

Social Inequality in Access to Higher Education in Mexico: Current Situation and Policy Implications

Emilio Blanco

Marco A. Garrido

El Colegio de México

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Introduction

Higher education (HE) in Mexico has become a significant area of concern with regard to educational inequality. From the 1970s to the present, this level of education has grown steadily, reaching an enrolment of more than 5 million people and a coverage of around 40 per cent of the young population. However, this growth has not been achieved in conditions of socioeconomic equity. Firstly, there is a significant socio-economic disparity in the likelihood of accessing HE. Young people from high social sectors have approximately eight times the chance of accessing this level than young people from low social sectors. Secondly, the system exhibits a notable heterogeneity in services that perpetuates the social inequalities of origin, resulting in young people from lower social sectors having access to schools of lower quality and less recognition than young people from higher social sectors. This overlap between social and institutional inequalities transcends the division between public and private systems, and is reproduced within them.

Against this backdrop, recent public policies have emphasized the expansion of enrolment through low-cost options, aimed at young people from the lower social strata, which has resulted in precarious insertions, associated with irregular trajectories, school dropout and

low achievement. It is therefore necessary to promote policies aimed at improving equity in access conditions and generally increasing the quality of educational services.

The objective of this paper is to provide an overview of the relationship between social inequality and access to HE. The main conclusion is that the current structure of the HE system contributes to the perpetuation of inequality, rather than providing opportunities for social mobility. This structure is characterized by insufficient public investment; a fragmented system where quality and prestige are concentrated in a few universities; admission process increasingly based in knowledge-based exams, which reproduces inequalities associated with social origin and previous school experience.

This document is structured as follows. The first section defines general concepts related to educational inequality. The second describes the main trends in access to HE in Mexico since the 1970s, as well as the process of diversification experienced by the system. The third section discusses the change in indicators of inequality of access over time. The fourth analyses the relationship between access levels and social inequality through a comparison between states. In the fifth section the heterogeneity of HE and differences in selectivity within each system are discussed. The sixth discusses the different socio-economic compositions of HE modalities. In the seventh section a critical analysis of the most recent policies of expansion of provision aimed at the most vulnerable sectors is presented. The conclusions propose a series of recommendations with a view to increasing equity in access to HE.

1. Inequality of opportunity: general concepts

The term inequality of educational opportunities (IEO) in HE is used to describe differences in the probability of accessing higher education associated with characteristics that are not chosen by the subjects. These characteristics can be broadly classified into four categories: socio-economic origin, gender, ethnic status and region of birth or residence. If these factors are found to be significantly associated with the probability of access, it can be concluded that there is IEO.

With regard to its observation, the IEO can be quantified in two ways: unconditionally or conditionally. The former approach estimates the probability of access to university for a given cohort. The positive cases are those who entered university, while the negative cases are those who did not, regardless of when they completed/interrupted their education. In contrast, conditional IEO estimates the probability of university access based solely on those members of the cohort who have completed upper secondary education. This second approach to IEO has the advantage of being free from the processes and inequalities attributable to previous transitions. However, it provides a limited representation of the inequality of opportunity.

With regard to the destination attained in the educational system, IEO can be divided into two categories: vertical and horizontal (Solís 2013). The former merely refers to the probability of accessing HE. The second approach acknowledges that not all positions within a given level are equal. There are different types of schools and careers. The HE system is distinguished by a set of formal and informal attributes that vary greatly among schools. The formal factors include the institutional sector to which the school belongs (federal and state autonomous universities, technological institutes, private universities, etc.), the type of career orientation studied (bachelor's degree, engineering, technical), and the career pursued.

To acknowledge the horizontal dimension of IEO is of fundamental importance for a critique of the massification of HE. In Mexico, the expansion of opportunities for access to HE in recent decades has not been achieved through the opening of new options of equal quality and prestige to traditional options, but through the introduction of options of lesser value.

Governments have political incentives to expand HE. However, given the economic constraints involved, they do it through the opening of low-quality options. The reduction of the role of the state and the restructuring of state functions and finances following the Washington Consensus coincided in Latin America with the fact that the upper-middle strata of society had already gained access to university in significant proportions. Consequently, the expansion of public university provision to the middle and lower-middle sectors has occurred through institutions that receive fewer resources per student and, as a consequence, enjoy less prestige and recognition. At the end of the spectrum, government initiatives to

meet the growing demand for HE have resulted in a school offer that is so degraded that it is in question whether it is useful to fulfill even the modest expectations of the lower classes.

The emergence of selection mechanisms for the most in-demand universities that tend to favour students of higher socio-economic status, such as knowledge-based entrance exams, has the effect of creating a system of stratification that allocates the most advantaged students to the most prestigious schools. Consequently, the expansion of educational opportunities is accompanied by a diversification in the quality of educational institutions, which ultimately serves to reproduce the inequalities that were originally set to be reduced.

The market responds in a similar manner to the pressure for university access. When access to the public sector is constrained at the highest levels, as is the case in Mexico, it encourages the emergence of low-cost public schools, with a low market value.

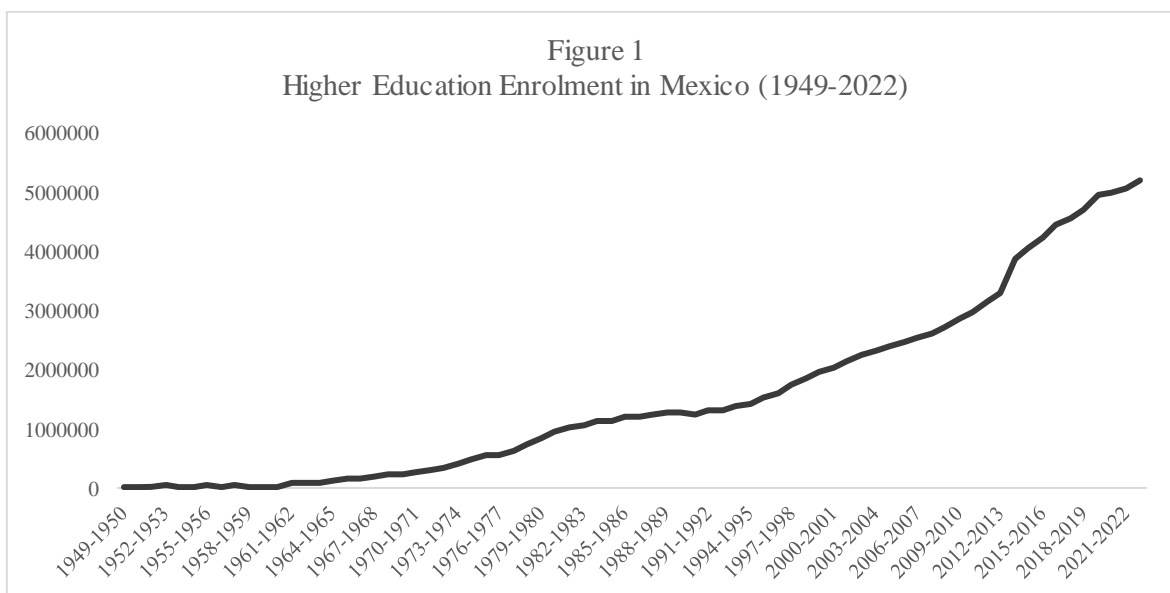
This results in a situation of precarious inclusion at the tertiary level, where socio-economic background plays a preponderant role, that threatens to maintain the structure of educational and economic opportunities.

