

**Critical Choices at a Critical Age: Youth Emancipation Paths and School
Attainment in Latin America**

**Carlos Filgueira
Fernando Filgueira
Alvaro Fuentes**

**DRAFT VERSION
Paper presented to the 8th round of the IADB**

April, 2000

Abstract

This paper is about how young people become adults in Latin America and how that process affects educational attainment. Through the study of four countries that represent three levels of development we show that educational attainment of individuals is closely linked to the decisions that young people make regarding adult roles or what we call their emancipation patterns. We document the differences that countries have regarding the age at which young people start working, marry and leave the educational system. Through factor and hazard analyses we further show how this dimensions vary according to gender and income within countries and how they affect the chances that they will remain in the educational system.

Findings indicate that countries development levels strongly affect the modal ages at which people become adults, rushing the process in low development countries and delaying it the higher we move into development stages. Secondly, within countries we find that males and females present distinct risk factors regarding educational attainment; public roles (work) increase the risk of drop-out for men and private roles (marriage) increase this risk for women. In addition and as expected lower income groups are more at risk and present earlier adoption of adult values than higher income groups. The interrelation of income and gender operate differently in emancipation patterns and in how public and private adult roles affect the chances of remaining in the educational system. While for women a higher socioeconomic status as measured by household educational climate and income decrease the risk that marriage has on dropping out, for men these same values increase their risk of leaving the system when they start working. Overall the paper confirms our central hypothesis. In order to increase educational attainment the sequence and timing of adult role adoption have to be factored into policies, or in other words demand problems have to be endogenized into supply solutions. Also and given the relation between contextual, family, individual background variables and emancipation patterns the room for maneuver is rather limited.

High development countries show two possible routes for increasing educational attainment for less developed ones. Uruguay represents a case in which modern gender roles and the compatibility between work and education contribute to relatively high aggregate levels of school attainment. Yet school retention at early ages is low leading eventually to the creation of a group of youth with extremely negative emancipation patterns and low school attainment. Chile represents the other route. High retention rates at early ages based both on positive market signs to educational credentials and expanded efforts on the supply side, combine with a strong stratification segmentation in older cohorts. This leads to a more stratified pattern of school attainment but one that provides for each strata the basic tools for successfully entering adult life. Also traditional gender roles, while they do not negatively affect school attainment, they do limit the return to that educational investment for women, since they enter the labor market far less than their Uruguayan peers.

Critical Choices at a Critical Age: Youth Emancipation Paths and School Attainment in Latin America

1. Introduction

In the 1980s, studies from the World Bank and later from the IADB made a pathbreaking observation in development research. One of the major differences behind the economic and social performances of South East Asia and Latin America could be traced back to distinct efforts and achievements in the accumulation and more egalitarian distribution of human capital. This implied a major shift in developmental discourse, one that called for an urgent reevaluation of education policies in Latin America. More than ten years later, we see that such changes are more easily said than done. Indeed, while access to education cannot be defined as the major problem in the region, drop-out rates, remain a daunting challenge leading to low schooling rates and low overall educational achievements.

Indeed, as compared to other regions in the world, schooling in Latin America grows slowly, continues to be considerably lower than in developed countries and the Southeast “tigers”, and the “growth in the supply of the highest skills has been slow and has not been able to keep pace with demands.”

Many Latin American countries have invested considerably economic resources in order to improve their educational supply, particularly in terms of school infrastructure, human and material resources, and innovative strategies to make schools more appealing to students. For the most part, politicians, experts and policy makers show frustration with the scarce returns of investments made. Policies are simply not producing expected outcomes. The key to this failure is not on the supply but on the demand side: we know little concerning how and why the targeted population behaves as it does.

Thus, the primary focus of diagnosis and policy should go from supply to demand, or from endogenous to exogenous factors to the educational system. Indeed, recently, disappointing school performance motivated international agencies like the Inter-American Development Bank, the World Bank and the Economic Commission for

Latin America, to sponsor studies revolving extra-school factors of educational performance. What these studies clearly show is that most variance in Latin American schooling is not due to access but to drop-out rates.¹ Indeed, the “enrollment profiles of the poor differ across countries but fall into distinctive regional patterns: in some regions the poor reach nearly universal enrollment in first grade, but then drop-out in droves leading to low attainment (typical of South America), while in other regions the poor never enrolls in school (typical of South Asia and Western/Central Africa).”² Also, and as we show in this paper, the drop-out within Latin America shows clearly distinct patterns in terms of modal ages of drop-out and distance between poor and non-poor sectors and among genders.

Overall a major shift in perspective is proposed in this paper. Human capital formation is not the sole product of educational supply, as important as this is. Rather, it should be seen as the final outcome of a set of interrelated choices that youth make which interact with the availability of services and resources that society at large offers to these youth. When young people get married, when and how they enter work, when they drop-out or abandon the educational system and when and how many children they have, constitute critical steps and choices that will have a long term impact on their human capital accumulation. In turn, the signs that come from the labor market, the cultural norms and standards regulating gender behavior and the educational system itself constitute the background against which those options acquire meaning and thus should be interpreted.

Three levels of efficient causes can be identified to advance in the understanding of demand and human capital formation. First there are country specific factors that relate to the stage of the demographic transition, economic development and reach and effort of the educational system itself. Broadly, these characteristics influence the set of

¹ See Filgueira C. "Emancipación Juvenil: Trayectorias y Destinos", ECLAC, Montevideo, 1998. Filgueira C. "Vulnerabilidad, activos y recursos de los hogares: una exploración de indicadores," in **Activos y estructura de oportunidades: estudios sobre las raíces de la vulnerabilidad social en Uruguay**, CEPAL, Montevideo. LC/MDD/ R. 180, May 1999. ECLAC, Social Panorama of Latin America, 1997/1998. Londoño J.L. Poverty Inequality and Human Capital Development in Latin America, IADB, 1996. Londoño J.L. and Székely M., Sorpresas distributivas después de una década de Reformas, IADB, 1997.

² Filmer D. and Pritchett L., The effect of Households Wealth an Educational Attainment Around the World: Demographic and Health Survey Evidences, WB.

options youth have and constitute the major scenario where signals, incentives and limits to choices are placed upon young people.

Secondly gender and income differences within countries provide an additional differentiating set of factors that influence choices among youth. Finally, the choices themselves and how they are sequenced and timed are a third set of efficient causes that help us understand demand for education, human capital formation and eventually the intra and intergenerational reproduction of poverty.

2. A structural and demographic typology of Latin American countries

Latin America is neither South-East Asia nor homogenous. We cannot draw automatic lessons from other regions nor from single country experiences. Demand, changes among countries and within countries, changes among gender and socioeconomic groups. In the context of a heterogeneous reality, the issue of school drop out is in some countries is primarily a combination of “supply” and “demand” issues while, in others, primarily a “demand” problem. This implies that there are no easy fixes, and that simply increasing resources will not do the job, though it certainly has to be considered. Yet, understanding how demand operates and why it fails to reach adequate levels, constitutes the major challenge to provide relevant inputs for effective policy design in education. In order to understand this, the first step is to properly consider the heterogeneous structural realities in Latin America. Three factors will be introduced to approach a basic classification of Latin American countries: phase of the demographic transition, economic development and maturity and reach of the educational system.

Demand is driven, among other things, by demographics. In this sense, Latin America is presently undergoing what has been labeled the “golden age” or the “demographic window of opportunity”³. Indeed, between the 1980s and the year 2050 the region will have the best combination of low dependency rates both, regarding children and old age. Yet, this window of opportunity is at very different stages in Latin

³ See Duryea S. and Székely M., "Labor Markets in Latin America: A Supply-Side Story", IADB, 1998. Also see J. A. Magno de Carvalho, "The Demographics of Poverty and Welfare in Latin America:

America. While in some it is coming to a close, in others it still requires time to consider the window fully opened. In any case, the phase at which countries are in their demographic transitions introduce distinct challenges as well as opportunities regarding drop-out and youth choices as they move to adult life. Fertility rates, children dependency rates, urban/rural population are all constraints and inputs that have to be considered in the struggle to increase school attendance. This in turn has to be combined with the accumulated effort that this countries have done in regard to the supply and reach of the educational system. The data for Latin America indicates that broadly three different groups of countries can be identified when we look at demographics: early transition countries, middle of the road countries and countries where the transition is almost complete, and will eventually have to face the challenges of post transitional societies.

Table 1
Demographic stages and educational reach: selected variables

Countries	Demographic factors			Past educational effort and basic schooling		
	Child dependency 0-14 *	% Urban Pop.	Total Fertility Rates	Adult Literacy rate	Net primary enrolment ratio	Net secondary enrolment ratio
<i>Uruguay</i>	41.2	90.7	2.4	97.5	90.3	83.8
<i>Chile</i>	47.2	84.2	2.4	95.2	90.4	80.2
<i>Argentina</i>	50.6	88.6	2.6	96.5	99.9	76.9
<i>Cuba</i>	33.1	76.7	1.9	95.9	99.9	69.9
<i>C. Rica</i>	61.6	50.3	2.8	95.1	91.8	55.8
<i>Colombia</i>	58.3	73.6	2.9	90.9	89.4	76.4
<i>Venezuela</i>	65.6	86.5	3.0	92.0	82.5	48.9
<i>Brazil</i>	56.5	79.6	2.3	84.0	97.1	65.9
<i>México</i>	67.2	73.8	2.8	90.1	99.9	66.1
<i>Honduras</i>	87.3	45.0	4.3	70.7	87.5	36.0
<i>Guatemala</i>	88.3	39.4	4.9	66.6	73.8	34.9
<i>Nicaragua</i>	97.6	63.2	4.4	63.4	78.6	50.5
<i>Salvador</i>	82.5	45.6	3.2	77.0	89.1	36.4
<i>Haití</i>	75.5	33.0	4.4	45.8	34.2	19.4
<i>Bolivia</i>	80.2	62.3	4.4	83.6	97.4	40.0

Source: Magno de Carvalho, op.cit., Development Report, PNUD, Oxford/New York, University Press, 1999.

