

### 3. STUDENTS

Enrolments in the 19 countries comprising the Latin American and Spanish-speaking Caribbean region in 1994 totalled 7,405,257, of which 68.5% was accounted for by universities, 77% of them public. Enrolments in private universities and other HEI's totalled 38.1%.

*Table 3-1*

Total **enrolment** for the region by type of institution and sector. 1994

Type of institution	Sectors				Totals	
	Public		Private		No.	%
	No.	%	No.	%		
Universities	3,530,650	77.0	1,540,081	54.6	5,070,731	68.5
Other HEI's	1,054,395	23.0	1,280,131	45.4	2,334,526	31.5
Totals	4,585,045	100.0	2,820,212	100.0	7,405,257	100.0

Source: Table 12, Appendix II

In all, there were 762,291 graduates, 64% of them from universities. Universities accounted for 80% of the public sector graduates; whereas in the private sector, the percentage of university graduates was only a little higher than the percentage of graduates from other HEI's

Table 3-2  
Graduates by type of institution and sector. 1991-94.

Type of institution	Sectors				Totals	
	Public		Private		N°	%
	N°	%	N°	%		
Universities	307,656	79.9	169,457	52.7	485,363	63.7
Other HEI's	120,373	28.1	151,783	47.3	276,928	36.3
Totals	428,029	100	321,250	100	762,291(a)	100

Source: Table 14, Appendix II

(a) The total does not coincide with the sum total of the columns for private and public education, as it includes in the total countries with no discriminated information by type of institution.

### *Dimension of the NHES's*

The diversity observed recently as characteristic in the region's national higher education systems (NHES's), can also be seen in the distance in their size compared with the volume of enrolments in the different countries. Five groups of countries coexist in the region. At one end there are three countries whose NHES's have over one million students, and at the other eight countries whose NHES's have less than 150 thousand students.

Table 3-1  
Classification of the Latin American National Higher Education Systems by volume of enrolment:

- **Megasystems (with over one million students):**  
Argentina, Brazil and Mexico
- **Large systems (one million to 500,000 students):**  
Colombia, Peru y Venezuela
- **Medium systems (500,000 to 150,000 students):**  
Bolivia, Cuba, Chile, Ecuador
- **Small systems (under 150,000 students):**  
Costa Rica, El Salvador, Guatemala, Honduras,  
Nicaragua, Panama, Paraguay, Dominican Republic,  
Uruguay.

Source: Table 12, Appendix II

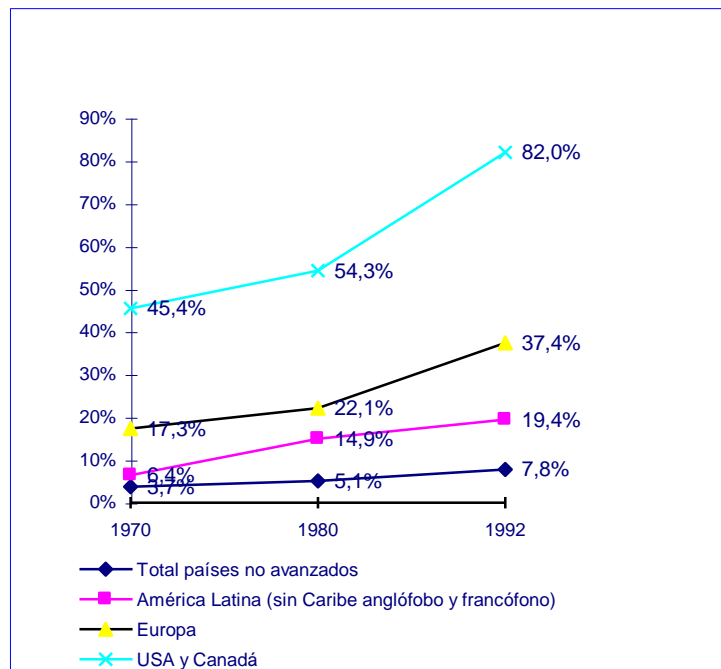
### *Rates of schooling and models of access to higher education*

In 1994, the gross rate of regional schooling was 20.7%. This figure has risen gradually as shown in Figure 3.1 where the enrolment rate for 1992, which was 19.4%, was used for the purpose of comparing this with other regions in the world.

Figure 3-1

Evolution of gross schooling rates. World comparison.  
1970-1992.