Here it is important to note that not all observed inequalities are structural in nature. Different preferences between social sectors contribute to the perpetuation of inequalities. If preferences for mobility differ between social sectors (which is reasonable given that each group has a different reference point in its own social position of origin), it is possible that these preferences are satisfied by different forms of university education. For instance, for the middle and upper sectors, the maintenance of their social position is contingent upon access to the most elite educational institutions and programmes. Conversely, for those in the lower sectors, the prospect of upward mobility necessitates at least some form of university education, despite the potential lack of market value associated with such qualifications.

At present, it is not possible in Mexico to ascertain the relative weight of inequality of opportunities and preferences, or the relationship between them, due to a lack of data on the most relevant variables. These include social origin and preferences of applicants, trajectories through the transition regimes, schooling trajectories and its consequences.

2. The Growth and Diversification of Higher Education in Mexico: 1970-2020

In the latter half of the 20th century, Mexico experienced a remarkable increase in the number of individuals pursuing HE. Prior to 1970, only a small proportion of the population, predominantly the wealthy classes, had access to this level. Following the student movement of 1968 and the crisis of legitimacy of the Institutional Revolutionary Party, the administrations of Presidents Luis Echeverría and José López Portillo allocated considerable public resources to HE, with the intention of strengthening the party's legitimacy. These policies facilitated the expansion of the system and encouraged innovation and reform in university and technological education. Furthermore, the country's industrialisation process led to an increase in the demand for skilled manual workers, as well as professionals and higher-level technicians (Bartolucci 2022; Rodríguez-Gómez 2015; Tuirán & Muñoz 2010).

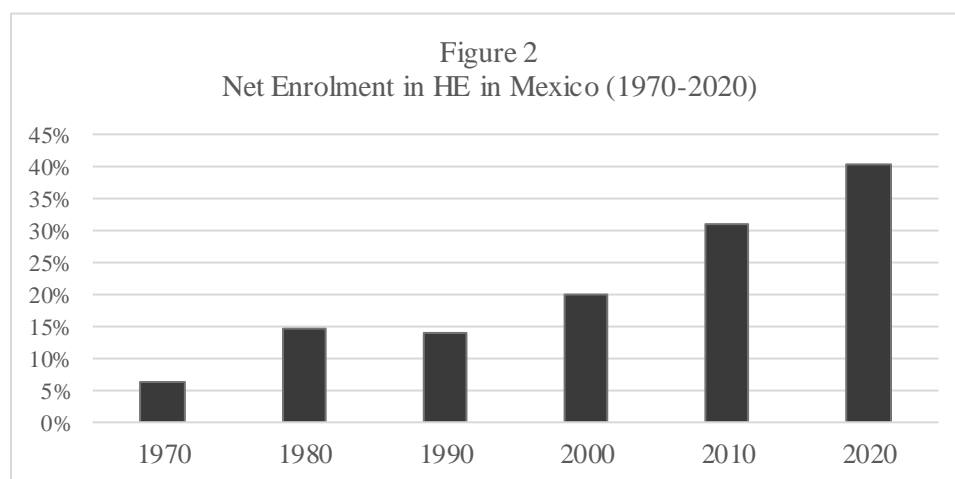


Source: Own elaboration based on Historical Statistics (1893-1894 to 2022-2023), Secretary of Public Education (SEP) (DGPPYEE-SEP, n. d.).

As a consequence, both the student population and the number of higher education institutions (HEIs) experienced a marked increase. Between 1970 and 2020, the number of HEIs grew from 385 to 8,318. In 1970, the number of students enrolled in higher education was 271,275. By the end of the following decade, this figure had risen to 935,789. Following a period of relative stagnation during the 1980s, due to the economic crisis and the subsequent reduction in public spending, higher education resumed its growth trajectory, with enrolment

reaching 2,047,895 students by 2000. During this period, HE began to diversify significantly through options such as technological institutes, and the rise of the private sector. By 2020, the total number of students had reached 4,983,206 (figure 1). More recently, the HE system further diversified through the establishment of polytechnic and intercultural universities.

Consequently, the proportion of the population with access to higher education increased from 6% in 1970 to 40% in 2020 (Figure 2). This places Mexico only below Chile, at similar levels to Argentina and Bolivia, and considerably above Costa Rica, Uruguay, Brazil, Ecuador, and the rest of Central America (Montes and Osorio 2023). It is also important to note that, during this period, there has been a significant increase in the relative participation of women, to the point that their access to HE now exceeds that of men.



Source: Adapted from Tuirán & Muñoz (2010). For 2010, the data are from Enciso-Ávila *et al.* (2018).

The growth of HE in Mexico cannot be fully understood without an appreciation of the diversification of its institutions and its regional expansion. In the 1970s, several important institutions were established, including the Autonomous University of Ciudad Juárez (1973), the Autonomous Metropolitan University (1974), the Autonomous University of Baja California Sur (1975), the Autonomous University of Chiapas, the Autonomous University of Tlaxcala (1976), the Technological Institute of Sonora (1976) and the National Pedagogical University (1978). In 1973, the Autonomous Institute of Science and Technology of Aguascalientes became the Autonomous University of Aguascalientes. In 1974, the former National School of Agriculture became the Autonomous University of

Chapingo, and in 1975, the School of Agriculture of the University of Coahuila became the Autonomous University Antonio Narro. Furthermore, the number of institutions within the technological system tripled (Rodríguez-Gómez 2015).

With Mexico's entry into the General Agreement on Trade and Tariffs (GATT) in the mid-1980s and the North American Free Trade Agreement (NAFTA) in the 1990s, the country had to adapt to international trade competitiveness and the impact of new technologies. This required that companies, particularly industrial ones, reorganise their production methods, which in turn affected job profiles and professional qualifications. In this context, the training of technicians and professionals in technologies and production management became crucial to productivity. Consequently, the Mexican government focused on expanding higher education opportunities through the creation of new technological institutions, especially in areas with little presence of HEIs (Ruiz-Larraguivel 2011).

These new institutions offered a variety of careers and training models, alternative to traditional bachelor's degrees, to meet the needs of an increasingly diverse student body. Between 1970 and 1999, 83 institutes of technology were founded, many of which were the only HE institutions in their regions. In the early 1990s, Technological Universities (TUs) were created, offering two-year degrees in areas linked to middle management positions in enterprises. In 2001, Polytechnic Universities (UP) were established, which offer engineering degrees related to dynamic technological areas required in the main production and service sectors (Ruiz-Larraguivel 2011).

At the beginning of the 21st century, HE in Mexico underwent a profound decentralisation, accompanied by the introduction of more flexible curricular options, with the objective of fostering the inclusion of previously excluded social sectors. Distance and open education for those who cannot attend regular classes were implemented. Intercultural universities were also created to meet the demand for higher education in indigenous communities (Navarro-Cendejas 2022; Tuirán & Muñoz 2010). In Mexico City, interesting projects have been developed, such as the UACM or the URC, aimed mainly at those who do not manage to enter traditional public universities. Currently, the Benito Juárez Universities are the latest attempt to offer HE services in highly marginalised municipalities.

The private sector has also notably increased its participation in HE. Between 1980 and 2000, total undergraduate enrolment in private HE in Mexico expanded almost 17-fold, outpacing the growth of public higher education, which "only" grew four times. This expansion was not solely driven by the distrust of some upper-middle classes towards public education. Currently, private education is also expanding to serve the middle and lower-middle sectors, who have been unable to gain admission to the main public universities due to the increasing demands of their entrance examinations.