* Year 1990

Uruguay, Chile, Argentina and Cuba belong to the type of countries that have advanced and in some cases almost completed their demographic transition. Low fertility rates, their age distribution and a predominant urban population coupled with an extended schooling system indicate that the problems of school drop-out belong

squarely on the demand side of the problem. As we shall see these countries face the challenge to bridge the gap in schooling and educational attainment between different social strata and gender. Here, choices of youth regarding adult roles become critical to understand why there is insufficient demand for education at the secondary level.

Colombia, Costa Rica, Venezuela, México and Brazil, present an intermediate situation, both regarding demographic aspects and educational effort and reach (though this group is rather heterogeneous on this last aspect). Still almost universal enrollment in the first years of school suggest that demand remains the critical factor to advance in educational attainment, rather than sheer increases in educational supply. Yet, this countries in contrast to the previous group considered, confront more extended patterns of early adoption of adult roles that diminish the chances of school permanence. Early motherhood, child and adolescent labor, and in some cases earlier marriages are distributed along stratified lines, but advance deeper in the middle income sectors in these countries.

Finally, Guatemala, Nicaragua, Honduras, Bolivia, El Salvador and the extreme case of Haiti are in most cases at an early stage in their demographic transition and still present deficits in the reach of the schooling system that have to be confronted, especially in rural areas, in order to increase enrollment and attendance to school. On the demand side they also present the most complex scenario: a large rural population in which youth enter into work with their family or in the rural labor markets early on and high fertility rates and early motherhood are factors that constitute strong and extended deterrents to enroll or more typically remain in school. Furthermore, the low educational climate in the households that is suggested by the illiteracy levels further inhibits strong educational demand.

These three different types of countries confront distinct challenges and have different opportunities if they want to advance in regard to schooling and educational attainment. Yet what is common to all three, is that demand, and not merely supply has to be understood to advance in this direction. While demographics, supply itself and patterns of inequality are all useful as a first step to understand how demand is formed the emancipation paths of adolescents and youth constitute the necessary second and

more critical step to capture demand formation. To a basic conceptualization of what we mean by emancipation paths we now turn.

3. Understanding critical choices as pathdependent and interrelated options: the idea of emancipation paths

Behavior behind decisions to drop-out from the educational system do not correspond to the typical utility maximization of goods but, instead, to choices between options more-or-less exclusive or compatible. Therefore, the limits of individual educational investment cannot be examined as a derivative from the point where marginal private benefits equate the private marginal cost of the investment, independently from the preferences over other goods. Additionally, neither decisions are made with perfect information, nor return benefits take place at a single point in time. Educational investment typically correspond to benefits that follow a "postponed gratification pattern".

The educational behavior of the youth ought to be considered as a specific component of the more general process of emancipation she or he is undergoing. During this stage there are four important transformation in his or her life, which can be sketched in terms of four dichotomies concerning role changes: studies or not; incorporation to the labor market or not; marriage or not; and parenthood or not.

Whenever youth choices regarding marriage, work or education are addressed, a common place is to stress the importance of such studies because of the major consequences these choices have on young people's future lives. In effect very thorough studies have considered the impact of years of schooling among future earnings, childbearing on employment opportunities, and labor market participation on savings, culture and integration, to name just a few⁴. Fewer studies have concentrated in the interrelationship between these different choices in the shorter term. Or in other words

⁴ See White Riley M., Foner A., and Waring J., "Sociology of Age", in Smelser N. (Ed) **Handbook on Sociology**, Sage Pub. 1988. Clausen J.A., "Early Adult Choices and the Life Course", (Paper) Annual Meeting, American Sociological Association, 1986.

how does childbearing, work, permanence in the formal educational system and marriage interact as adolescents become young people and eventually adults?

Certainly, it seems both theoretically sound and intuitively obvious, not to consider these choices as independent from one another. They are not independent in a double sense. First and foremost, they are pathdependent, because a given option in any of these dimensions affects the chances of being able to act upon the other dimensions. Having a child affect the chances of immediate employment, and working limits the possibilities of continuing and adequately performing in the educational system. Even more obvious, marrying or engaging in stable consensual unions increases the chances of childbearing. We know this, for there are a myriad of studies showing robust relational patterns, and also because imputing causal mechanisms is far from problematic. But choices are not independent from one another in and even more important and individual sense. People, young people, do weigh these choices as cost-opportunity issues and do realize and evaluate the trade-off between them. Furthermore, and drifting away from a rational choice perspective, people attach different symbolic and identity values to these choices as an interrelated set of choices. We know that young women in poor and disadvantaged realms have children early, not just due to irrational behavior, incomplete information or lack of family planning tools, but also because among the different adult status available to them this is the easiest one to achieve and the less dependent upon other people. This in turn will strongly limit and curtail the achievement of additional adult statuses and the completion of young roles (i.e. education). Here both rational and non-rational behavior operates, and does so as a function of available statuses, the differential value attached to those statuses and control over the means to achieve them. This idea of non-independent critical choices is what we termed emancipation paths. The advantage of such a perspective is that it incorporates time and interaction in time, as a strategy to understand youth choices.

3. Some stylized facts on work, family and education of youth in our selected cases: a descriptive and exploratory exercise.

a. Purpose and methodology

Four countries have been selected for this study and three variables have been considered as the major dimensions of emancipation paths of youth⁵. We analyze the patterns of family formation, work and education for Uruguay, Chile, Venezuela and Honduras for adolescents and young people between 12 and 29 years. We then combine these findings, with factor analyses for each country, in which we introduce our emancipation variables and household and individual background variables for four groups within each country: men of high and low income and women of high and low income.

A double purpose guides this exercise. First we want to present some basic curves that show “cohort mortality” along the three emancipatory dimensions. A first simple approach to the question of emancipation paths consists of plotting cohort survival lines between 12 and 29 years for each dimension or variables in each country. The graphs represent in each line the percentage of people by yearly cohort that adopt “adult values” or that abandon “youth values”. In other words, they represent the percentage of all youth for each age that work, have formed a new family and have left the educational system. This allows for a basic country comparison as to when young people adopt adult values and for a more nuanced comparison as to how these adult roles are sequenced or superimposed in time. As we shall see countries differ as to the modal ages in which young people leave the educational system, marry and enter the labor market. Furthermore, in some countries the curves of these different dimensions are convergent as we move to older cohorts while in other they diverge or remain parallel.

Secondly factor analyses serves another subset of purposes. First and foremost if our hypothesis that choices regarding the adoption of adult roles are an interrelated and interdependent set of choices that covary with time, then that should come out in our factor analyses. In other words age and our emancipatory variables should cluster together in one factor or have important weights in one factor. This would not mean that background household and individual variables are not associated with emancipation dimensions, simply that such association is weaker than that among time and emancipation variables and within emancipation variables.

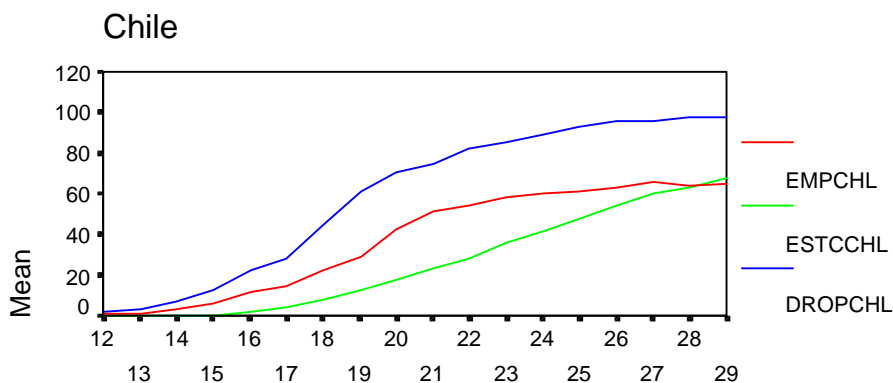
⁵ While it would be extremely useful to add to this dimensions that of parenthood, the data for the different countries does not allow at this point to adequately identify mothers and off-spring, less so fathers and off-springs.

b. Cohort country emancipation patterns and factor analysis.

As can be seen in all four graphs in percentual terms the curves present the expected precedence of role changes. The largest area is always defined by school drop-out, followed by work and then by family formation or marriage. This, does not mean, of course, that all individuals follow this path, simply that it predominates at the aggregate level.

Chile represents a case in which emancipation occurs relatively late in any of the dimensions considered. Broadly 80% of youth who are 15 years of age study, 90 % do not work and almost 100% have not married. A sharp increase in non-attendance to school can be seen as we move to the next cohorts, reaching almost 50% of the population of 18 years and 90% by age 24. Employment follows a similar pattern even though the curves between drop out and work show an increasingly divergent pattern, with employment lagging behind school drop-out. Marriage follows a linear pattern of increase between the ages of 15 and 29, converging towards employment at the end of our age distribution.

Emancipación Juvenil . Abandono escolar, empleo y formación de pareja.