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Total undeveloped countries

Latin American (without English and French-speaking Caribbean)

Europe

U.S.A. and Canada

Source: García Guadilla, 1996

At the beginning of the eighties, Latin America entered what is known as the "access by the masses model" having exceeded 15% of its rate of higher education schooling.<sup>1</sup> However, this regional average

<sup>1</sup> It has been fairly generally agreed to accept the classification suggested by Trow (1974) to identify different stages of the growth of enrolment in higher education, according to the rate of schooling attained by other countries at a given point in time. Thus, the "access by the elite model" is considered when a country's rate of schooling is below 15%; the "access by the masses model," when the schooling rate is between 15% and 35%; and the "universal access model" when the schooling rate exceeds 35%.

conceals the fact that although more than half the countries in the region belong to the "access by the masses model," there are six countries that still have an "access by the elite model" (Brazil, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Paraguay) and one country (Argentina) which a few years ago attained the "universal access model," with an enrolment rate as high as the average for Europe.

Table 3-4  
Models of Access to Higher Education. 1994

***1 Country with Universal Access Model***

(with schooling rates over 35%):

Argentina

***12 Access by the Masses Model***

(with schooling rates between 35% and 15%):

Bolivia, Colombia, Costa Rica, Cuba, Chile,  
Ecuador, El Salvador, Panama, Peru,  
Dominican Rep., Uruguay and Venezuela

***6 Countries with Elite Model***

(with schooling rates under 15%):

Brazil, Paraguay, Mexico, Nicaragua, Honduras,  
Guatemala, El Salvador

Source: Table 5, Appendix II

Higher education schooling rates occur within a context in which the illiteracy rate and the rates of primary and secondary schooling in the region are as follows: 15.3% illiteracy; 93.6% primary education; and 47.1% secondary education. It is important to point out that some countries that still have high rates of illiteracy have attained higher education rates corresponding to the "access by the masses model": Bolivia, Colombia, Dominican Republic, Ecuador, El Salvador, Panama and Peru. The fact that the "access by the masses" model coexists with high illiteracy rates emphasizes the differences in our countries and the fact that these differences tend to be extremes.

Although in the "access by the elite model" it is easier to make higher education the extension of secondary education; in the case of the "access by the masses model," and above all in the case of the "universal access model," the countries find it harder to manage the

imbalance between the demand for education and the available supply. This situation has led to the need to implement a different series of selection criteria. Nine countries in the region have a generalized higher education entrance examination (Bolivia, Brazil, Chile, Colombia, Cuba, El Salvador, Paraguay and Venezuela). In addition to this examination some of these countries - Chile, Cuba and Venezuela - also take the secondary school results into account. In most of the other countries, the education institutes are entitled to set their own entrance examinations. This is particularly so in the case of the elite private ones.<sup>2</sup>

It is interesting to note that it is not necessarily the countries with the highest schooling rates that have introduced entrance examinations. This is so in Argentina which has a "universal access model"; and also in Costa Rica, the Dominican Republic, Ecuador, Panama, Peru and Uruguay which have "access by the masses models," and yet continue to have unrestricted entrance systems. On the other hand, students in countries like Brazil with an "access by the elite model" must sit a generalized entrance examination.

Within each model of access there are nuances that help explain the varying dynamics that the countries develop in order to balance internal pressures. For example, although Venezuela has a generalized entrance examination, it has developed a public sector of non-university institutes that allow what is tantamount to unrestricted access, while at the same time implementing a rigorous selection process for access to some of the more prestigious courses and universities. In the case of Brazil and Chile, the policy for public sector admission is fairly selective; and the differentiation occurs more in the private sector. This explains the extent to which the private sector in both countries has expanded, while enabling the public sector to remain restricted. For some authors,<sup>3</sup> the public sector in Brazil and Chile was saved from becoming the sector catering to the masses, leaving the private sector with somewhat of a stigma as the purveyor of second-class higher education.

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<sup>2</sup> See García Guadilla, 1996, for a broader analysis of access to higher education in Latin America.

<sup>3</sup> Klein & Sampaio, 1994.

The type of entrance process in different countries also affects their forms of segmentation. For instance, the fact that Colombia's public sector has restricted income and its private sector has a strong elite model, leads to segmentation between the prestigious institutions of each sector. On the other hand, in the case of Mexico, owing to the public sector's unrestricted entrance requirements, there is segmentation between this sector and the private elite sector. Although graduates from the main public institutions are recruited by the State, and those from private institutions are recruited by the business sector, lately the State is also beginning to recruit graduates from the most prestigious private institutions for top administrative jobs.<sup>4</sup>

In Argentina, the meaning of unrestricted entrance to university was qualified in the last higher education act which was passed at the end of 1995 and institutions, or the faculties themselves in the case of very large institutions, were given the power to set their own entrance examinations. Given the political connotation of an entrance examination in that country, because of its tendency to be associated with its periods under dictatorship, this has been one of the most controversial issues of the new laws, and was put forward as a means of compensating for the deterioration of the universities catering principally to the masses.

