origin), mobility rates and exit rates were calculated. This section describes the results.

The first approach to intergenerational changes in education is shown by the comparative data on the educational strata attained by providers and young people (**Figure 1**). Providers are concentrated in the lowest educational strata, predominantly with no education. On average, they have three years of schooling. In contrast, few young people have no schooling, most have completed secondary school or higher and, on average, have nine years of schooling.

Absolute educational mobility rates complement the description of intergenerational changes. High upward mobility and very low rates of immobility and downward mobility stand out for the total and all comparison subgroups. In all cases, the upward mobility rates indicate that 8 out of 10 young people have a higher educational status than their providers, of which 5 experience long-distance upward mobility and 3 short-distance mobility (**Table 4**).

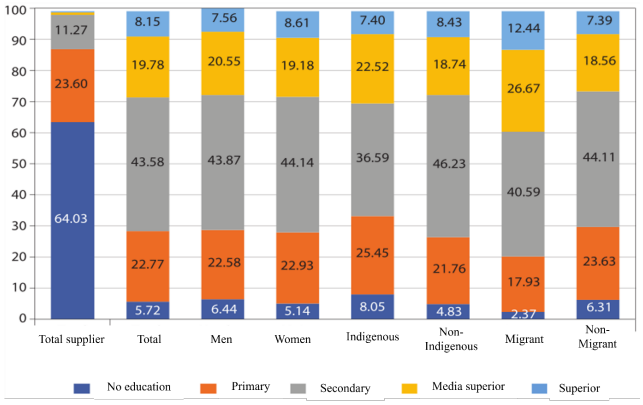

Figure 1. Distribution of providers and young people in the study group by educational background (percentages)

The comparison by sex shows that a slightly higher percentage of women achieve long-distance mobility and a slightly higher proportion of men show immobility-downward mobility, which represents an advance because historically women have lagged further behind. In terms of ethnic status, the MEI behaves similarly in both groups, which could be interpreted as an advance for Indigenous people, considering the historical disadvantages of this group. The comparison by migration status is noteworthy, with migrants having the highest rate of long-distance upward mobility and the lowest proportion of immobility-downward mobility.

In the analysis of mobility achieved according to the state of origin (**Table 5**), similar behavior of the rates is observed in most of the states. The highest proportion of upward mobility (long and short distance) is found in the state of Hidalgo, closely followed by Querétaro, Veracruz, Puebla, San Luis Potosí, and Michoacán. Guerrero, the state with the greatest socio-economic disadvantages among those studied, has the lowest level

Table 4. MEI rates for the total study group and by sex, ethnicity, and migration status

Origin-destination relationship (supplier-youth)

Type of mobility	Total $n = 4467$	Sex		Ethnic status		Migration status	
		Men ($n = 1963$)	Women ($n = 2504$)	Indigenous ($n = 1227$)	Non-Indigenous ($n = 3240$)	Migrant ($n = 675$)	Non-migrant ($n = 3792$)
Long distance upward mobility (%)	50.75	49.92	51.40	50.77	50.74	56.15	49.79
Short distance upward mobility (%)	33.56	33.32	33.75	33.33	33.64	32.15	33.81
Immobility - downward mobility (%)	15.69	16.76	14.86	15.89	15.62	11.70	16.40

Source: Own elaboration based on data from ENCEL 2017

of long-distance upward mobility, only 3 out of 10 young people achieve it. It also has the highest proportion of immobility-downward mobility, at 28.7%, while for the other states, it is less than 17.0%.

Table 6 contains the exit rates for the study group as a whole, the results of which reinforce what has been described above. Despite the high rate of upward mobility, the weights of educational inheritance are also observed. Young people with providers who have lower educational attainment are more likely to reach the lower levels. These young people are 7.9% more likely to remain in the lowest educational stratum and only 5.4% more likely to have higher education, while for young people with providers who have higher education, the odds are zero to remain uneducated and 46.2% to have higher education.

The main diagonal presents the percentages of educational immobility, i.e. the proportion that remained in the same stratum as their providers. The upper secondary education stratum has the highest percentage of immobility. In the total aggregate, the educational stratum most likely to be reached is secondary education (43.5%), and the probability of having a lower educational level (no education or primary education) is 28.4%. While this may represent a difference of up to two educational strata from the provider, the probability of reaching the higher strata is still low: 19.8% for upper secondary education and 8.2% for tertiary education.