3. Inequality of access opportunities and evolution over time

What are the consequences of these HE policies in terms of inequality of access opportunities? According to the latest 2020 population census, 42% of the population between 22 and 25 years of age have access to HE. This figure masks important inequalities.

Table 1
Percentage of Access to HE, by categories of social origin
Population between ages 22-25, Mexico 2020

Educational level of the head in the household of residence		Quintiles of assets in the household of residence	
Less than complete Primary	14.0	1	7.9
Complete Primary	23.8	2	17.3
Secondary	36.8	3	25.6
Upper Secondary	57.9	4	39.1
University	78.3	5	66.5
Total	41.8	Total	41.8

Source: Own analysis based on microdata from the National Population and Housing Census 2020, INEGI.

As illustrated in Table 1, the share of young people residing in households where the head did not complete primary school who have access to higher education is 14%, while for those

whose head had access to tertiary education is 78% (5.6 times more likely). When we use an index of household assets (as a *proxy* for purchasing power) and divide it into quintiles, we find even greater differences. The lowest socioeconomic quintile has an access rate of only 8%, while the highest socioeconomic quintile has an access rate of 66.5% (a ratio of 8.4).

This does not imply that the entirety of the population attending HE is socially privileged. It is, of course, in comparison to those who do not; however, if we examine their educational background, according to the 2020 Census, only one-third originate from a household where the head has attained higher education. Forty percent originate from households where the head has only completed secondary education. First-generation university graduates constitute the majority of the student population, which presents significant challenges for the development of smooth trajectories within the system.

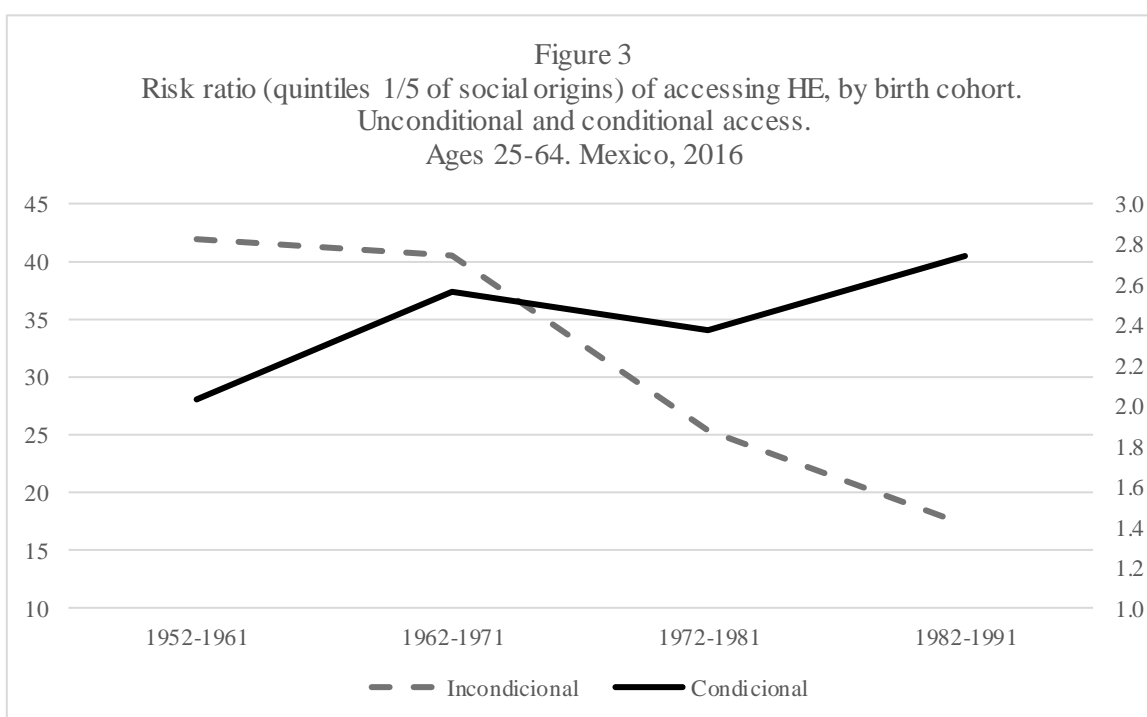
The rapid expansion of the HE system has led to the assumption that inequality of access opportunities has been reduced in the long run. However, this assumption is not fully supported by the evidence. The issue has been addressed through studies of educational mobility and studies of transitions. The former compare the educational levels attained by children relative to their parents, and the change in these patterns over time. The latter analyze inequality in the probability of access to each level of education according to social origin, as well as the evolution of this relationship over time.

Studies of educational mobility show that, although Mexico experienced very high levels of mobility during the 20th century, this mobility has declined in recent years. De Hoyos et al. (2010) demonstrated that the correlation between parents' and children's education diminished significantly in older cohorts, but this trend stalled in more recent ones. Torche (2010) observed a slight decline in upward mobility for the most recent cohort at that time, as well as a consistent increase over time in the intergenerational mobility barrier between upper secondary and tertiary education. Rodriguez (2020) also found evidence to support the notion that barriers to accessing upper secondary and tertiary levels of education have increased, particularly for women.

Coincidentally, studies of transitions show that inequality in access to basic education (primary and secondary) has decreased over the last 50 years, but has remained relatively unchanged at the upper secondary level. Moreover, inequality in HE, measured as the odds

ratio of access between extreme quintiles of an index of social origin, shows a slight tendency to increase (Solís 2013; Blanco 2020).

It is important to note that if we look at the probability of access to HE for each cohort considered as a whole (Figure 3), inequalities are significantly reduced. The hazard ratio falls from 42 for the cohort born between 1952 and 1961 to 17 for those born between 1982 and 1991. The increase in inequality is observed when analysing conditional access to HE for those who have completed upper secondary education¹. The hazard ratio increases from 2 to 2.7 between the first and the last cohort. The transition between upper secondary and tertiary education may act as a bottleneck for equal opportunities.



Source: Own elaboration based on microdata from the MMSI 2016, INEGI.

¹ This conditional analysis is justified because the unconditional estimates of coverage and inequality are affected by what happens at earlier stages, in particular by the opportunities for access to and completion of upper secondary education. If we want to focus more clearly on the characteristics of higher education provision, an analysis conditional on completion of higher education is appropriate.

4. Access and inequality by federal states

A second interesting aspect is the relationship between access and equity. A cross-states comparison can shed light on this point.

According to the theory of maximum maintained inequality (MMI), the opening of new places does not necessarily lead to greater equity; this will only happen when the upper strata have reached saturation in terms of access. If the process of expansion continues after this point, only then will lower access reduce inequality because upper access cannot continue to grow (Raftery & Hout 1993).