### *Socio-economic level of the students*

There is very little data on the different socio-economic levels of students in higher education. Presumably the region follows a similar pattern to the countries in the following table. It shows that countries like Peru - with a large indigenous population - have the lowest percentages of low income groups in higher education. The Chilean case is interesting too because of the small number of students in the low income group.

Table 3-5  
Allocation of students to higher education by socio-economic level.  
Several years.

Countries	High	Medium	Low
Argentina (a)	8.8	62.1	29.1
Chile (b)	30.2	58.8	11.0

<sup>4</sup>Levy, 1986.

Peru (c)	36.6	57.1	6.2
Dominican Rep.	20.1	52.7	20.1
Uruguay (d)	34.4	44.5	17.7
Venezuela	11.8	60.5	27.7

Source: Replies to National Reports

(a) Only for public universities. Drawn up on the basis of father's level of education.

(b) The quintiles were determined based on the income level of the student's family group.

(c) Data based on National Survey of Living Standards. 1985-86.

(d) Census of students from UDELAR, 1988.

### *Area of knowledge*

First of all it is important to point out the difficulty encountered in comparing enrolments by area of knowledge because each country uses a different classification system. The General Executive Secretariat of ANUIES (Mexico) prepared a comparative study for UNESCO of higher education's areas of knowledge in several countries in Latin America and the areas of knowledge of the International Standard Classification of Education (ISCED).<sup>5</sup> However, the conclusions reached are not very enlightening; in the first place because the categories used by ISCED, which are probably still in force, date back to 1975. Clearly with so many changes in this field, such classifications should be more frequently revised and made far more generic, easier to handle and more flexible.

For this study, a classification has been used that is better adapted to the need to integrate the existing categories in the Latin American countries. Thus the classification adopted here responded to practical needs and is not intended to be the standard.

Table 3-6  
Enrolment and graduates by area of knowledge. Regional totals. 1994

Areas of Knowledge	Enrolment		Graduates	
	N°	%	N°	%
Education	421,930	6.5	84,453	12.4
Humanities	743,183	11.5	47,974	7.0
Social, Jur., Com. Sc.	1,883,628	29.2	184,519	27.0
Economics, Business.	778,318	12.1	105,624	15.5
Medical and Health Sc.	727,862	11.3	82,535	12.1
Natural, Math and Stat. Sc..	336,174	5.2	36,282	5.3
Engineering, Technologies	1,227,905	19.1	114,913	16.8
Agric., Vet and Fish. Sc.	233,804	3.6	20,333	3.0
Not specified	94,300	1.5	5,442	0.8
Totals	6,447,104	100%	682,075	100%