EDAD

Las líneas representan el % de personas que adoptan el valor adulto en cada dimensión

This basic data indicates a pattern that fits the general impression of Chilean society, given its demographics and its pattern of inequality. In short we are faced with a country with a strong stratification and differentiation patterns along income and gender, but with basic integrative mechanisms among those different groups. This could explain on the one hand the good performance in education until 18 years of age, and the sharp decline in school attendance thereafter. Yet, with the data at hand in this section, it is not possible to move further nor to see how well this hypothesis confronts reality. As we move into survival analysis and hazard analyses we will be able to test this hypothesis more adequately.

Table 2
Factor Analysis for Chile*

Upper Income Group	MEN		WOMEN		
	Factor 1	Factor 2	Factor 1	Factor 2	
Education attendance	-.861		-.867		
Age	.786	(-.457)	.885		
Work	.870		.647		
Marital Status	.632		.627		
Years of Education		-.608	.587	(-.410)	
Nr. of kids in household		.731		.727	
Type of household		.611		.676	
Lower Income Group	MEN		WOMEN		
	Factor 1	Factor 2	Factor 1	Factor 2	Factor 3
Education attendance	-.871		-.869		
Age	.888		.851		
Work	.855			.600	(.360)
Marital Status	.704		.854		
Years of Education	(.308)	(-.370)		.800	
Nr. of kids in household		.725		(-.355)	.688
Type of household		.731			.770

Rotation Method: Varimax with Kaiser Normalization

Loadings of less than .300 are not shown, brackets indicates shared loadings between factors

Source: Based on special tabulations from Household Surveys, IADB, 1999.

On the other hand gender differences might be behind the pattern of school drop out and work. In other words, women who leave school would tend to adopt the “private adult role” of marriage and eventually childbearing, rather than the public role of work. Furthermore one could expect that this pattern of emancipation in women is formed along stratification lines. Thus women of higher socioeconomic status would move towards work, while women lower in the stratification system gear towards household responsibilities. If this is, indeed, the case, then the way in which emancipation and background variables cluster together, should be different for men and women. Through

factor analyses we can see strong supporting evidence in this sense even though, we shall need again hazard analyses to find a definite answer as to the plausibility of this interpretation.

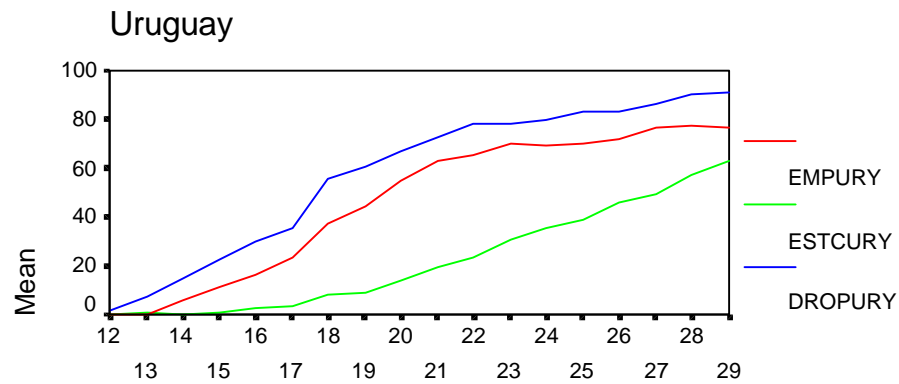
As can be seen from Table 2 a first factor is formed for men which encompasses time (age) and the typical and basic emancipation dimensions (drop-out, marital status and work), while the second factor groups the two socioeconomic and household background variables. But when we move to women, we see that in the lower income group, education attainment, rather than time and other emancipation options, is linked to work. The coefficient signs, further indicates, that the higher the socioeconomic status of women, the more likely they will work.

Uruguay, the other more developed country of our cases, presents a pattern that is similar in some aspects to the Chilean one, though with some telling differences (see Table. Even though Uruguay shares with Chile a late pattern of emancipation, it presents both for education and work earlier adoption of “adult values”. Drop-out at age 15 is 10% higher than in the Chilean case and something similar occurs with work. Yet as we move in older cohorts, drop-out becomes less marked than in the case of Chile, while:

employment continues to grow at a faster rate than Chile. Two additional distinct patterns are worth mentioning in the case of Uruguay. First employment does not lag behind drop-out, rather they evolve throughout our age distribution as parallel lines. Secondly, while early drop-out and entering the work force evolve at a faster rate than Chile, marriage does not. The linear pattern in Uruguay regarding family formation mirrors the Chilean case, and even shows slight differences in favor of Chile (that is more youth marry by age group).

This pattern of emancipation, thus, shares with Chile relatively high ages in which the young become adult, but at the same time suggest that we are in the presence of a country in which gender and income stratification operate differently. Demand for the educational system between 12 and 18 years reaches far less adequate levels than in Chile, yet demand as we move into de older cohorts reverts that trend and comparison.

Emancipación Juvenil . Abandono escolar, empleo y formación de pareja.



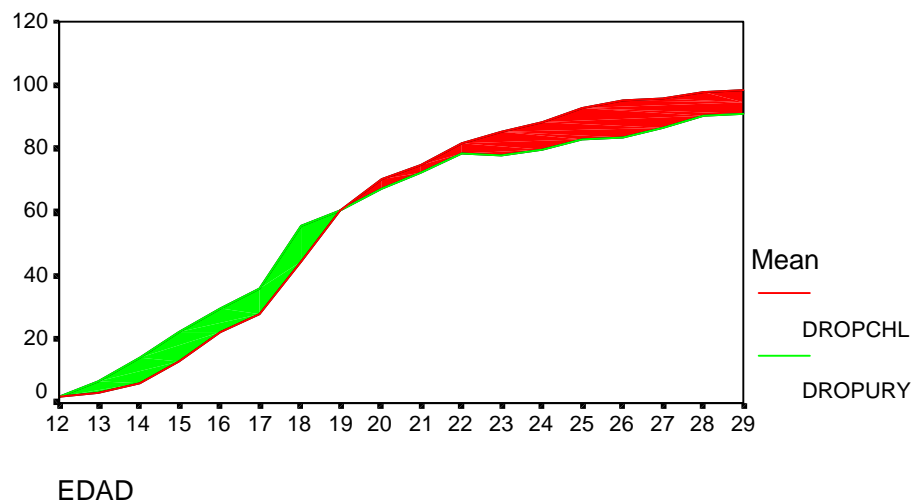
EDAD

Las líneas representan el % de personas que adoptan el valor adulto en cada dimensión

A simple graph showing the difference between each curve in drop out for Chile and Uruguay, conveys this message more clearly.

Drop-out in Chile and Uruguay for cohorts 12-29 years

as % of each cohort



An overall more egalitarian society (or in other words one with less stratification discontinuity) but with less protection for those worse in the income distribution is at work here. Yet the data suggests that Uruguay is also lagging behind high school completion for the middle sectors when compared to Chile. An instrumental market oriented educational investment in a strongly stratified society might be behind Chile good performance, while a more symbolic and status oriented educational investment, that works mainly for part of the middle and most of the upper end of the stratification system might be at work in the case of Uruguay. Beyond this mostly unwarranted interpretations it seems clear that in Chile progress has been made, while in Uruguay there are very good reasons to be rather worried as to the type of society that might be in the wings (see Table 3).

Table 3
Percentage of youth with adult roles at age 15 and 18 by gender and income

Countries	Age	Income* Level	Emancipation Dimensions					
			School Drop-out		Work		Married or informal union	
			Men	Women	Men	Women	Men	Women
Uruguay	15 years	Low	42.9	35.0	20.4	5.0	1.3	3.7
		Middle	11.2	8.9	13.7	5.1	---	3.1
	18 years	Low	75.5	65.8	46.2	28.0	5.2	16.5
		Middle	55.4	46.8	53.2	26.6	1.1	14.0
Chile	15 years	Low	18.3	17.1	4.2	3.9	---	2.7
		Middle	14.8	7.9	8.6	2.7	0.5	0.8
	18 years	Low	48.9	49.2	25.1	7.5	6.5	14.5
		Middle	42.0	44.2	33.1	15.9	1.3	13.9

Source: Based on special tabulations from Household Surveys, IADB, 1999.
Household per capita Income is coding in three levels

The former ideas might still explain both the high retention rates in older cohorts and the low retention rates in younger ones. To this we should add the different characteristics of Chilean and Uruguayan educational systems at the tertiary level. In the case of Uruguay an educational system that is crafted at the third level to allow for both work and study is a major factor to understand high retention rates after 18 years of age. In contrast to Chile, Uruguay has a completely free state university that concentrates most of tertiary level students, and it is typically built along lines that allow for work

and study (flexible hours, no grade requirements or yearly progress to remain in the programs, etc.) This also makes for very long study careers that span very frequently until people reach thirty and beyond. In Chile access to tertiary level is be more stratified, the possibility of working and studying less easy to combine, and the careers shorter.

Regarding the work/family pattern the data for Uruguay suggests that we should not expect large differences along gender in emancipation paths, or in other words that work and education remain the two critical first choices both for women and men, while marriages comes in a clear second. In Uruguay there is a far larger proportion of unmarried youth who both work and have left the educational system than in Chile. This is due mainly to the fact that women of all strata enter the labor force as men do (and even more than men at lower income levels), rather than marry and withdraw from the labor market. Consistently, and in contrast to Chile, factor analyses for the case of Uruguay, show a different pattern in how variables cluster for men and women.