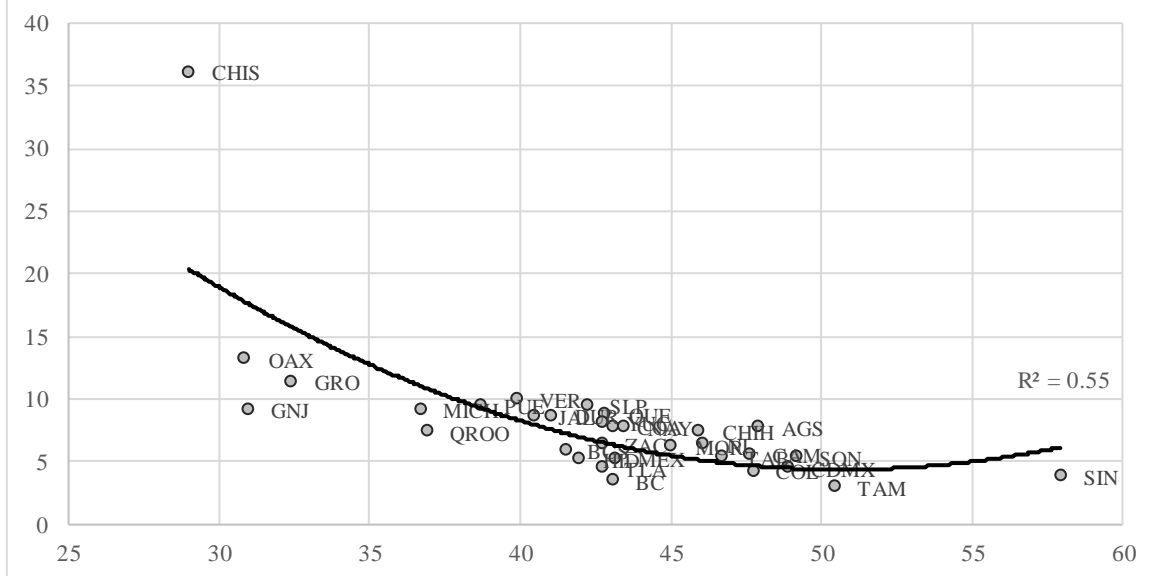
If we apply this assumption to differences between states (i.e. if we accept that differences in state coverage can be seen as differences in a process of temporal evolution), one consequence is that the states with the highest percentage of access will not necessarily be the most equitable. It is possible that the level of inequality is similar to, or even higher than, states with less access. This will depend on the extent to which the additional places are taken up by young people from higher socio-economic backgrounds. Only in countries with very high levels of access would we expect to see a reduction in inequality.

Statistically, this means that there should be, at best, only a weak relationship between coverage and equity. Higher levels of coverage would not lead to higher equity because the new places would be taken by the most privileged young people.

We can analyse this relationship using the relative risks of access to tertiary education calculated for quintiles 1 and 5 of an index of social origin in each state.

Figure 4 shows the results by state for 22-25 year olds, using the INEGI CENSO 2020 sample. The x-axis represents the percentage of access to higher education, and the y-axis the relative risks between quintiles 1 and 5. A higher relative risk implies greater inequality, i.e. greater opportunities for young people in the top quintile relative to those in the bottom quintile.

Figure 4
 Percentage of access to HE and relative risks of access between quintiles 1 and 5 of social origins, by state.
 Mexico 2022. Ages 22-25.



Source: Own analysis based on microdata from the National Population and Housing Census 2020, INEGI.

There is a clear tendency for socio-economic inequality in access to decrease as university coverage increases. Particularly noteworthy are the cases of Chiapas, Oaxaca, Guerrero and Guanajuato, with low coverage (around 30%) and very high inequality: the top quintile is between 9 and 36 times more likely to have access to university than the bottom quintile.

This is a strong relationship. Almost 55% of the variation in inequality can be explained by differences in coverage. Excluding the outlier case of Chiapas, the trend indicates a hazard ratio close to 11 for the entities with the lowest access, which falls to 4 for the entities with the highest access. This element contradicts the hypothesis of maximum inequality.

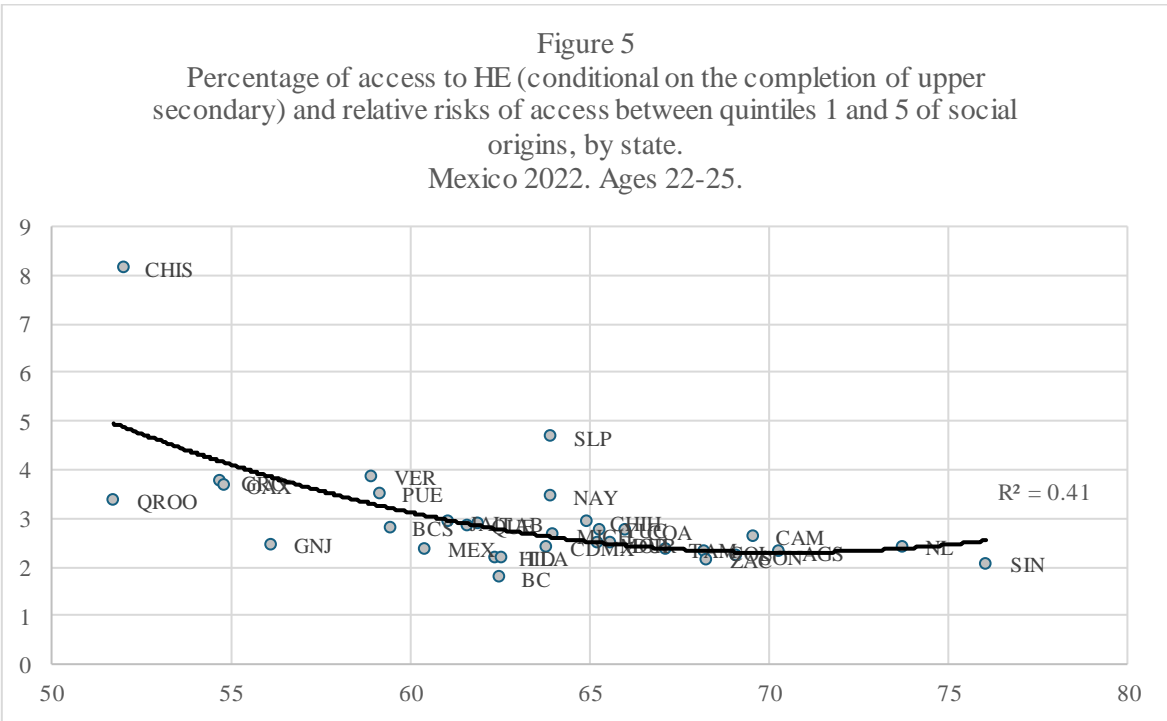
An alternative way of analysing the relationship between coverage and inequality of opportunity is to look at access to HE only for those who have completed upper secondary.

Calculated in this way, the percentages are considerably higher than those reported above. Nationally, the conditional access rate is 62.4 per cent. The states with the lowest rates are the same as for unconditional access: Chiapas, Guerrero, Oaxaca, Guanajuato and Quintana

Roo, with percentages between 52 and 56 per cent. The states with the highest access are Sinaloa and Nuevo León, at around 75%.