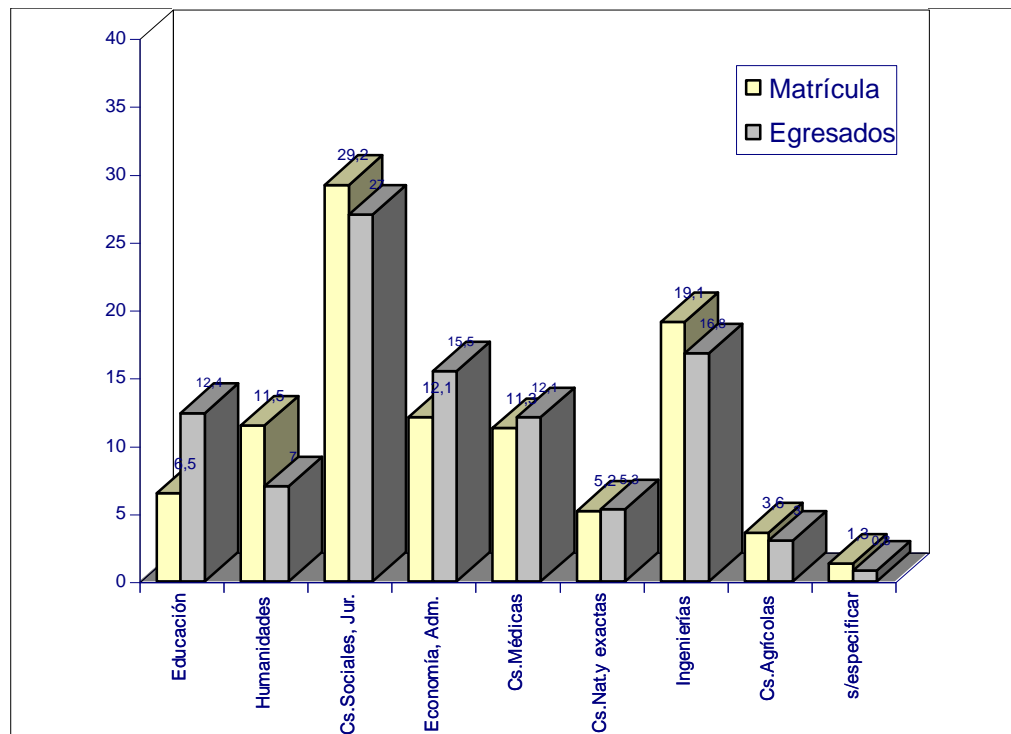
<sup>5</sup> ANUIES, 1994

Source: Tables 13 and 15, Appendix II

The above table shows that the areas with the most students is Social Science - which includes Law, media studies and behavioural science; second comes engineering - which includes physical science, architecture and technology; and thirdly, economics and business studies. Third comes economics and business studies. The area with the fewest students is agricultural science, which includes fisheries and veterinary science, and natural and exact science.

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Figure 3-2  
Comparison of areas of knowledge by enrolment and graduates. Percentages. 1994.



Source: Tables 13 and 15, Appendix II



Enrolment  
Graduates

Education  
Humanities  
Jur. Social Science  
Economics, Business.  
Medical Science  
Natural and Exact Science  
Engineering  
Agricultural Science  
Unspecified

The above figure clearly shows that both social science and engineering are following an upward trend, if it is remembered that - proportionally - the percentage of enrolments in these areas of knowledge appears more frequently than the percentages of graduates.

In order to put the significance of regional proportions in terms of areas of knowledge into perspective, it is useful to compare them with the proportions that are characteristic of some of the most important developed countries. Nonetheless, even there the comparison is difficult as these countries also lack homogeneous classification criteria of areas of knowledge. The information used for this comparison - taken from the *Encyclopaedia of Higher Education, 1992*,<sup>6</sup> shows the different ways in which the areas of knowledge in different countries in the world are presented. Given such a diversity of criteria, the most succinct method of classification scheme, and one that is used by a number of countries, will be used. It classifies according to three categories: exact science, social science and the humanities. With this simplified, but useful classification, Latin America can be compared with countries such as the United States, Germany, France, Great Britain, that are renowned for their modern higher education systems.

Table 3-7  
Enrolment by areas of knowledge. International comparison.

Areas of Knowledge	USA(a) (1985)	Germany (1988)	France (1987)	Spain (1985)	Gt. Britain (1986)	Japan (1989)	L. America (1994)
Exact Science	36.6	43.1	40.5	48.6	51.9	35.7	40.5
Social Science	28.9	25.6	28.3	27.2	29.6	39.4	41.3
Humanities	25.6	31.4	31.2	24.2	18.5	24.7	18.0

Source: The Encyclopaedia of Higher Education, 1992

<sup>6</sup> Published by Burton Clark & Guy Neave.

(a) 8.1% not determined

One can see from the above table that in Latin America, the proportion of exact science (which cover the whole range of science other than social science or the humanities) differs very little from the majority of the countries in the table, similar to the U.S.A., Germany and Japan. Only Spain and Great Britain have a higher proportion than the rest in these areas of knowledge. So, a tentative interpretation - since a definitive one calls for more detailed studies - would be that the region follows a similar trend to international patterns as far as areas of knowledge are concerned. Taking each Latin American country separately, one sees that there are seven with higher averages than in the exact science category, that in the social science and humanities areas. This applies to: Argentina, Bolivia, Chile, Cuba, Mexico, Nicaragua and Peru (See Figure 3.3 in the appendix to this chapter).

Now, the weight of the exact science group in the region has been guaranteed by the public sector since, as the following table shows, the private sector has minimal participation in the exact science group as a whole, whereas social science and the humanities account for the largest proportion of enrolments. No significant differences can be seen between the countries with the greatest proportion of enrolments in the private sector. What can be seen is that both Colombia and Mexico have a larger proportion of enrolments than the rest of the countries in engineering, that corresponds to the private elite secular model which, as mentioned before, is quite significantly represented in both countries.