Table 4
Factor Analysis for Uruguay*

Upper Income Group	MEN		WOMEN	
	Factor 1	Factor 2	Factor 1	Factor 2
Education attendance	-.837			-.776
Age	.742	(.544)	.705	(.584)
Work	.756		.538	(.526)
Marital Status	.623			.710
Years of Education		.846	.787	
Nr. of kids in household		-.578	-.675	
Type of household		-.367	(-.446)	.467
Lower Income Group	MEN		WOMEN	
Education attendance	-.812		-.848	
Age	.860		.850	
Work	.793		.480	(.360)
Marital Status	.689		.753	
Years of Education	(.308)	-.705		.747
Nr. of kids in household		.743		-.720
Type of household		.470		-.420

Rotation Method: Varimax with Kaiser Normalization

* Loadings of less than .300 are not shown, brackets indicates shared loadings between factors

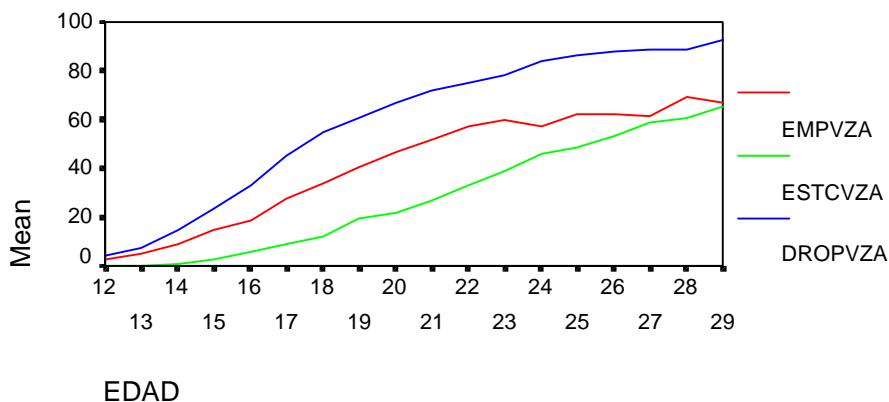
Source: Based on special tabulations from Household Surveys, IADB, 1999.

Uruguay is the only case in which women of lower incomes define factors that are equal to men. In particular, work, is not related to years of education but to time and the other emancipation dimensions.

Venezuela presents an emancipation pattern that combines aspects of both the Uruguayan and the Chilean pattern, although somewhat worsened. On the one hand the relative distance of the three curves mirror the Chilean case, yet the ages at which drop-out occurs better resemble Uruguay both in younger and older cohorts. In effect, drop-out in Venezuela is similar to Uruguay, presenting a continuous albeit slightly higher increase, with low retention at the early stages, but with a less marked increase in drop-out as we move into older cohorts. In contrast to both Chile and Uruguay, marriage is somewhat more steep at early ages, though it then follows the classic linear pattern of the other two countries.

Emancipación Juvenil . Abandono escolar, empleo y formación de pareja.

Venezuela



Las líneas representan el % de personas que adoptan el valor adulto en cada dimensión

Venezuela seems to combine a more traditional division of roles between women and men and a relatively open education pattern. In other words one that does

not close off so markedly as we move into older cohorts. Yet and similar with Uruguay (slightly worse, even) retention in young cohorts is rather low. Yet this is not due to a worse performance for those at the lowest income levels, but is due to low retention rates in the middle sectors. The following Table 5 and factor analysis permits a better understanding of both gender and stratification effects.

As can be seen, 30% of 15 year olds males have left the school system in the lower income group. This puts Venezuela in a better position than Uruguay (see table 3). Yet at 15 years of age almost the same percentage of men have left the system in the middle sectors. Women on the other hand, while more protected from drop-out, enter the labor force very rarely (10 at 18 years in low income households and 22% in middle income ones) even though more than half of them in either income level has left the educational system. This traditional gender pattern, can also be seen in factor analysis.

Table 5
Percentage of youth with adult roles at age 15 and 18 by gender and income

Countries	Age	Income Level	Emancipation Dimensions					
			School Drop-out		Work		Married or informal union	
			Man	Woman	Man	Woman	Man	Woman
Honduras	15 years	Low	68.1	56.6	56.7	11.0	---	3.6
		Middle	51.9	46.3	50.6	19.1	0.5	1.7
	18 years	Low	88.9	83.8	82.9	18.3	5.6	36.7
		Middle	71.5	70.6	67.1	31.5	5.1	35.1
Venezuela	15 years	Low	30.7	23.0	19.4	5.2	0.3	7.5
		Middle	27.7	19.9	20.9	5.3	0.9	4.1
	18 years	Low	65.8	54.9	42.1	10.7	6.8	19.7
		Middle	64.4	52.9	52.2	22.3	5.1	22.6

Source: Based on special tabulations from Household Surveys, IADB, 1999.

As can be seen in the table presenting the loadings for factor analyses, Venezuelan women, present in its second factor work and years of education as its most important variables suggesting again a more traditional pattern in gender behavior among less educated women in both income groups. This factor holds both for upper and lower income women.

Table 6
Factor Analysis for Venezuela*

	Factor 1	Factor 2	Factor 1	Factor 2	Factor 3	
Education attendance	-.849		-.862			
Age	.862		.774	(.451)		
Work	.840		(.375)	.605		
Marital Status	.627		.844			
Years of Education		-.597		.840		
Nr. of kids in household		.766			.715	
Type of household		.612		(-.337)	.840	
Lower Income Group	MEN			WOMEN		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Education attendance	-.841.			-.861		
Age	.857			.845		
Work	.797			(.303)	.582	
Marital Status	.693			.827		
Years of Education		.909			.825	
Nr. of kids in household		(-.474)	.614		(-.301)	.787
Type of household			.882			.751

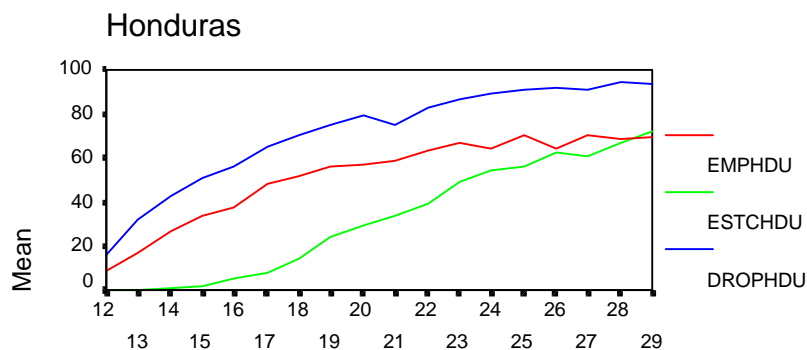
Rotation Method: Varimax with Kaiser Normalization

* Loadings of less than .300 are not shown, brackets indicates shared loadings between factors

Source: Based on special tabulations from Household Surveys, IADB, 1999.

The case of Honduras, the least developed of our cases, presents a pattern that is consistent with the typology presented above in the point covering development and demographic stages of Latin America. Of all our cases, this is the only one, which at age 12 presents an important percentage of people outside the educational system. Indeed, almost 20% of 12 years have dropped out of school, indicating a large proportion of people who do not reach 6 years of schooling. As we reach 15 years of age, more than 50 % of the population has left the system. Child labor is also a clear difference between Honduras and our other cases. Thirty percent of those in the age cohort of 15 years work and at age 18 close to 50% (in that age group) are classified as having a job. It is interesting to note that from that age onwards labor remains almost stagnant as a percentage of age cohorts rising only 15% for the nine years remaining in our age distribution. At the same time (around 18 years), marriage, which shows an earlier start, too, in Honduras, rises more steeply, to catch up with employment by age 26. It is clear, simply by looking at cohort evolution, that we are confronted with a radically different kind of society than any of the other countries. One in which basic schooling and suppression of child and adolescent labor still has a long way to go and penetrates deep into Honduras social structure (see Table 7).

Emancipación Juvenil . Abandono Escolar, empleo y formación de pareja.



EDAD

Las líneas representan el % de personas que adoptan el valor adulto en cada dimensión

While we are not questioning the basic assumption and pragmatic end of this paper (namely the importance of demand on school attainment and the impact of emancipation patterns on educational demand), supply, that, is the expansion in quantity and quality of education, still has in Honduras an important role to play.

Table 7

Factor Analysis for Honduras*

Upper Income Group	MEN			WOMEN		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Educational attendance	-.806			-.828		
Age	.785			.739	(.472)	
Work	.837			.439	(.384)	
Marital Status	.655			.804	.	
Years of Education		.861			.894	
Nr. of kids in household		-.649	(.400)		(-.470)	.662
Type of household			.954			.884
Lower Income Group	MEN			WOMEN		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Education attendance	-.828			-.803		
Age	.804			.862		
Work	.812			(.310)	.462	
Marital Status	.669			.853		
Years of Education		.772			.848	
Nr. of kids in household		-.642	(.410)		(-.367)	.704
Type of household			.937			.773

Rotation Method: Varimax with Kaiser Normalization

* Loadings of less than .300 are not shown, brackets indicates shared loadings between factors

Source: Based on special tabulations from Household Surveys, IADB, 1999.

Factor analyses, shows as in the case of Venezuela and lower income women in Chile, the importance of years of schooling upon the participation of women in the labor market. Instead of work clustering with time and emancipation variables, it does so with education for lower income women and splits between the two factor for upper income women.

c. Some basic findings.

Cohorts behave in all our countries in a manner that broadly resembles a classic emancipation pattern. As we said before, drop/out from the educational system occurs first, followed by work and finally by marriage. All countries also show a marked difference between the public dimensions (work and education) of adult values and the private one (marriage). In effect, a high percentage of young people leave the educational system and start working long before they get married. In contrast to this common patterns some striking differences can be found among our cases.