The exit rates by subgroups show the same pattern as the aggregate group (**Table 7**). For all subgroups, high rates of upward mobility are observed, as well as a pattern of intergenerational inheritance. However, it is relevant to highlight some differences between them. In the comparison by gender, there is a slightly more favorable difference for women, mainly from the analysis of the two extreme strata. Regardless of the stratum of the provider, the probability of being in the stratum with no education is slightly higher for men (6.4%) than for women (5.1%), while women are more likely to have higher education (8.6%) than men (7.6%). However, for both subgroups secondary education is the level most likely to be attained, being slightly higher for females (44.1% compared to 42.9% for males).

Table 5. MEI rates according to the entity of origin

	Origin-destination relationship						
Type of mobility	**Hidalgo (*n* = 816)**	**San Luis Potosí (*n* = 643)**	**Puebla (*n* = 846)**	**Veracruz (*n* = 982)**	**Querétaro (*n* = 216)**	**Michoacán (*n* = 634)**	**Guerrero (*n* = 330)**
Long distance upward mobility (%)	54.78	54.90	54.14	52.44	48.15	45.27	31.21
Short distance upward mobility (%)	32.60	28.77	31.56	33.20	37.96	38.01	40.00
Immobility -Downward mobility (%)	12.62	16.33	14.30	14.36	13.89	16.72	28.79

Source: Own elaboration based on data from ENCEL 2017

Table 6. Exit percentages for the total study group

Educational status of provider (a)	**Educational status of the young person (%)**					
	No basic education	**Primary**	**Secondary**	**Upper secondary**	**Higher**	**Total**
No basic education	7.86	28.35	42.92	15.45	5.42	100.00
Primary	2.57	16.44	48.00	23.57	9.41	100.00
Secondary	0.40	5.74	40.79	34.26	18.81	100.00
Upper secondary	2.78	8.33	11.11	50.00	27.78	100.00
Higher	0.00	7.69	15.38	30.77	46.15	100.00
Total	5.71	22.77	43.54	19.81	8.17	100.00

Source: Own elaboration based on data from ENCEL 2017

Table 7. Percentages of outflows by sex, ethnicity, and migration status (%)

Educational status of provider (a)	No basic education	Primary	Secondary	Upper secondary	Higher	Total
By gender						
	Educational status of the young person (Male)					
No basic education	8.91	28.33	42.05	15.97	4.47	100.00
Primary	3.03	14.72	47.62	25.11	9.52	100.00
Secondary	0.44	7.49	41.41	33.92	16.74	100.00
Upper secondary	0.00	15.00	10.00	50.00	20.00	100.00
Higher	0.00	12.50	12.50	55.00	50.00	100.00
Total	6.42	22.52	42.84	20.63	7.59	100.00
	Educational status of the young person, female (%)					
No basic education	7.06	28.36	43.59	15.05	5.94	100.00
Primary	2.20	17.80	48.31	22.37	9.32	100.00
Secondary	0.36	4.32	40.29	34.53	20.50	100.00
Upper secondary	6.25	0.00	12.50	43.75	37.50	100.00
Higher	0.00	0.00	20.00	40.00	40.00	100.00
Total	5.15	22.96	44.09	19.17	8.63	100.00
By ethnicity						
	Educational stratum of the young person (Indigenous)					
No basic education	10.77	30.74	35.89	17.58	5.02	100.00
Primary	2.87	15.77	40.86	32.26	8.24	100.00
Secondary	1.00	11.00	32.00	35.00	21.00	100.00
Upper secondary	0.00	0.00	12.50	50.00	37.50	100.00
Higher	0.00	0.00	25.00	25.00	50.00	100.00
Total	8.07	25.43	36.51	22.58	7.42	100.00
	Educational status of the young person (Non-Indigenous)					
No basic education	6.67	27.36	45.83	14.57	5.58	100.00
Primary	2.46	16.69	50.58	20.44	9.83	100.00
Secondary	0.25	4.44	42.96	34.07	18.27	100.00
Upper secondary	3.57	10.71	10.71	50.00	25.00	100.00
Higher	0.00	11.11	11.11	33.33	44.44	100.00
Total	4.81	21.76	46.20	18.77	8.46	100.00
By migration status						
	Educational status of the young person (migrant)					
No basic education	2.84	25.52	40.98	22.42	8.25	100.00
Primary	2.84	10.23	45.45	30.11	11.36	100.00
Secondary	0.00	4.00	32.00	36.00	28.00	100.00
Upper secondary	0.00	0.00	14.29	57.14	28.57	100.00
Higher	0.00	0.00	50.00	0.00	50.00	100.00
Total	2.37	17.93	40.59	26.67	12.44	100.00
	Educational status of the young person (Non-migrant)					
No basic education	8.65	28.79	43.23	14.36	4.97	100.00
Primary	2.51	17.69	48.52	22.26	9.02	100.00
Secondary	0.49	6.17	42.96	33.83	16.54	100.00
Upper secondary	3.45	10.34	10.34	48.28	27.59	100.00
Higher	0.00	11.11	0.00	44.44	44.44	100.00
Total	6.30	23.63	44.07	18.59	7.41	100.00