Table 3-8  
Programmes offered by the private sector in five countries

Areas of knowledge	Countries with high percentage of private sector (over 50%)			Countries with percentage of private sector under 25%	
	Brazil (1988) %	Chile (a) (1989) %	Colombia (1990) %	Argentina (1988 y 1992) (a) %	Mexico (1990) %
Exactas Sc.	9.0	...	1.9	16.6	1.6
Engineering	8.0	9.5	18.8	...	31.7
Medical Sc.	9.0	...	10.9	8.6	4.2
Social Sc.	47.0	68.1	45.6	43.9	52.8
Humanities	25.0	19.0	21.5	29.8	6.6
Agriculture	1.0	3.2	1.3	...	3.1
Totals	...	...	1,301	639	1,246

Source: Balán & García, 1993, p. 48-51; and Hanel & Taborga, 1992, p.122.

(a) Universities without state funding.

### *Student mobility*

The main country of destination for the Latin American countries is, without a doubt, the United States. The preferred countries in Europe are France, Great Britain, Germany and Spain. Of all the countries of the region, Mexico seems to be the one of choice for the Central American countries.

Table 3.9  
Areas of knowledge with highest number of student abroad. 1994

Countries	First Place		Second place		Third Place		Rest	Total
	Destinatio n	%	Destina- tion	%	Destination	%		
<b>Brazil</b>	USA	40.5	France	17.3	G.B.	16.4	25.8	1,950
<b>Chile</b>	USA	42.0	France	15.4	G.B.	8.9	35.2	10,698
<b>Colombia</b>	USA	10.0	Canada	10.0	Germany	5.3	73.0	299
<b>Costa Rica</b>	USA	59.0					41.0	100
<b>Guatemala</b>	Spain	...	Chile	...	Mexico	...		
<b>Mexico</b>	USA	62.5					37.5	
<b>Nicaragua</b>	Socialist countries	...	USA	...	Mexico	...		
<b>Panama</b>	C. Rica	27.9	Mexico	25.6	USA	18.7	27.6	780
<b>Dominican Rep.</b>	USA	...	Mexico	...	Spain	...		
<b>Venezuela</b>	USA	58.4	France	10.0	Germany	7.1	57.5	1,195 (a)

(a) Scholarships from FUNDAYACUCHO. No discriminated data by destination could be obtained for the total number of 3,973 scholarship students.  
Source: National Reports.

The areas of knowledge with the largest number of students studying abroad are the various fields of engineering. However, generally speaking there seems to be no definite patron, since the responses cover a fairly wide range of areas.

Table 3.10  
Areas of knowledge with largest number of students abroad. 1994

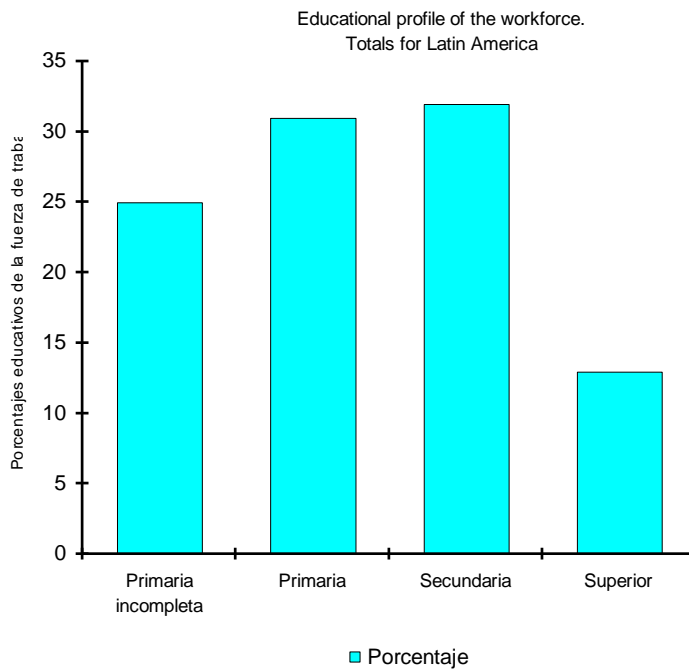
Countries	Frequency of areas chosen		
	First place	Second place	Third place
<b>Brazil</b>	Engineering I.T.	Humanities Social Sc.	Exact and Earth Sc.
<b>Colombia</b>	Engineering	Economics Business	Social, Juridical and Communication Sc.
<b>Costa Rica</b>	Natural Sc.	Engineering	Medical Sc.
<b>Mexico</b>	Social Sc.	Natural Sc.	
<b>Panama</b>	Medical Sc.	Social, Juridical, Communication Sc.	Engineering
<b>Uruguay</b>	Social Sc.	Agricultural Sc.	Basic Sc.
<b>Venezuela</b>	Engineering	Social, Juridical, Communicat Sc.	Medical Sc.

Source: National Reports.