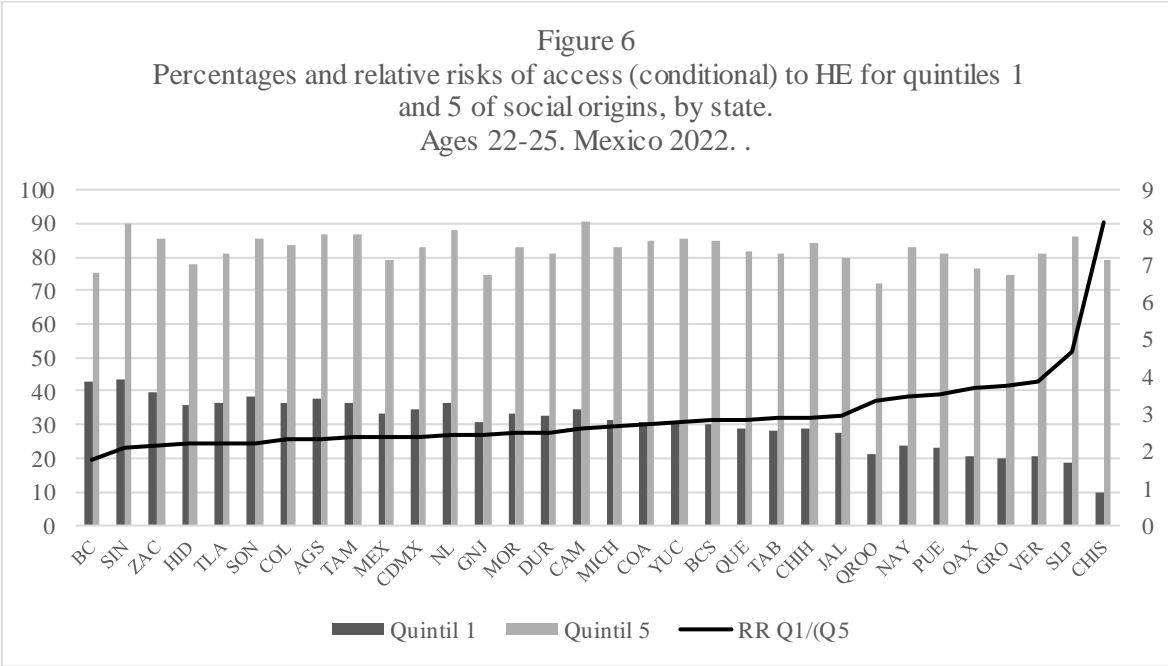
The conditional relative risks of access to HE are, logically, lower than those observed when reported globally. This is due to the fact that this form of calculation eliminates the effect of socio-economic background in the transitions that occur before the completion of upper secondary education. Thus, overall, the chance of the top quintile is 2.9 times higher than that of the bottom quintile, compared to 8.2 for unconditional access. Nevertheless, this is still a high level of inequality.

This approach gives a similar picture to that already reported for the unconditional approach, albeit tempered by socio-economic selectivity (Figure 5). As access between units increases, inequality decreases and differences in the former can statistically explain 40% of the latter. As in the previous approach, this is not a linear relationship, but is more pronounced at lower levels of access. At higher levels, the trend tends to flatten out.



Source: Own analysis based on microdata from the National Population and Housing Census 2020, INEGI.

These results suggest that there is still ample room for the states to improve equity by increasing access. As can be seen in Figure 6, the differences in equity between states are mainly due to differences in access in the lower quintiles. While the top quintiles in each state have access levels around 80 per cent, the lowest have a much larger variance, ranging from 40 to 10 per cent. It is these differences that largely explain the level of inequality. The priority must therefore be to include the lower socio-economic strata.



Source: Own analysis based on microdata from the National Population and Housing Census 2020, INEGI.

5. Diversity and selectivity of HE in Mexico

As previously shown in section 3, the growth of higher education in Mexico has been achieved through an increasing diversification, not only due to the growth of the private sector, but also to the heterogeneity of the public sector. While it is true that, in principle, university provision should be flexible in terms of content and curriculum in order to adapt to different preferences and needs, the diversity of actors and regulations has resulted in a system with marked differences in quality.

According to ANUIES data for the last school year (Table 2), 63% of the students attend public universities, while the rest attend private universities. State and federal universities account for 37% of all HE enrolments (58% of the public sector). The rest of the enrolments are distributed over several systems: technological institutes (11% of the total), technological universities (4.4%), teacher training colleges (2.3%), polytechnic universities (2%) and other types (6.7%).

Table 2

Absolute and relative enrolment and percentage acceptance relative to demand, by type of higher education subsystem. México 2022-2023.

	Absolute Enrolment	Relative Enrolment (%)	% Acceptance
PUBLIC SYSTEM	3,285,817	63.3	43.6
Public State Universities	1,322,357	25.5	43.1
Public Federal Universities	593,025	11.4	20.7
Technological Institutes (federal)	341,652	6.6	67.5
Other types	254,123	4.9	45.6
Technological Institutes (decentralized)	229,268	4.4	82.0
Tecnological Universities	226,340	4.4	81.0
Normal Schools	118,817	2.3	38.6
Politechnic Universities	105,502	2.0	75.8
“Apoyo solidario” state Universities	69,228	1.3	59.6
Intercultural Universities	21,167	0.4	64.2
CONACYT Research Centres	4,338	0.1	41.7
PRIVATE SYSTEM	1,906,801	36.7	78.6
TOTAL	5,192,618	100.0	54.7

Source: ANUIES, statistical yearbook 2022-2023.

The last column of Table 2 shows the ratio between the total number of applications for each sub-system for the 22-23 cycle and the number of students effectively enrolled in that year. With due caution, this ratio can be taken as a proxy for the selectivity of each sub-system (the lower the percentage, the higher the selectivity²).

The ratio of demand to admissions is highest in the federal public universities, with about 500,000 applications and just over 100,000 admissions (an acceptance rate of 21%). Demand is higher in the state public universities, with 655,000 applications and a total of 280,000 new admissions, resulting in an acceptance rate of 43%. In the other modalities, with the exception of teacher training colleges, acceptance rates are higher, ranging from 45% to 80%.

The selectivity of the federal public schools is not only the highest in the entire subsystem but has also increased over time. The paradigmatic case is that of the UNAM. According to Bartolucci (2022), in 1962 admission to this university excluded only 9 per cent of applicants (around 1,000 people). Over time, the rejection rate increased from 35% in 1975-1985 to 70% in 1996, due to an increase in demand that reached 100,000 students per year, with a virtually unchanged supply of places. In 2015, the rejection rate reached 80%, a figure that has been maintained until today³. In the case of the UNAM, as in some other universities in the country, it is important to note that the rejection rate is lowered by the number of students who come from the high schools of the same universities. In the case of students who come from outside and have to pass the entrance exam, the rejection rate is close to 90%.

² This percentage should not be interpreted as the probability of being admitted to higher education, as a person may apply to more than one university, a common practice in Mexico. Even the comparative interpretation of selectivity between sub-systems should be treated with caution, as it is possible that the same person may apply to several different schools in the same sub-system, and that the incidence of this practice varies between sub-systems. The selectivity of the most popular systems may be inflated because the number of applications far exceeds the number of actual applicants within each sub-system.

³ Own calculations based on absolute figures reported by Bartolucci (2022) and DGPL-UNAM statistical series.

In Mexico City, the UAM and the IPN have also shown similar trends. Although there are no long time series available, the same trend can be observed in the last two decades: in 2004, the UAM rejected 23% of applicants, and in 2022, 14% (UAM, n. d.). In 1999, the IPN had a rejection rate of 53%, while the growth in demand and the low growth in supply led to a rejection rate of 76% in 2022.

In the State Universities, according to ANUIES, the ratio of applications to admissions has remained practically unchanged over the last 10 years: from 42.1 to 41% (the observation window is narrow due to data availability). However, this general trend masks very different patterns. Among the larger and more prestigious state universities, some have become more selective, such as the University of Guadalajara, the University of Nuevo León or the Veracruzana University. Others, such as BUAP or UAEMex, have remained virtually unchanged. Finally, the Universities of Sinaloa and Baja California have significantly increased their enrolments in relation to applications. The picture is equally heterogeneous in the smaller state universities.

As a whole, the public sector shows a slight downward trend in admissions: from 48.4 in 2012 to 42.2 in 2022. This supports the hypothesis that the growth of this supply is insufficient in relation to demand.