- Chile and Honduras represent the two extremes regarding drop-out. While in Chile a majority of young people complete approximately nine years of study (only 12.7% of the 15 year old cohort do not attend education), in Honduras at age 15 already half (50.5%) have left the educational system. Between these two countries fall Uruguay and Venezuela, with relatively high drop out rates for the first years of secondary schooling (at age 15 the drop-out reaches 22.2% and 23.5% respectively). The case of Uruguay is especially striking given the maturity of its educational system and the overall low levels of inequality present in the society at large. The early drop-out in this country cannot be attributed to problems of educational supply. Thus the deficit in demand for basic secondary schooling suggests that processes of poverty “hardening” might be taking place at the lower end of the stratification system leading to the creation of intra and intergenerational circles of poverty. Venezuela, on the other hand resembles the Uruguayan pattern of low retention at early ages, with two important caveats. First, at age 12 Venezuela has already lost more than 4% of that cohort while Uruguay less than 2%. This differences become more marked as we reach the end of secondary education. In effect, at age 17 (the end of high school, assuming no repetition or extra age)

Venezuela has only 55% of that cohort in the educational system, while Uruguay still retains 65% of that same age cohort.

- Cohort behavior regarding work follows a slightly different ordering among countries than school drop-out at the earliest age. Uruguay, then Chile, then Venezuela and finally Honduras order themselves in ascending values of child labor. Child labor at age 12 is non-existent in Uruguay, almost nil in Chile (0.9%), yet it reaches 2.7% in Venezuela and almost 10% in Honduras. Early adolescent labor orders countries almost identically to drop-out, showing already the strong association between drop-out and employment. In Chile 6% of 15 year olds work, while in Honduras 33.8% do. Within these extremes fall Uruguay with 11.1% of people in that cohort working and Venezuela with 14.2% of youth in that age entering the labor market. Employment at older ages shows some interesting differences. Uruguay leads the way, with almost 70% of cohort at age 24 working, while Venezuela shows the lowest (57%) proportion in the same age followed by Chile (60%). Honduras presents a relatively high proportion of people in that same age working (64%). Women labor market participation, is behind this differences as shown in Table 3 and 5.
- Forming a new family or marrying clearly reinforces the impression that Chile and Uruguay differ markedly from Honduras and Venezuela, which in these dimensions seem to behave quite similarly. At age 18 only 7% of Uruguayans and slightly more Chileans are married (7.9%), while in the same status and age fall 12% of Venezuelans and 14% of Hondurans. The differences at age 22 show an even more important delay in marriage in Uruguay (followed by Chile) in comparison to the other countries. The data in the same country order is in this case 23%, 26%, 33% and 39%.
- Factor analyses show that gender and income interact in our different countries affecting how work relates to other variables. In particular and for three of our cases (Chile, Venezuela and Honduras) women of lower socioeconomic status enter the labor market more as a function of their educational attainment than as a function of time and other role changes. In the case of Venezuela this is also true for higher

income women. The only case in which the three emancipation dimension cluster together with time without regard to gender is in the case of Uruguay.

4. Cox regression and Hazard analyses: class, gender, emancipation patterns and educational attainment.

a. *Problem formulation. Survival an hazard functions. Life tables and Cox's regression.*

The original formulation of survival analysis supposes the existence of a group of individuals, who are followed through time, so that it can be established if during that period a given phenomena has taken place as, in this case, the drop out from the educational system. The objective of the analysis is to obtain a time function – **the survival function** -, the values of which establish *the probability that an individual has of remaining in the educational system beyond a t moment of his life.*

The method applied implies the existence of a sample of N individuals for whom is periodically registered whether or not the phenomena under analysis occurs. In this case two variables are registered t , the individual's age, and δ a dichotomous variable which indicates whether the individual has dropped out from the educational system at that age. Then a matrix with N rows and t columns is constructed, computing in each cell the values of δ in the period : 0 if the individual does not drop out and 1 if he does. Once the matrix is constructed, the life tables calculate *the survival probabilities at a given age t , using the probabilities conditional on the fact that the individual has not dropped out up to moment t* ⁶.

An operative aspect that influences the form of the probabilities calculus, derives from the fact that generally the observation periods are not the same for all the individuals. In a panel study it is frequent to find desertions among the individuals that are participating, due to different reasons such tiredness, framework's defects, etc. For these individuals then, it is not possible to know the real moment they drop out from the educational system. What it is known is the information of the moment until which they were present, which is used for the calculus of the correspondent probabilities. These

⁶ Instead of using the direct calculus derived from the survivals, the calculus of the survival probability at moment t is constructed from a chaining of conditional probabilities, with which a more precise

observations, that are called **censored observations** will be treated in a especial form in the different modalities the survival analysis can adopt.

The life tables, despite permitting the introduction of control factors such as the economic level and the sex of the individual, present limitations since they do not allow the introduction of other factors, and the direct comparison of the influence of ones and others jointly. For that, the Cox's Regression method is used. It assumes the existence of a group of independent variables X , the values of which influence the current time until the final event occurs. For simplicity, this kind of regression uses the hazard rate to estimate which possibilities the individuals face of dropping out from the system. This is a time *function* $h(t)$ that *estimates - determined by certain independent variables - the potential system withdrawal per unit of time in a given moment, conditional on the fact that the individual has survived up to that instant*. Greater values of the function indicate a greater mortality rate. Defined in such a way, the hazard rate is not a probability, therefore its values can be out of the unit circle, taking any value between 0 and $+\infty$.

The objective of the regression analysis is to establish the relative influence that certain independent variables such as the household type, the economic level and educational climate of the family, the gender, and the adoption of different roles that characterise the transition from adolescence to adulthood, such as job seeking, getting a couple or having children, have on young's hazard of dropping out from the educational system.

The following equation is a simple way of specifying the model allowing to compare the situation using control variables, or evaluating the differences aroused from the presence or absence of a certain characteristic.

$$h(t) = [h_0(t)] e^{(BX)}$$

According to this model, the hazard function may be expressed as the product of a baseline hazard function, which quantifies the hazard of dropping out from the system when none of the factors is present, and an exponentially term, which represents the influence of each variable that is assumed to affect that hazard. These variables are

description can be obtained, due to the use of the whole information from the sample, independently of

introduced into the model as dummies, facilitating the afterwards comparison of the influence of the different factors considered.

Besides, it is possible to transform the model, with the objective of simplifying the interpretation. This one consists in taking the ratio between the hazard function and the baseline function, receiving this ratio the name of relative hazard.

$$h(t)/[h_0(t)] = e^{(BX)}$$

In this way it is possible to estimate the impact that a given factor configuration has on the drop out hazard, with respect to the baseline situation where those factors were not present. So if the hazard factor is to belong to a low economic level, the variable X takes value 1 for that stratum and 0 for the high stratum. The baseline hazard function would be the one corresponding to the high stratum⁷ and the Exp(B) value, which is presented in the regression output, is the term that multiplies the baseline hazard when individuals belonging to the low economic level are considered.

It is also possible to establish a connection between the hazard and the survival functions, through the following equation:

$$S(t/X) = \exp\left\{-\int_0^t h(q/X) dq\right\}$$

b. Adaptations and assumptions imposed by Household Survey (“Encuesta de Hogares”) data.

The data matrix constructed from the Household Survey generates several problems. First, it is not registered the age at which an individual drops out from the educational system, consequently it becomes necessary an estimation of it from the individual’s educational achievement. Assuming there was no repetition, and that the age at the beginning of the cycle was 6 years old, the drop out age is calculated as 6 plus the years an individual attended the educational system, giving variable δ the value of 1 since that moment. In addition, the surveys do not allow a panel study, basically because none of them have this form. Therefore, at the beginning of the analysis period there are important proportions of censored observations, which diminish when the drop out rates

the quantity of periods the individual is subjected to it.

increase. The treatment of censored observations in life tables⁸, leads to a underestimation of the mortality at the beginning of the period, which becomes smaller as time goes by.

The survival function will depend on the validity of the assumptions: that the scholar cycle begins at time – what seems quite probable, at least for the data that are used in Uruguay – and that repetition does not exist, what is more difficult to support, due to the high repetition rates that occurs especially during the first year of primary and secondary school. These would lead to an underestimation of the age in which an individual adopts an adult role, and to the existence of a bias especially in boys of low socioeconomic level, among which the greatest repetition rates and scholar lags are produced. This would lead to a function that underestimates the survival probability during the firsts years, due to the fact that young people are considered at the age they should be at the moment they withdraw studies, which would be lower than the age at which they effectively drop out from the system, in case they had accumulated any year of permanence due to repetition. What it is not possible to establish is the net effect of these events, because they present opposite influences.

c. The regression analysis results and its interpretation.

As it was outlined before the survival function expresses the probability that an individual continue studying depending on his age. As the drop out from the educational system begins before, this information is taken into account for the calculus of such function using the life tables, although the study focus on young people within 12 and 29 years old. From this method it can be proved that the introduction of control factors such as the sex and the socioeconomic level, allow the observation of different behaviours within the sample. The socioeconomic level influence always appears, and in the expected sense. For the same age, young people from the highest socioeconomic level have higher survival probabilities than the ones from the lowest level. The gender influence is also relevant. In general, life tables reveal greater probabilities of dropping out from the educational system within boys.

⁷ When X takes the value 0, the exponential term displays the unit value and $h(t)=h_0(t)$.

⁸ The censored observations are incorporated to the denominator in the probabilities' calculus (multiplied per 0,50) but without affecting the numerator, which is given by registered cases of drop out.