Figure 3.3  
Percentage of enrolments in exact science areas (engineering, science, etc.).  
1994

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ES DISTINTO AL GRÁFICO EN EL PAPEL



Source: Table 13, Appendix II

agregar:  
PRIMARY UNFINISHED    PRIMARY    SECONDARY    HIGHER  
Percentage

Figure 3.4  
Enrolment in higher education: total, universities and other HEI's. 1994

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Nivel educativo	Porcentaje
Primaria incompleta	25
Primaria	31
Secundaria	32
Superior	13

Source: Table 12, Appendix II

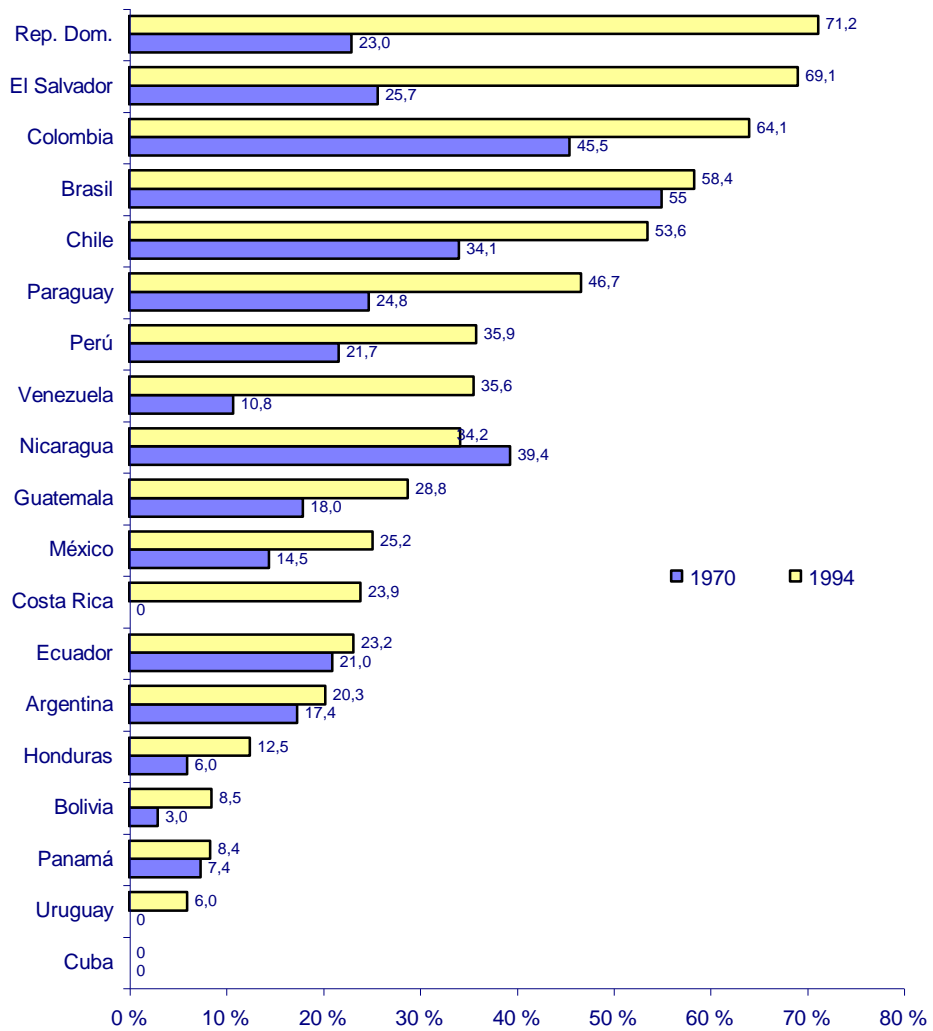
Figure 3.5  
Rates of schooling in higher education in Latin America, 1994

Nivel educativo	Porcentaje
Primaria incompleta	25
Primaria	31
Secundaria	32
Superior	13

Source: Table 5, Appendix II

Figure 3-6  
Comparison of private enrolment in last 25 years. 1970-1994.