Source: Own elaboration based on data from ENCEL 2017

While MEI rates are similar for both subgroups by ethnicity, the analysis of exit rates provides some nuances. The weight of educational inheritance is greater for Indigenous people when the provider stratum is no education, as they are 10.7% more likely to remain in that stratum than non-Indigenous people, who are 6.7% more likely to remain in that stratum. In this sense, it is noteworthy that, regardless of the stratum of origin, the probability of being in the lower strata (no education and primary school) is higher for Indigenous people (33.5%) than for non-Indigenous people (26.6%). However, Indigenous people also have a higher probability of reaching the higher educational strata (upper secondary and tertiary) (30.0%) than non-Indigenous people (27.2%). This difference in the extremes of educational stratification is explained by a higher probability for non-Indigenous (46.2%) than for Indigenous (36.6%) of reaching secondary school completion.

The analysis by migration status shows that migrants have a lower weight of intergenerational inheritance, mainly when their origins are in the lower educational levels. This translates into a lower probability for them of having no or primary education (20.3% versus 29.9% for non-migrants) and a higher probability of attaining upper secondary and higher education (39.1% versus 26.0%).

In essence, it is observed that the MEI achieved by young people is predominantly upward and long-distance. Nevertheless, the MEI has enabled young people to largely reach the secondary education stratum, with persistent barriers to accessing and completing upper secondary and tertiary levels. The data also reflect that the weight of educational inheritance persists in educational attainment, as those young people who have a low educational background are more likely to remain at these levels.

Regarding differences in MEI by comparison subgroups, it is observed that females have marginally higher upward MEI than males, while no differences are observed between Indigenous and non-Indigenous. Likewise, in the case of women, compared to men, there is a lower probability of being in the stratum with no education and a higher probability of attaining higher education. Indigenous people, in contrast to non-Indigenous people, have a higher probability of being in the stratum with no education, but also of attaining higher education.

Migration status reflects the most significant differences, with migrants having achieved the highest levels of upward MEI (particularly long distance), having a lower weight of educational inheritance, and having a higher probability of attaining upper secondary and tertiary education. This result suggests the relevance of context in shaping the opportunity structure.

The importance of context is also reinforced by the differences in MEI by place of origin, according to which young people from Guerrero, the most socioeconomically disadvantaged state, have the lowest levels of long-distance upward MEI and the highest levels of immobility-downward mobility.

5.2. Determinants of MEI: ascriptive and change factors

To gain a deeper understanding of the levels of MEI attained, a generalized ordered logistic model was estimated to analyze the weight of ascriptive and switching factors on intergenerational differences. From the model, the probabilities of achieving any of the three types of mobility (long-distance upward, short-distance upward, and immobility-downward mobility) were obtained as a function of three ascriptive variables (socio-economic origin, place of origin, and individual characteristics) and three change variables (migration status, time of exposure to POP and amount of POP support), with long-distance mobility being the reference category.