Cox's regression analysis allows a wider comprehension of the problem. The variables that are used and the categories that have been identified as risky are presented in the following description.

<i>Variable</i>	<i>0 "Hazard absence"</i>	<i>1 "Hazard Presence"</i>
<i>Sex</i>	<i>Female</i>	<i>Male</i>
<i>Household type</i>	<i>Unipersonal and Nuclear</i>	<i>Extended and Composed</i>
<i>Household income level (1)</i>	<i>High</i>	<i>Low</i>
<i>Household income level (2)</i>	<i>High</i>	<i>Medium</i>
<i>Household educational climate</i>	<i>High</i>	<i>Low</i>
<i>Employment</i>	<i>Not employed</i>	<i>Employed</i>
<i>Couple situation</i>	<i>Single</i>	<i>Married or out of wedlock, widowed, divorced or separate</i>
<i>Socioeconomic level * educational climate</i>	<i>High socioeconomic level or high educational climate</i>	<i>Low socioeconomic level and low educational climate</i>
<i>Employment * couple situation</i>	<i>No employed or single</i>	<i>Employed and not single</i>

The regression coefficients' magnitude and sign - estimated by maximum likelihood - will permit to establish the influences that the mentioned factors have on the relative hazard (holding everything else constant). So, those B which are statistically significant ($\text{Sig} < 0.05$) and have positive sign, will result in values of the hazard multiplier ($\text{Exp}(BX)$) greater than one. On the contrary, a negative sign will imply a smaller hazard in presence of this factor. Therefore, the greater the magnitude, the greater the multiplication. Considering two risk factors simultaneously will simply imply the product of the multipliers belonging to each one of them. For the interaction terms between two variables, the total effect will have to consider the coefficients of those terms and the ones of the simple variables. In table number 2 the compared situation of the hazard multipliers - the $\text{exp}(BX)$ - is presented for the four countries under analysis.

d. Variables construction

- **Household income level.** This variable classifies the individuals into per capita income quartiles from the household they belong to, not considering the members, nor the domestic services income and their relatives. To analyse the information, this variable is recodified in three levels: Low, corresponding to the lowest per capita income quartile; Medium corresponding to the following two quartiles; High including the households with higher per capita income.

- **Household educational climate.** It is constructed from the average years of study of the household head and his or her couple when it exists. Otherwise only the household head years of study are considered. The households are classified into two levels – low and high educational climate – depending on whether they are under or over the median. Finally, the individuals are classified into these levels according to the educational climate they belong to.
- **Type of household.** This variable denotes the type of household the individuals belong to. Households are classified into two categories depending on whether they belong to Extended Households, which include the households where at least one of its members (excluding domestic service and their relatives) is related to the household chief as another relative or not relative corresponding to the Extended and Composed categories in the classic terminology. The others households – Unipersonals and Nuclears in this classic terminology – are included in the Rest category.
- **Drop out from the educational system.** Is the first of three variables considered to characterise the transition from adolescent to adult roles. It classifies the individuals into those that have dropped out from the educational formal system and those who have not.
- **Employment.** The second variable of the ones mentioned above, classifies the individuals in two categories, according to whether they are employed or not.
- **Couple situation.** Is the last variable used to illustrate the adoption of adult roles. It classifies the individuals according to their marital status into two categories: one that includes only the single ones, and the other accounts for couple formation, which includes married and out of wedlock couples, and widowed and divorced individuals.
- **Age at moment of dropping out from the educational system.** This variable is used as a temporal variable in the application of life tables and Cox's regressions. It is constructed based on the individual's maximum educational achievement in the formal system., on his permanence or not in the educational system at the moment of being surveyed, on his age and on two assumptions: that the educational

achievement referred has been achieved without repetition, and that the scholar cycle has been started at six years old. Therefore, for those that have withdrawn the educational system, the withdrawal age was estimated adding six years (the assumed initial age) plus the maximum educational achievement – measured in education years from the variables incorporated in the base -. When the individual is still in the system, this variable value is his biologic age.

- Besides, other variables have been used such as sex and age, while for the new variables it has been applied to the variables already created in the data base, or to calculus done by the researches.

e. Cox's Regression Analysis

Synthetically, the most relevant findings in Table 9 are:

- Gender is significant in all cases even though, alone, its effects are relatively modest in comparison with other variables. In Uruguay and Venezuela men have on average 20% more risk than women, while in Honduras the effect is negligible. The case of Chile is interesting, since it indicates a higher risk for women than men. Men have on average 15% less risk than women.

Table 9
Multiplier risk factor of drop-out by Country

Variable	Chile	Honduras	Uruguay	Venezuela
Sex	0,8680	1,0193	1,2034	1,2081
Household type	0,9599	0,8115	-.-	0,9304
Household income(1)	3,0583	1,4614	2,6191	1,6473
Household income(2)	1,7519	1,1389	1,5924	1,4754
Household educational climate	2,0134	2,2509	1,9441	2,0108
Employment	2,0743	1,7819	1,6272	1,8351
Marriage	2,0685	2,2027	1,9823	2,2200

(1) Compares the difference between high and low income.

(2) Compares the difference between high and medium income.

Source: Based on special tabulations from Household Surveys, IADB, 1999.

- Contrary to our coding criteria, extended households operate mainly as a protection from drop-out as the coefficients below “1” indicate. Even though the

effects are again modest, three or more generations and large households seem to provide multiple caretakers that allow people to share household tasks and build compatibility between private demands and education attendance. Furthermore were extended households typically correspond to large households as in Honduras (given its demographic structure and factor analyses we **do** know this) the effect is larger (almost 20% less risk for those belonging to these households). In contrast were extended households are more “modern” and entail a lesser increase in size and multiple generations, the effect is neutral as in the case of Uruguay and almost nil in the case of Chile.

- Low income and low household educational climate increase the risk of dropping out significantly and with stronger coefficients than in our previous variables. The extreme comparison of lowest to highest income shows that the risk of school drop-out increases in all cases. It triples in Chile and more than doubles in Uruguay. It is nevertheless counterintuitive the fact that these coefficients are clearly lower for Honduras and Venezuela even though they are still of important magnitude (they increase in approximately 50%). We do not have a convincing interpretation for this beyond the possible fact that as we move to these countries and even more continuous income scale would be necessary to capture differential risk, since at the highest level (our baseline function) the risk is still too high and thus the increase in risk is less as we move to lower income categories (consider, for example that in the case of Honduras we are talking about broadly 30% of the population at our highest income category in a country that according to some measures has 75% of poor people – yet, this is clearly less plausible in the case of Venezuela). The comparison between medium and high levels of income offers coefficients that are consistent with the extreme comparison: medium income youth have a higher risk than higher income ones, but less than low income people. Finally, in this point, low educational household climate confirms studies made before: they are a strong risk factor for educational attainment in youth, doubling, roughly, in all cases the chance for drop-out.

- Regarding our two emancipation variables and consistent with factor analyses the coefficients are in most cases as important or more important than individual and household background variables. Work has a similar influence in our countries, doubling the risk in Chile and almost doubling it in Venezuela and Honduras (1.8 and 1.7 respectively). Again, the case of Uruguay, confirms the notion of a more compatible realm for work and education (1.5 times the risk of its baseline function).
- Forming a new family or marrying increases the coefficients even more than employment. Yet, given the fact that the adoption of marital status occurs quite late in all countries as compared to the other adult roles a straightforward interpretation of marriage as a hazardous factor regarding educational attainment is unwarranted. Strictly speaking these coefficients tell two analytically distinct stories that cannot be differentiated with the technique at hand. In some cases it is indeed correct to assume that marriage has operated as a deterrent of educational investment given the increasing load of household responsibilities and the need to enter the labor market. Yet in other cases, the coefficients, are simply telling us that as people grow up they leave the educational system and they also get married (given the Cox regression we know that marriage happened before, but imputing to marriage/school drop-out a causal link is harder as we reach ages of tertiary studies completion) . This is radically different than leaving the system **because** one has gotten married. Particularly at the higher income levels and at older ages, the second situation, is more likely than the first. While this problem of causation is essentially true for all of our dimensions in the emancipation process, both the causal link and the time closeness allow for a less problematic interpretation of work as risk for educational attainment. Still, and granting this problem, the coefficients are significant and of magnitude, making people roughly two times as likely to leave the educational system in all our countries.

The coefficients presented above hide important differences in how these variables affect chances of dropping out for men and women. Once we repeat the analysis for men and women in each country telling differences can be found.

Table 10
Multiplier risk factors of drop-out by Country and gender

Variable	Chile		Honduras	
	Men	Women	Men	Women
Household type	0,9595	0,9920	0,9021	0,7276
Household income (1)	2,9488	3,1796	1,3975	1,4404
Household income (2)	1,6829	1,7797	1,1638	1,1138
Household educational climate	1,9854	1,9080	2,0209	2,3306
Employment	4,4213	1,5499	3,8526	1,1614
Marriage	1,2623	2,7041	1,3605	3,0649

Variable	Uruguay		Venezuela	
	Men	Women	Men	Women
Household type	1,0279	0,9734	0,9720	0,9051
Household income (1)	2,5292	2,8389	1,6850	1,6814
Household income (2)	1,6039	1,6238	1,4822	1,4719
Household educational climate	1,8670	1,9890	1,9964	1,9430
Employment	2,1540	1,3714	3,1107	1,2813
Marriage	1,4467	2,5316	1,3921	3,1859

Source: Based on special tabulations from Household Surveys, IADB, 1999.