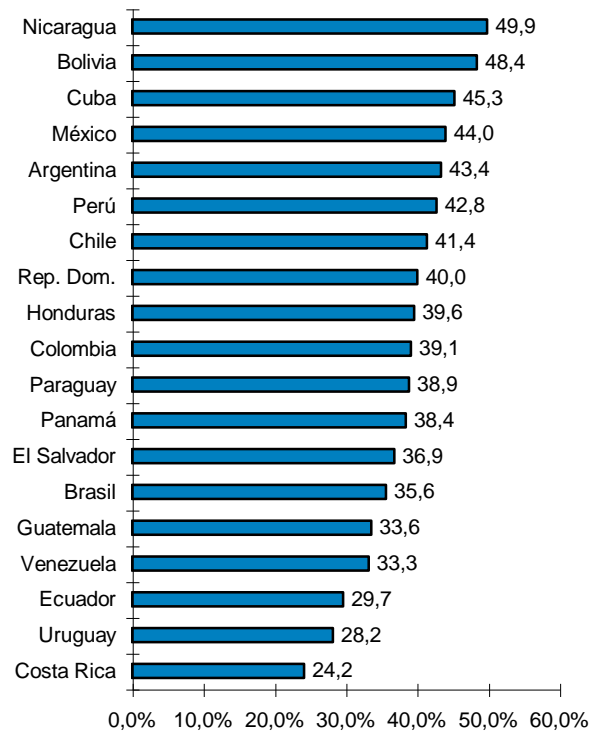
OJO: CAMBIAR NOMBRES PAISES



Source: 1970: García Guadilla 1996  
1994: Table 5, Appendix II



Figure 3-3  
Percentage of enrolment in the exact science areas (engineering, science, etc.). 1994

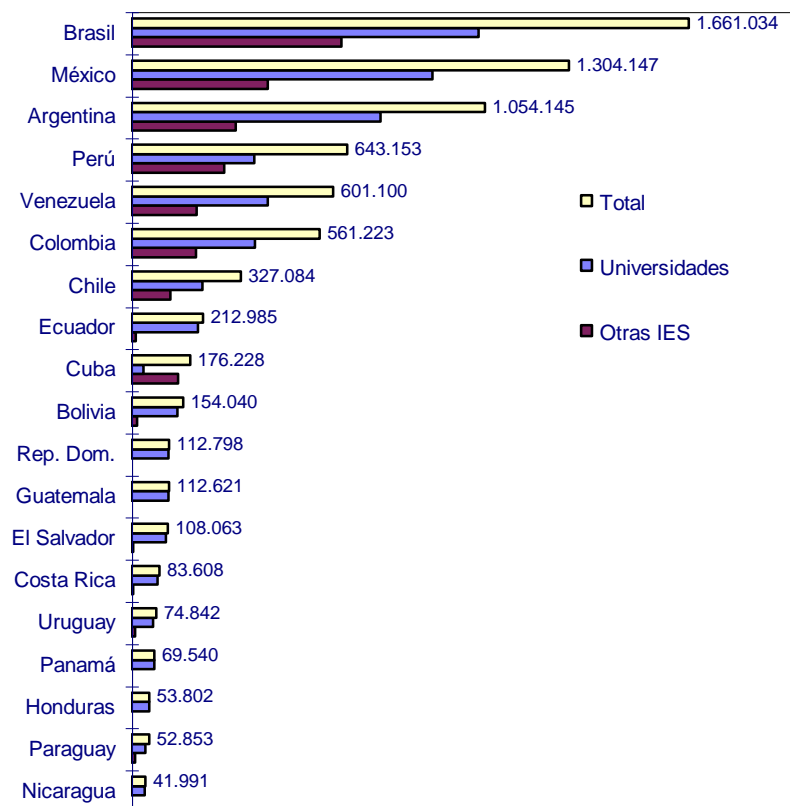


## OJO: PUNTOS Y COMAS Y PAISES

Source: Table 13, Appendix II

Figure 3-4  
Enrolment in higher education: total, universities and other HEI's. 1994