The statistical package displays coefficients (β) reflecting the direction of the relationship between the variables and relative risk ratios (RRR) indicating the likelihood of the independent variables exhibiting the reference category of the dependent variable. **Table 8** presents the results.

In the comparison between long and short-distance upward mobility, few categories determine the probability of being in one or the other, reflecting that they are groups with similar characteristics. Of the ascriptive variables, the relative risk of a young person achieving long-distance versus short-distance mobility increases when the household wealth index is high relative to low (1.59 times); and when they are originally from San Luis Potosí (1.66 times), Hidalgo (1.35 times)

Table 8. Results of the generalized ordered multinomial logistic ordered model

Variables				Short-distance upward mobility		Immobility-Downward mobility	
Variables		Reference category	Comparison category	β	RRR	β	RRR
Dependent variable							
Educational mobility		Long-distance upward mobility	Short-distance upward mobility Immobility-downward mobility				
Independent variables							
Ascriptive factors	Household wealth index of origin	Low	Medium	-0.013	0.987	0.071	1.074
			High	0.260*	1.597*	0.251*	1.285*
	State	Guerrero	Querétaro	-0.002	0.998	0.600*	1.823*
			Hidalgo	0.301*	1.352*	0.932*	2.540*
			Michoacán	-0.001	0.999	0.551*	1.736*
			Puebla	0.300*	1.350*	0.891*	2.438*
			SLP	0.419*	1.661*	0.935*	2.548*
			Veracruz	0.198	1.219	0.804*	2.235*
	Sex	Male	Female	0.001	1.001	0.082	1.085
	Ethnic status	Non-Indigenous	Indigenous	0.075	1.078	0.091	1.095
Factors of change	Migration status	Non-migrant	Migrant	0.099	1.104	0.218*	1.629*
	Time of exposure to the program (years)	1 to 10 years	11 to 16 years	0.308	1.360	0.253*	1.388*
			17 to 20 years	0.126*	1.966*	0.267*	1.987*
	Amount of total support received, pesos (ln)	Low	Medium	0.045	1.046	0.455*	1.576*
			High	0.428*	1.535*	1.069*	2.900*

Source: Prepared by the authors using the gologit2 command in Stata 14, based on data from the Panel ENCEL 1997–2017
Note: * = Statistical significance level at 95%.

or Puebla (1.35 times) versus Guerrero. Among the variables of change, a time of exposure to the program of 17–20 years (1.97 times) and having received a high amount of monetary support (1.54 times), increase the probability of having long-distance mobility.

In the comparison between long-distance mobility and downward mobility, most of the categories analyzed affect the probability of experiencing the former, rather than the latter. As for the ascriptive variables, the probability of a young person reaching the first condition increases when the household wealth index is high (1.31 times) and when the place of origin is not Guerrero (between 2.55 and 1.73 times depending on the entity). All the change variables contribute to explaining the probability of having long-distance mobility instead of immobility-downward mobility: when young people migrate from their place of origin (1.62 times), when the time of exposure to the program is high (1.99 times) or medium (1.39 times) and when the level of support received is high (2.90) or medium (1.58), relative to low in both cases.

It is worth noting that, among the ascriptive variables, individual characteristics (gender and ethnicity) were not significant in either comparison. This is consistent with the descriptive results presented in the previous section which show that the differences in MEI by gender and ethnicity are marginal.

Probabilities were also estimated for each category of the independent variables, for each of the MEI levels. From the probabilities obtained it is possible to construct

a profile of the determinants associated with each MEI level as a function of ascriptive and change factors.

The results (**Table 9**) show that those with the highest probability of achieving long-distance upward mobility come from a household with a high wealth index, are originally from San Luis Potosí or Hidalgo, are women and Indigenous, migrated from their place of origin, had a time of exposure to POP of 17–20 years and received a high amount of support from this program.

On the other hand, those who are more likely to experience short-distance upward mobility come from households with a medium or high level of wealth, are originally from Guerrero, Michoacán or Puebla, are not Indigenous, did not migrate from their place of origin, had a POP intervention of 17 to 20 years and received a high amount of monetary support from the program. In this case, gender is indistinct.