Three major general and very synthetic findings are worth mentioning:

- While, working increases the risk of dropping out for men far more than for women, marriage increases risk in exactly the opposite way. Women who get married are far more likely to leave the educational system than men. This suggest that a gendered approach to school attainment and emancipation paths will bear its fruits, since we are in the presence of what could be termed Dual Emancipation Patterns. While for women predominantly private adult roles affect their educational investment, for men public ones do so. It is interesting to note that a country comparison of these Dual Emancipatory patterns is consistent with our previous findings and interpretations. As factor analysis showed, Uruguay was the only case in which factors for men and women were formed by roughly the same variables. As can be seen in the table above, this is also the country in which the hazard differentials for

gender regarding marriage and work are the lowest. This implies again a more homogeneous behavior among genders than in the other countries.

- The result for household type reinforces the findings from table 7. If it was true that extended households operated as a protection against drop out because of the availability of multiple caretakers and shared responsibilities, then we should expect its impact to be higher precisely for women. They are the ones that traditionally assume that role and since they would have more family members to cooperate in that function, risk should diminish for them more than for men, for whom household type should edge towards neutrality. Despite modest results, they are significant and consistent with this interpretation. Especially in Venezuela and Honduras were this type of households are more present and larger, the effect clearly favors women, while only slightly men. In Chile the results contradict this hypothesis the effects are quite modest. In Uruguay the apparent neutral effect that household type had become visible with gender, though, also to very modest degrees (in men it becomes a risk factor, while in women a mild protection factor).
- Socioeconomic status presents mild differences in the effect they have on men and women. This finding is nevertheless extremely important. As we show in the next hazard analysis, this is not because income and gender do not interact and contribute to explain educational attainment. But they do so mediated by two central emancipation variables we have introduced as independent variables: marriage and work. Educational climate also presents small differences among men and women, even though Honduras shows a 30% difference in favor of men. We can expect low educational climate to be associated with more traditional gender roles. Where this climate is extremely low, study for women might seem irrelevant, leading to lower demand and larger risks of drop-out.

Table 11a

Multiplier risk factors of drop-out by gender and income, Chile

Variable	Low		Middle		High	
	Men	Women	Men	Women	Men	Women
Household type	0,9049	0,9923	0,9857	0,9548	1,0360	1,1918
Household educational climate	2,1524	2,2181	1,8573	1,8878	2,0977	1,6876
Employment	2,9917	1,6952	4,4678	1,3760	7,2586	1,9491
Constitución de Pareja	1,6368	3,6943	1,1476	2,7075	1,2052	1,8411

Source: Based on special tabulations from Household Surveys, IADB, 1999.

Tabla 11b

Multiplier risk factors of drop-out by gender and income, Honduras

Variable	Low		Middle		High	
	Men	Women	Men	Women	Men	Women
Household type	0,9082	0,8055	0,9144	0,6618	0,8750	0,7837
Household educational climate	1,6887	2,1244	2,0141	2,4014	2,2981	2,5239
Employment	3,8897	1,2213	3,7568	1,0917	4,0794	1,2399
Married	1,4657	3,2069	1,2886	3,2153	1,4444	2,5632

Source: Based on special tabulations from Household Surveys, IADB, 1999.

Tabla 11c

Multiplier risk factors of drop-out by gender and income, Uruguay

Variable	Low		Middle		High	
	Men	Women	Men	Women	Men	Women
Household type	1,0754	,9711	1,0173	1,0173	.-	.-
Household educational climate	1,7919	1,9482	1,7866	1,9350	2,1919	2,4346
Employment	1,7930	1,1446	2,4908	1,5256	3,6238	2,2161
Married	1,4258	2,6643	1,4253	2,4275	1,6036	1,9688

Source: Based on special tabulations from Household Surveys, IADB, 1999.

Tabla 11d

Multiplier risk factors of drop-out by gender and income, Venezuela

Variable	Low		Middle		High	
	Men	Women	Men	Women	Men	Women
Household type	,9168	,9790	,9970	,8618	,9872	1,0137
Household educational climate	2,2812	2,4157	1,8970	1,8791	2,0118	1,5971
Employment	2,4002	1,1207	3,3643	1,2959	3,6815	1,4597
Married	1,6403	3,9296	1,3278	3,1847	1,3642	2,4229

Source: Based on special tabulations from Household Surveys, IADB, 1999.

Again some basic findings should be sketched;

- As we move up in terms of income the hazard effect of marriage on educational attainment decreases for all our cases. It does so dramatically for Chile (from more than three and a half times the baseline rate to slightly less than two) with Venezuela and Honduras in between, and Uruguay last (from 2.5 to 1.9).
- As we move up in the income ladder work increases the likelihood of school abandonment for men in almost all our cases. Here the caveat in interpreting this results mentioned above should be kept in mind. In Chile the risk for upper income men who start working is 7 times higher than for those who do not work. Given the average ages at which upper income males leave the educational system, we are looking in this coefficients at combined effects of actual hazard and completion rates in university that are accomplished while working.

5. In Closing

Emancipation patterns matter and not just for educational attainment. They do because they define future chances as well as immediate additional choices. Factor analysis and hazard rates have shown that studies that neglect the patterns and sequences of adult role adoption, do so at their own peril. This is not meant to question the robust correlations that a myriad of studies have shown regarding the effects of income, educational climate, and household characteristics on youth educational investment. Those relations hold, but unless we open the “black box” that connects structural aspects with education outcomes it will be hard to properly guide policy action. This link resides essentially on mechanisms of youth choices and behavior as they prepare and move into adult life. Here we have only been able to consider three dimensions of such a path: marriage, work and educational attendance itself. The exercise and the bet, we believe, has paid off.

First we have been able to show how countries differ as to when youth move into adult roles. This is quite clearly linked to demographic stages which are also closely associated with development levels and educational supply. Furthermore, these countries present different distributions of drop-out, labor market incorporation and

marriage ages for different classes and genders. This can be seen both in our factor analysis and in our Cox regressions results. A more graphic description of this same issue can be seen in the appendix on the Cox function by class and gender.

Secondly we have also advanced in our understanding of how class and gender interact to affect emancipation patterns (factor analysis constitutes a first approach), and how this interaction changes from country to country. From this exercise the idea of Dual Emancipation Pattern clearly emerges as a useful concept to understand the how public and private adult roles affect the educational investment of men and women. Our regressions also show the mellowing of this two distinct emancipation pattern once we move up in terms of income within countries and development among countries.

Thirdly we have learned that demographics matter as well, affect the weight of extended household which in turn affect hazard rates for educational attainment. Countries at the start of their demographic transition confront huge obstacles if they want to increase their educational performance. Maybe their only advantage rests on extended households and the protective function they provide. As these countries move into the next demographic stages they will most likely loose that form of protection. Chile shows that such a fact does not imply decreasing educational attendance, especially for lower income sectors. Besides market signs and legacies of traditional societies, we are still in the dark as to how Chile accomplished that. Uruguay represents the opposite scenario, were lower income sectors with very “modern” roles and family structures, have left a vacuum of basic integrative and protective mechanisms, which today become evident in very weak educational demand at the lower income groups.

Finally, we know that given the strong links between structural factors, emancipation patterns and educational attainment, policies geared only at improving the supply side of the equation, will do little to improve young educational investment. Policies oriented towards the reproductive patterns of young poor women, labor market regulation on youth labor and education attendance, curricula at the high school level that allows for labor market entry and patience, seem to be broadly the guiding principles for policy prescriptions that will necessarily have to wait until the final version of this research paper.

Bibliography

Clausen J.A., "Early Adult Choices and the Life Course", (Paper) Annual Meeting, American Sociological Association, 1986.

Duryea S. and Székely M., "Labor Markets in Latin America: A Supply-Side Story", IADB, 1998.

ECLAC, **Social Panorama of Latin America**, 1997/1998.

Filgueira C. H., **Emancipación Juvenil: Trayectorias y Destinos**, ECLAC, LC/MVD/R.154. Rev. 2, Montevideo, 1998.

Filgueira C. H., "Vulnerabilidad, activos y recursos de los hogares: una exploración de indicadores," in Kaztman R., **Activos y estructura de oportunidades: estudios sobre las raíces de la vulnerabilidad social en Uruguay**, CEPAL, Montevideo. LC/MDD/ R. 180, May 1999.

Filmer D. and Pritchett L., "The effect of Households Wealth and Educational Attainment Around the World: Demographic and Health Survey Evidences", WB.

Londoño J.L. and Székely M., **Sorpresas distributivas después de una década de Reformas**, IADB, 1997.

Londoño J.L. **Poverty, Inequality and Human Capital Development in Latin America**, IADB, 1996.

Magno de Carvalho J. A., "The Demographics of Poverty and Welfare in Latin America: Challenges and Opportunities, in Tokman V. and O'Donnell G., **Poverty and Inequality in Latin America: Issues and Challenges**, University of Notre Dame Press, 1998.

PNUD, **Development Report**, PNUD, Oxford/New York, University Press, 1999.

White Riley M., Foner A. and Waring J., "Sociology of Age", in Smelser N. (Ed) **Handbook on Sociology**, Sage Pub. 1988.