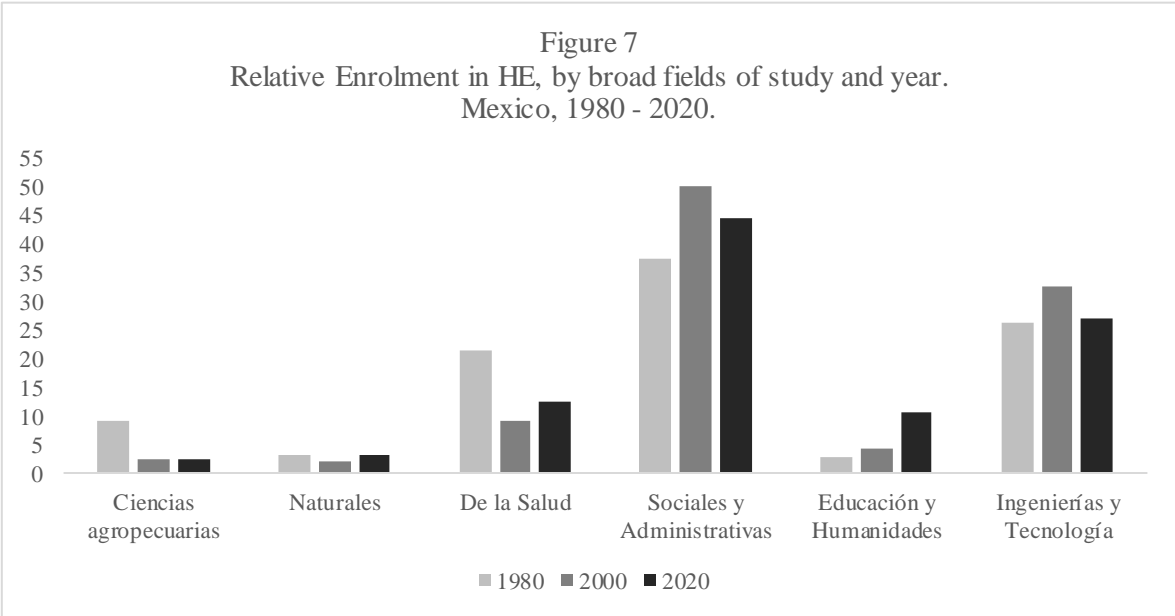
It is important to remember that even if the public acceptance rate remained constant, the fact that there are more and more applicants would imply an increase in the absolute number of rejected students. In 2012, around 600,000 applications were rejected by the public sector, while in 2022 the number approached one million. Even disregarding a possible increase in the number of applications per person, the number of applicants who do not find a place in the public universities to which they apply is increasing.

One of the main mechanisms behind this dynamic is that the higher education available to most of the students from lower strata, or those far from the large metropolitan areas, is of such low quality and prestige that they are not even desirable (Ruiz-Larraguivel 2011; Ortega & Casillas 2013). This feeds back into the stratification system by not effectively decompressing demand for more traditional options.

This also increases the demand for the private sector, which has not only grown significantly but has also become increasingly heterogeneous. In 2005, private sector enrolment was 18% of the national total (Gil Antón, 2005); today it is twice as high. The most recent data suggest that the private sector will continue to grow: in 2022, the share of new entrants in the private sector was 45.6% (ANUIES, statistical yearbook 2022-2023).

As a result of this dynamic the private sector includes, in addition to elite schools, middle class schools, as well as “absorption of demand” schools, aimed at low socio-economic groups (Navarro-Cendejas 2022). These are small, under-resourced schools that charge low fees and provide low quality education. As expected, the private sector is very unselective in terms of admissions: the ratio of income to applications is close to 80%.

A second relevant dimension of the diversification of HE is careers. This is not independent of the previous one, as not all types of schools offer all types of programmes. Access careers is limited by the schools available in each region, as well as by the places available for each career within each school. Over time, demand also affects supply, but the match is far from perfect. The distribution of careers is therefore not just a distribution of preferences, but also reflects processes of exclusion and inequality of opportunity.



Source: ANUIES, statistical yearbook 2022-2023.

Between 1980 and 2020, the largest share of undergraduate enrolments in Mexico will be in three fields of study: first, social and administrative sciences; second, engineering and technology; and third, health sciences (Valle Flores, 2011). The natural sciences have little weight, as do agricultural sciences. The most notable long-term trends are a decrease in the relative weight of health, and an increase in social and educational sciences (Figure 7).

In terms of specific careers, university enrolment in Mexico has been concentrated on a small group of options since the middle of the last century. For more than four decades, only five careers (administration, architecture, accountancy, law, medicine) have accounted for more than 25% of university enrolment. Over time, however, there has been a trend towards diversification.

While some of the main careers have maintained the same weight as 40 years ago, others have changed significantly. Medicine, one of the most traditional, has reduced its share to a third of what it was in 1980. Civil engineering has lost almost half of its share by 2020. Agricultural engineering is only a tenth of what it was in 1980.

On the other hand, new fields of study began to increase its relative weight. Psychology and management doubled their percentage between 1980 and 2020. Some engineering subjects, such as industrial and electronic engineering or computer science, multiplied their share many times. Communication and marketing, which had virtually no weight in 1980, experienced an explosive growth. These movements reflect different trends in supply and demand, but also selection processes that may contribute to increasing social inequality.

A grouping of the 10 main fields of knowledge (Table 3) shows important differences in the level of acceptance of each of them. In the fields with the highest enrolment (engineering, management, economics, law), acceptance exceeds 60%. In others, such as social sciences, teacher training and ICT, it is around 50%. In medical sciences, on the other hand, the acceptance rate is only 18%. This mismatch between supply and demand, generally mediated by entrance exams, is another potential mechanism of inequality of opportunity.

Table 3

Relative and cumulative enrolment and percentage of acceptance by career. Mexico, 2022-2023

	% Enrolment	% Acceptance
Engineering	13.2	62.9
Administration and Management	11.6	62.2
Buisnesses and Accounting	10.6	61.7
Law and Criminology	9.1	60.9
Social and Behavioral Sciences	7.2	56.0
Education Sciences and Pedagogy	5.7	73.7
Architecture and Building	4.4	50.1
Medical Sciences	4.0	18.8
ICT	4.0	55.5
Teacher education	3.9	48.2

Source: ANUIES, statistical yearbook 2022-2023.

6. Horizontal inequalities

The heterogeneity of the HE system is closely linked to social inequality. The expansion of the system has not taken place under equal conditions for all students but entails choices of different quality and recognition on the labour market, favouring students from better socio-economic backgrounds. This link between social origin and the quality/prestige of universities takes place through different mechanisms.

In the private sector the main mechanism is market prices. As we have shown, this leads to a stratification between schools for the elite, schools for the middle sectors and low-cost schools oriented towards popular sectors with low academic quality.