Finally, the young people who are most likely to show immobility-downward mobility come from households with a low level of wealth, are originally from Guerrero, are male, are not Indigenous, did not migrate from their place of origin, were beneficiaries of POP from 1 to 10 years of age and received a low amount of monetary support from the program.

Table 9. Marginal probabilities of the categories of the generalized ordered multinomial logistic model

Factors	Variables		Long-distance upward mobility	Short-distance upward mobility	Immobility-downward mobility	Total
	Name	Categories of variables				
Ascriptive	Household wealth index of origin	Low	0.4977	0.3403	0.1618	1.00
		Medium	0.5149	0.3431	0.1418	1.00
		High	0.5579	0.2853	0.1566	1.00
	Federal Entity	Guerrero	0.3324	0.3825	0.2849	1.00
		Querétaro	0.4725	0.3800	0.1443	1.00
		Hidalgo	0.5530	0.3150	0.1318	1.00
		Michoacán	0.4606	0.3818	0.1566	1.00
		Puebla	0.5431	0.3152	0.1415	1.00
		SLP	0.5538	0.2904	0.1556	1.00
		Veracruz	0.5221	0.3375	0.1403	1.00
	Gender	Male	0.5010	0.3343	0.1645	1.00
		Female	0.5206	0.3340	0.1452	1.00
	Ethnic status	Non-Indigenous	0.5060	0.3387	0.1551	1.00
		Indigenous	0.5306	0.3223	0.1497	1.00
In exchange	Migration status	Non-migrant	0.5040	0.3376	0.1584	1.00
		Migrant	0.5564	0.3159	0.1275	1.00
	Time of exposure to the program	1 to 10 years	0.4958	0.2924	0.2012	0.99
		11 to 16 years	0.5499	0.3191	0.1565	1.03
		17 to 20 years	0.5595	0.3375	0.1205	1.02
	Range of total support received, pesos (ln)	Low	0.3639	0.3458	0.2936	1.00
		Medium	0.4158	0.3918	0.1911	1.00
		High	0.5210	0.4100	0.1101	1.04

Source: Own elaboration from the generalized ordered multinomial model in Stata 14, with data from Encel 1997 and 2017. Note: All values have 95% statistical significance. The highest values for each variable per MEI category are shaded.

In summary, the results show that MEI is determined by the two types of factors considered: ascriptive and change. The weight of intergenerational inheritance in MEI is observed as a function of the ascriptive variables, mainly the wealth index of the household of origin and the entity of origin. A high socio-economic family origin increases the probability of long and short-distance upward MEI, while a low one favors immobility-downward mobility. On the other hand, young people from Guerrero, the state with the highest socio-economic disadvantages among those analyzed, show a higher probability of having immobility downward-mobility. Gender and ethnicity seem to be variables with a more marginal incidence. Although they are not statistically significant in the logistic model, they are significant in the estimation of marginal probabilities, where it is observed that being female and Indigenous are associated with a higher probability of experiencing long-distance upward MEI.

The factors of change have a positive impact on MEI, as migrating from the place of origin, longer exposure to the program, and higher amounts of program support increases the probability of long and short-distance upward mobility. This reflects that changing the conditions of origin of young people, either through individual decisions that lead to a change of territorial context or through public policy actions, such as access to POP, contributes to reducing intergenerational inequalities in education.

6. Conclusion

Based on a theoretical approach to intergenerational social mobility, this article examined the MEI features experienced by a group of young POP beneficiaries who come from largely disadvantaged backgrounds in rural areas of the country. Absolute MEI measures were calculated for the study group as a whole, as well as differences by gender, ethnic and migration status, and state of origin. The incidence of ascriptive and change (or non-ascriptive) factors on the probability of having different MEI outcomes were also analyzed using a generalized ordered multinomial logistic model. For this purpose, information from the initial and final round of the Panel ENCEL 1997–2017 was used.

The results of the descriptive analysis show that the young people in the study group have a higher educational attainment than their providers: nine versus three years of schooling on average. Thus, the MEI rate reflects a predominance of upward mobility (8 out of 10 young people), mainly long distance, over immobility-downward mobility. This is in line with the findings of other research reflecting that in the 21st century, this type of mobility has been restricted to people from disadvantaged social backgrounds [26].