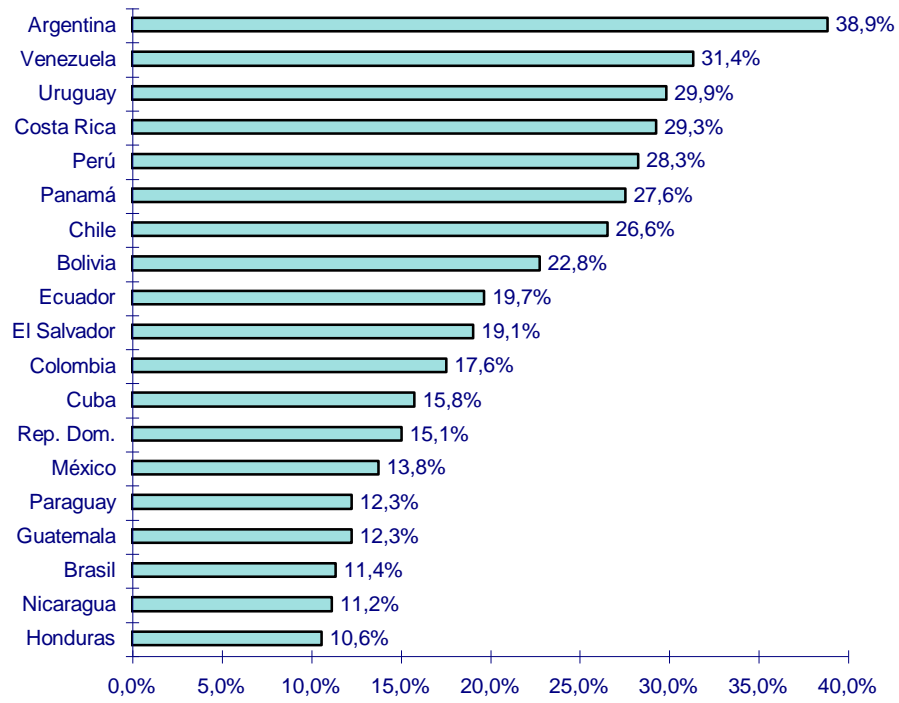
### OJO: PUNTOS Y COMAS Y PAISES



Source: Table 12, Appendix II

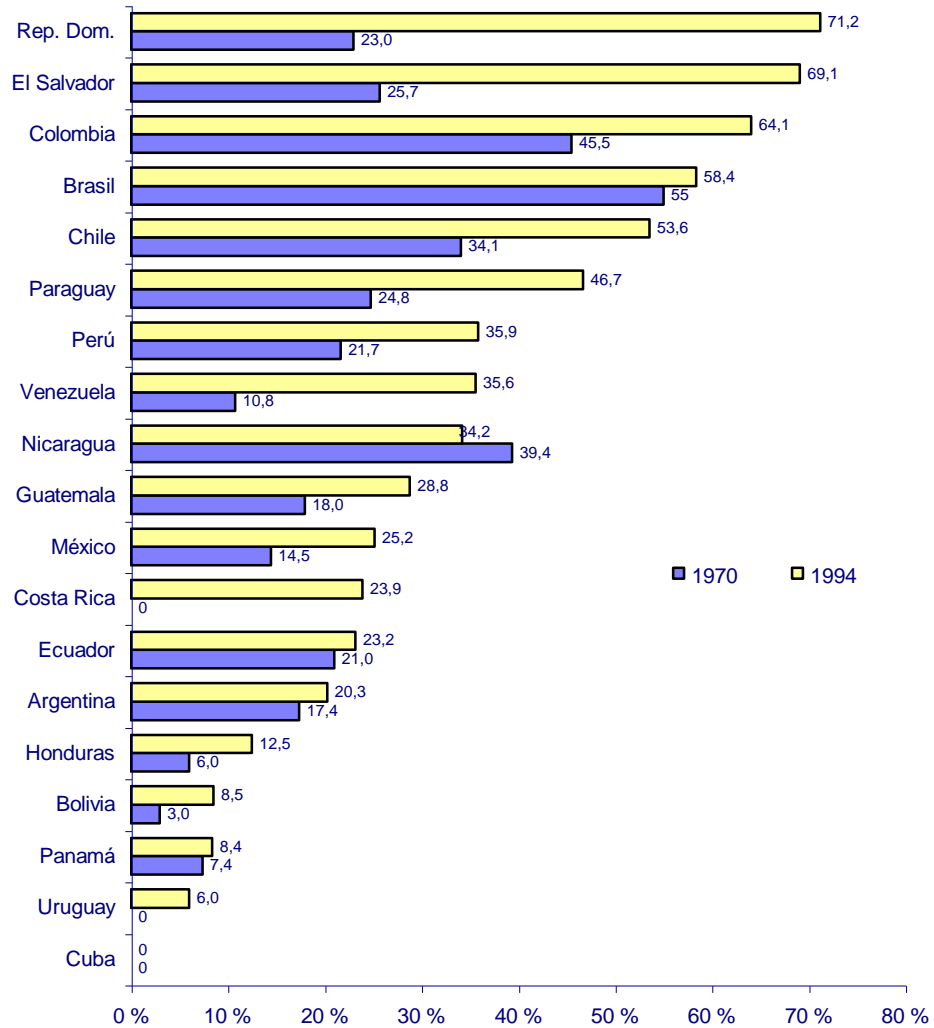
Figure 3-5  
Rates of schooling in higher education in Latin America, 1994

### OJO: PUNTOS Y COMAS Y PAISES



Source: Table 5, Appendix II

Figure 3-6  
 Comparison of private enrolment in the last 25 years. 1970-1994.  
**OJO: PUNTOS Y COMAS Y PAISES**



Source: Year 1970: García Guadilla 1996  
 1994: Table 5, Appendix II