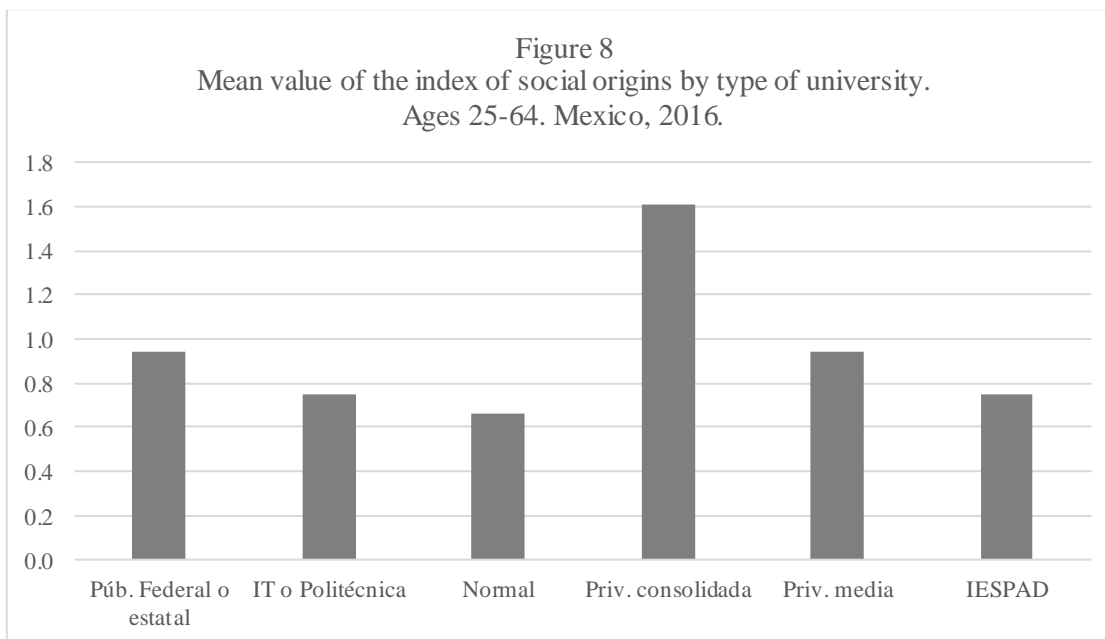
In the public sector, unequal regional provision is a first mechanism. In addition, federal and state universities in capital cities and metropolitan areas are increasingly resorting to knowledge-based entrance exams. Although the justification for this is meritocratic, it is well

known that the results depend to a large extent on the socio-economic and educational conditions faced by young people, which contributes to the reproduction of inequality.

As a result, the students who are excluded from the most prestigious universities are also those with the least economic, educational and social capital. These students are relegated to less prestigious public, or less expensive private options. This process of stratification reinforces inequalities in educational provision by concentrating students and families with the least capacity to articulate and communicate demands in the lowest quality universities.

Although the lack of systematic information on the student population in HE prevents the construction of an accurate picture of their socio-economic origins, there are some studies, such as that by Villa Lever (2016), which show the link between the social origin of students and the degree of academic development of the universities they attend.

According to nationally representative data from the MMSI-2016, which permits to link social origin and type of school, there are significant differences in the average socio-economic background of schools (Figure 8). Among public schools, the differences are small, but this is probably due to the fact that federal and state autonomous schools are included in the same category. In the private sector, the differences are much more marked.



Source: Own analysis based on microdata from MMSI 2016

The concentration of young people from low social origins in schools with low infrastructure, research and teaching capacity configures a "precarious education circuit" (Casillas, Ortega and Ortiz 2015) that institutionalises the disadvantages of the former. It is estimated that this circuit represents 28% of total enrolment at national level. As they are mostly small schools, they comprise 40% of public institutions and 83% of private ones. In other words, a large proportion of new entrants to higher education assist to schools that provide them with few additional resources to compete in the labour market.

In this situation, it is not only the quality of education that is at stake, but also the type of social experience that the university promotes. Saraví (2015) distinguishes between "minimal" and "total" schools. The latter offer a more complete, totalising experience of the individual's life. On the other hand, the former provide a less complete, less supportive education, that discourages continuity.

Although the above is true, we believe it is advisable to avoid an overly centralist or elitist view of the so-called precarious circuit. For many of these young pioneers, for their families and even for their communities, access to university is a socially significant experience. One only has to look, for example, at the processes of identity construction that take place in intercultural universities (Domínguez 2024). The degree obtained, which may be worthless in more demanding markets, might have some relative value at the local level (Márquez 2023).

7. Recent higher education initiatives

The political system has not yet addressed the issue of inequality in HE. Quite understandably, it remains stuck in the logic of increasing access. With a limited budget, it has mostly confined itself to opening up precarious options.

One of the most important commitments in education during the current six-year term has been the so-called "Universidades para el Bienstar" (UB), which provide higher education in

marginalised communities. Despite the symbolic importance of this programme, its budget is very limited (1.5 MMDP in 2023)⁴.

The implementation of UB is characterised by opacity and precariousness (ASF 2019; Escalante 2022; Hernández & Espejel 2023). This has affected the location of the campuses (González Callejas *et al.* 2021), the content of the programmes, the recognition of the degrees and the working conditions of the teachers (called 'collaborators', with no job stability or academic freedom). The precariousness, in some cases extreme, of many of the installed facilities has already been the subject of several reports (Osuna et al, 2022). While it is understandable that this is a project in its early stages that also faces additional challenges, it seems that the problems reported are an effect of a scarce and neglected investment.

The most recent government report indicates the operation of 197 universities and 62,800 students (Gobierno de México 2023), although these figures have not been confirmed by independent evaluations and are not consistent with other figures reported by other offices. The precariousness of UBs is such that enrolments are not even adequately reported through the normal channels of the Ministry of Public Education (911 format). If this were the case, the coverage would represent around 1.2% of the total enrolment in HE for the 2022-2023 cycle (ANUIES statistical yearbook 2023).

However, not all new higher education provision is equally precarious. An interesting case is that of the Autonomous University of Mexico City (UACM). Created in 2001, with campuses located in working-class zones, this university sought to be an alternative for students from working sectors who could not access to other universities, or for those who, due to their socio-economic or living conditions, were unable to adapt to the operating regime of traditional schools. One of the most distinctive features of the UACM is that it does not have an entrance exam, but selects students through a lottery. Another peculiarity is that, in its programmes, it reduces as much as possible the obstacles to students' progress, by making the curricular requirements for enrolment in subjects more flexible. It also offers an

⁴ Compare this figure with the UNAM's budget of MXN \$52,000 million or the MXN \$9,000 million allocated to the UAM in the same year. In the latter two cases, this budget implies an expenditure per student about four times higher than that of the UBBJs (Osuna et al. 2022).

Integration Programme in the first semester, aimed at levelling the knowledge of students who arrive with very little academic capital and strengthening their bond with the university. Unlike other universities for young people from low-income backgrounds, the UACM has well-paid professors with good working conditions.

Despite this, so far the results are far from promising. Students at the UACM advance at a slow pace at best, and their graduation and diploma results are very low. In 2021, around 45,000 students had passed through the institution. The current enrolment is around 20,000. About 2,500 new students were admitted each year. However, there were only 4,500 graduates and just over 2,000 postgraduates (Cruz Flores 2021). These results have improved over time, but they remain one of the main challenges.

While it is tempting to look for the reasons for these results in the institutional design (the lottery system might be a partial explanation, as it does not privilege the most qualified and motivated students), it is also true that two external factors are at work: 1) the socio-economic situation of many of its students, who have to reconcile education, work and other family responsibilities; and 2) the relative lack of prestige that the UACM has among Mexico City's universities, which means that even many of those who have the opportunity to take a semester or two decide not to continue, probably transferring to another institution, judging that the expected returns are not worth the effort.

In the light of these results, it is worth asking whether this type of higher education provision has reached its limits as an inclusion strategy. The combination of socio-economic vulnerability and lack of prospects associated with the schools accessible to these young people would be very difficult to reverse, even for the most open models.