Nevertheless, the impact of social background on educational attainment persists, mainly at the extremes of the distribution. Young people with providers at the lowest educational levels are more likely to attain those levels, while those from more highly educated backgrounds are more likely to do so.

Furthermore, while the high rates of upward MEI reflect a broadening of educational opportunities, the educational attainment of this group of young people still represents a challenge, as it is predominantly concentrated at the secondary level, and shows difficulties in transitioning to and completing upper secondary and tertiary levels. This implies limitations for these young people in their insertion into the labor market and points, in agreement with other studies [26], to the need to strengthen public policy actions that promote the permanence and graduation from secondary and higher education of young people from low-income families.

The comparison of the MEI by subgroups shows differences, although marginal, favorable for women and similar characteristics according to ethnicity. Likewise, women, compared to men, have a lower probability of being in the stratum with no education and a higher probability of attaining higher education. Indigenous people, in contrast to non-Indigenous people, are more likely to be located in the stratum with no education, and also at the tertiary level. Given the historical disadvantage of women and Indigenous people in educational attainment, these results could be interpreted as favorable for these subgroups. They are also consistent with the results of previous research documenting the impact of POP on closing gender and ethnic gaps in education [40,46].

The most notable differences are associated with

migration status. Young people who migrated from their locality of origin have the highest levels of upward MEI (particularly long distance), have a lower weight of educational inheritance, and have a higher probability of attaining upper secondary and tertiary education. These findings are consistent with previous studies that have documented more favorable outcomes for migrants on several dimensions of well-being [1,2,6,53]. This suggests that, in the face of limited opportunities in the localities of origin, emigration is a mechanism that provides the possibility of accessing a better level of well-being.

The importance of the context is also reinforced by the results of the MEI according to the entity of origin. Young people from Guerrero, the entity with the greatest socio-economic disadvantages among those studied, have the lowest levels of long-distance upward MEI, as well as the highest rates of immobility-downward mobility.

The analysis of the determinants of MEI allows us to deepen the characterization just presented. The findings show the incidence of both ascriptive elements, which are associated with inequality of opportunity, and non-ascriptive elements, which represent mechanisms of change, in intergenerational outcomes.

The odds of experiencing long-distance upward MEI are associated with having a high socio-economic family background, being originally from San Luis Potosí (in contrast to Guerrero), being female, being Indigenous, being a migrant, having been a beneficiary of POP for the longest time and having received the highest amount of cash transfers from this program.

In the opposite situation, the odds of having an immobility-downward mobility outcome are associated with being from a low socio-economic background, being from Guerrero, being male, not being Indigenous, not having migrated from the locality of origin, having been a POP beneficiary between 1 and 10 years, and having received a low amount of cash transfers from POP.

These findings identify progress in the distribution of educational opportunities, particularly for this group of young people who come from extremely poor households and rural localities with broad restrictions on opportunities. Such progress has undoubtedly been generated by a combination of factors, including the expansion of educational provision and other public policy actions. However, the results also show that enormous challenges remain in achieving equality of opportunity in the educational dimension, which points to the urgent need to reinforce government strategies to minimize barriers to educational mobility.

Although the analysis does not allow us to estimate the impact of POP on MEI, the findings show that the time of exposure to the program and the amount of monetary support received from the program does have a positive association with long-distance upward mobility. These results point in the same direction as those of [2], who documented the positive impact of POP on MEI for this study group after ten years of program operation. That is, the evidence points to the fact that POP contributed to reducing intergenerational inequalities in education.

POP was canceled in 2019 and replaced by the *Programa Nacional de Becas para el Bienestar Benito Juárez*, which omits the synergy between education, health, and food actions, and reduces the number of educational scholarships. It is possible that this change means a setback in the progress that has been made in the educational trajectories of children and young people living in poverty.

The challenge of equalizing educational opportunities remains, but it is only one of the pieces that must be addressed to avoid the intergenerational reproduction of poverty. Increasing the human capital of individuals will be insufficient if a restrictive economic context is maintained, with low growth and without the capacity to generate quality jobs and characterized by maintaining and deepening inequalities [54].

Disclosure statement

The authors declare no conflict of interest.

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