It is therefore worth asking whether it is necessary to consider even more flexible models, such as the one proposed by the Rosario Castellanos University (URC). This university, which was created during the current six-year term and is aimed exclusively at students in Mexico City, has five academic units. Students do not have to take any exams, although they do have to complete a propaedeutic entrance programme. It offers bachelor's, master's and doctoral degrees in highly demanded fields of study. A particular feature is its flexibility, which combine face-to-face and distance learning. The URC also emphasises the dual nature of its programmes, i.e. the applicability of its knowledge. It has 44,000 students enrolled and,

although it only started operating in 2019, it has already produced 3,000 graduates to date. These figures are promising, but there is still no systematic evaluation of the model or its results.

8. Policy recommendations

Against this background, what measures should be taken to improve access and equity in HE in Mexico?

It is necessary to go beyond the focus on access and adopt a conceptual framework that integrates aspects of quality and equity. In this sense, Silva's (2012) proposal is useful. A comprehensive policy to extend rights with equity in HE requires at least three elements: 1) effective access; 2) permanence; and 3) meaningful outcomes.

Effective access implies that all young people who wish to do so have access to satisfactory educational opportunities that meet their expectations, without their opportunities being limited by the scarcity of options. Continuity entails successful trajectories, which require moving beyond traditional models of education, recognising differences in students' preparation, and providing institutional and pedagogical support to compensate for these inequalities. Finally, meaningful outcomes require students to develop skills that expand their opportunities and freedoms (Silva 2012); in other words, quality education with a holistic perspective.

Making progress on these fronts is not a task that depends solely on state actors, but also requires the active involvement of universities.

Changing admission rules

While meritocratic admissions mechanisms (knowledge-based exams) are a relatively efficient selection tool that ensures a minimum of homogeneity among students in a given cohort, they tend to perpetuate inequality of opportunity, especially in the access to the most demanded options. Moreover, in some universities this mechanism is reinforced by the automatic promotion from preparatory schools run by the same institutions.

While it is not feasible to completely abolish these exams, as the resulting over-demand would be unmanageable, it is advisable to revise them to reduce the weight of socio-economic background on its results. This could be done through some type of affirmative action system. The exams could sort students by socio-economic sub-groups, or by other criteria such as school of origin, and make selections within these groups.

Compensation and retention strategies for the first year at university

Affirmative action is likely to cause some level of disruption to the university system, particularly in the more academically demanding schools. Universities would have to educate an even less prepared proportion of students than they currently do.

In Mexico, the first year of university has been found to be particularly challenging for students from low-income backgrounds. This is not only due to the economic deprivation of their homes, but also to the student's interaction with the school: difficulties in adapting to university requirements, performance problems, challenges in the relationship with teachers, among others.

It would therefore be necessary to develop initiatives aimed at supporting first-year students. These initiatives should include introductions to the institution, propaedeutic and remedial courses, tutorials and learning strategies. The most important dimension seems to be the pedagogical one, which requires constant updating of teachers capabilities (Silva 2011).

However, combining academic quality with inclusion might have structural imitations. The case of the UACM mentioned above is highly instructive. A perspective of widening access based on the right to education has to be reconciled with at least basic learning requirements, and the fact that the demand for higher education is an uncertain bet for many students. For many students, this might simply not be possible. This is not necessarily a question of motivation; for some young people, entering university may be a stage of exploration, the abandonment of which is not necessarily the system's fault.

A system that seeks to guarantee education as a right must accept a certain number of drop-outs. What must be avoided is that this drop-out is due to the inability of schools to meet expectations or to support well-motivated students.

Diverting demand through high quality schools

The problem of effective access, however, cannot be solved only by making access and retention in traditional schools more equitable. It is also necessary to divert demand to other schools, but this requires that these schools are attractive options.

The policy of increasing access through marginal, underfunded options where inclusion is purely nominal, such as the UB programme, must be abandoned. The political system must understand that the main problem in HE today is one of quality.

Rather than creating new, fringe universities, existing options need to be strengthened. In some areas where coverage is low and inequality high, such as Oaxaca, Chiapas and Guerrero, there is a need to significantly expand provision. This cannot be achieved through extreme deconcentration. Large universities should be supported, allowing the same cognitive economies of scale as traditional universities. For young people in small localities, distance or blended learning should be explored.

New university options need to be different from traditional ones, as they need to adapt to different demands. They need to offer knowledge that is more directly linked to the market and, in this sense, they need to be diverse. But, at the same time, they must provide basic cognitive tools, useful for life and for further learning. This requires considerable design and planning, but also substantial investment in adequate resources and teachers.

One step back: higher education policies should begin at an earlier level.

A prerequisite for increasing access to HE is the completion of upper secondary. Currently, net coverage at this level is relatively stagnant, between 61% and 63%. Although enrolment is massive, the dropout rate is very high (11.6% per year). As a result, the completion rate is around 70%. The stability of these figures over the last 10 years is worrying, especially as upper secondary education should be universal according to the Constitution.

Dropout is not only caused by economic factors, but also institutional ones. The curriculum in most schools is not attractive or relevant; there are learning problems that the schools are unable to address; upper secondary institutions do not promote student engagement.

In this sense, scholarships, however universal, are not the solution. These must be accompanied by other institutional policies to prevent early school leaving:

1. Reducing the diversity and social stratification of upper secondary
2. Improving infrastructure and facilities.
3. Improving the conditions of teachers by strengthening their relationship with the institutions. This will also improve the quality of education.
4. Improve the attractiveness of this level with certifications linked to the labour market.
5. Implement specific measures to reduce drop-out rates: in particular, tutoring and early warning systems.

Establish a single information system for HE.

A final problem is that, in Mexico, there is no single information system on students and their progress through the HE system. The ANUIES statistical yearbooks only provide information on enrolment, entry and exit, disaggregated by system, school and career. This is done through a common format known as “911”. The main problem is that this information system is based on a 20th century logic, which focuses on the volume of enrolments and some basic demographic characteristics.

Except for the few universities that collect their own data, there is no way of knowing the socio-economic conditions of applicants, their total number (as opposed to the number of applications), or their previous educational record. Nor is it possible to know their educational trajectories: completion rates per cohort, completion times, interruptions, school changes. Nor it is known whether students are in their first choice or, on the contrary, have obtained a place in a career or school other than those originally planned.

This lack of information makes it impossible to know exactly how socially stratified the system is and how much the regionalisation of supply affects equity. The best information available comes from the main universities (UNAM, UAM), which are the ones with the best

records, but also the most selective, which could introduce a bias and overestimate the selectivity that actually exists.

It would therefore be necessary to complement the 911 format with a national system of information on socio-economic background and educational trajectories, linked to the individual's ID number (CURP). This system could be provided with individual information on social background and other complementary data, such as health conditions at birth. This could be done from as early as primary school, when children are registered at school. It could also be complemented, more or less automatically, with performance and trajectories information through the whole educational career. Socio-economic information could be updated at the time of each school enrolment, and it would be the schools themselves that would provide information on careers through records of subjects taken, exams, etc.

In short, the expansion of HE cannot continue along the policies implemented so far, which only guarantee a precarious and vulnerable inclusion. Strong investment is needed to develop attractive and quality options that meet the aspirations and needs of young people, especially those from lower social strata. In addition, it is advisable to review selection tests, framing them with positive action policies, while developing institutional support systems for the most vulnerable students.

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