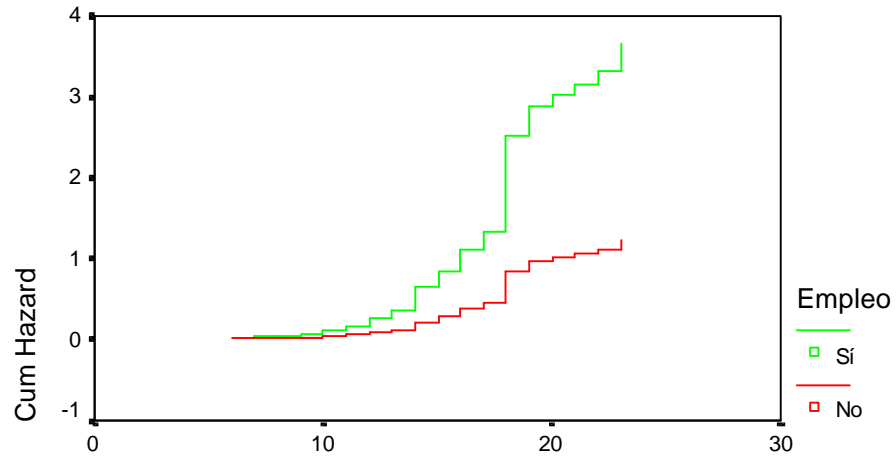
APPENDIX

Selected Cox Hazard Functions Graphs of drop-out for Countries by Gender and Economic Level (low and middle). Independent Variables: Employment and Marriage.

CHILE

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 1

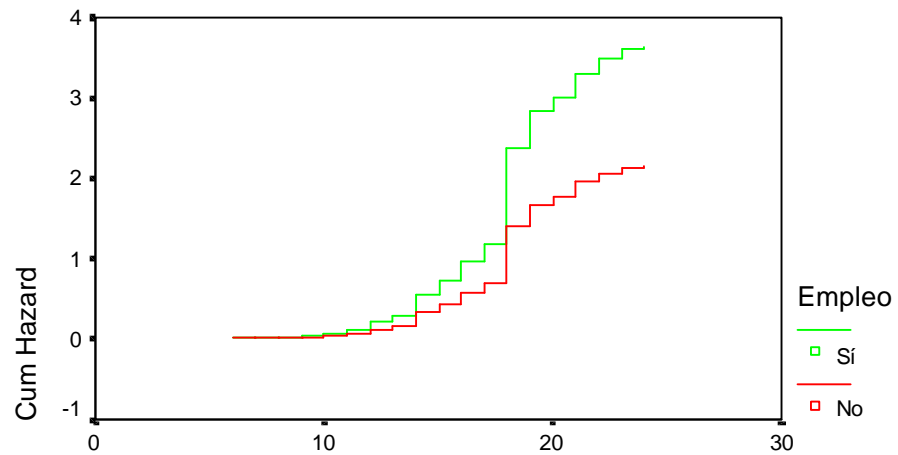


Edad al abandonar los estudios

Cases w eighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 2

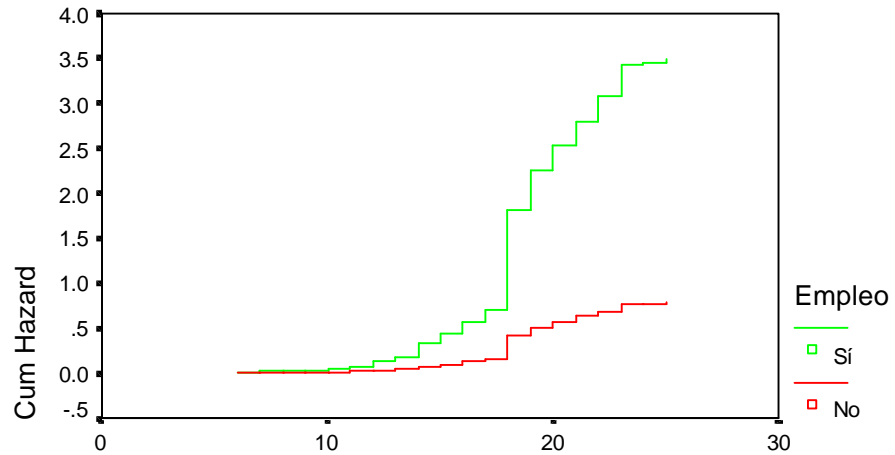


Edad al abandonar los estudios

Cases w eighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 1

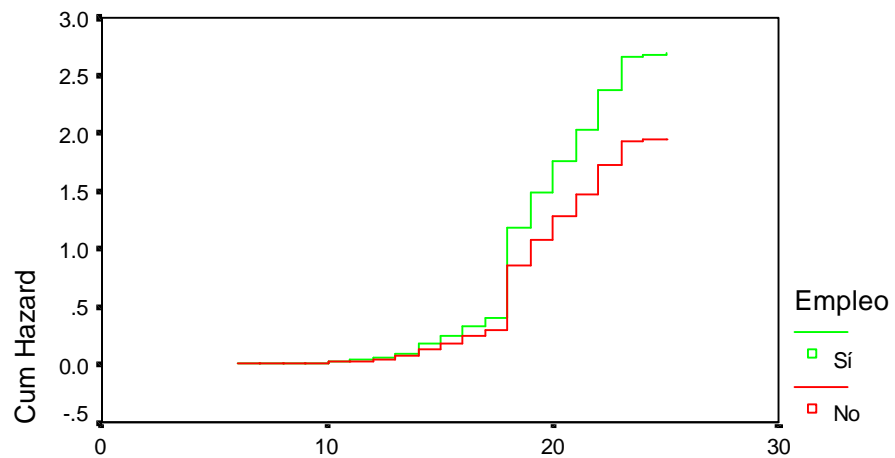


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 2

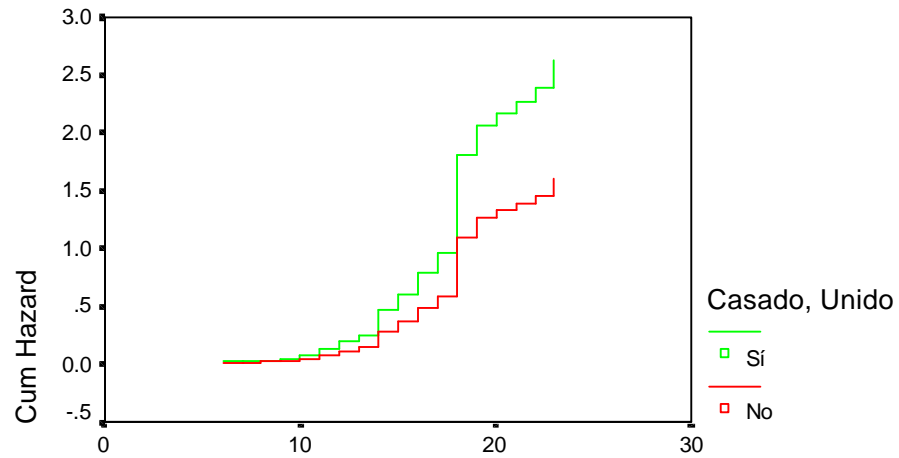


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 1

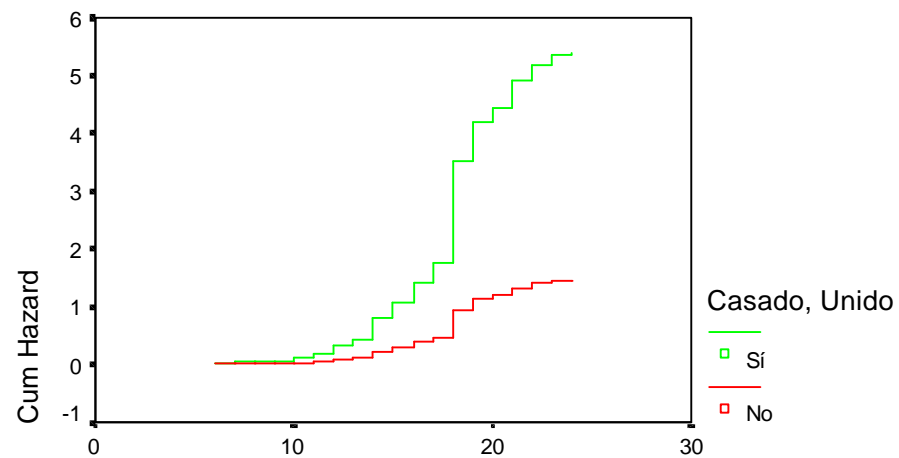


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 2

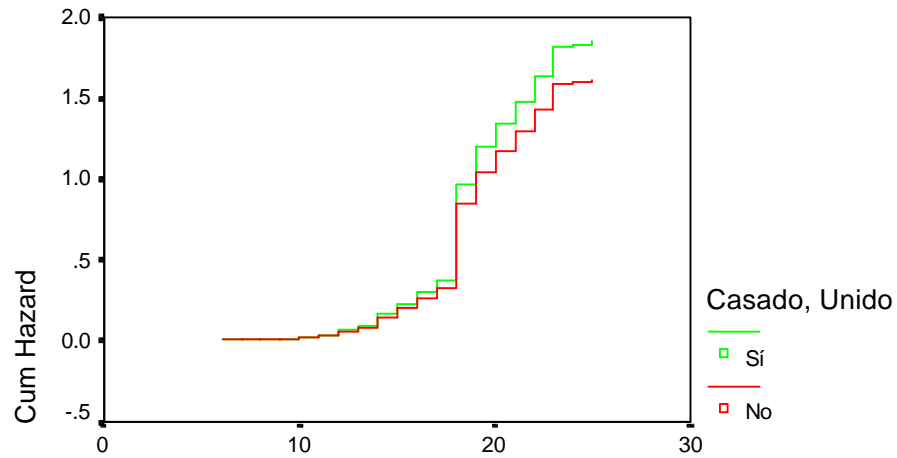


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 1

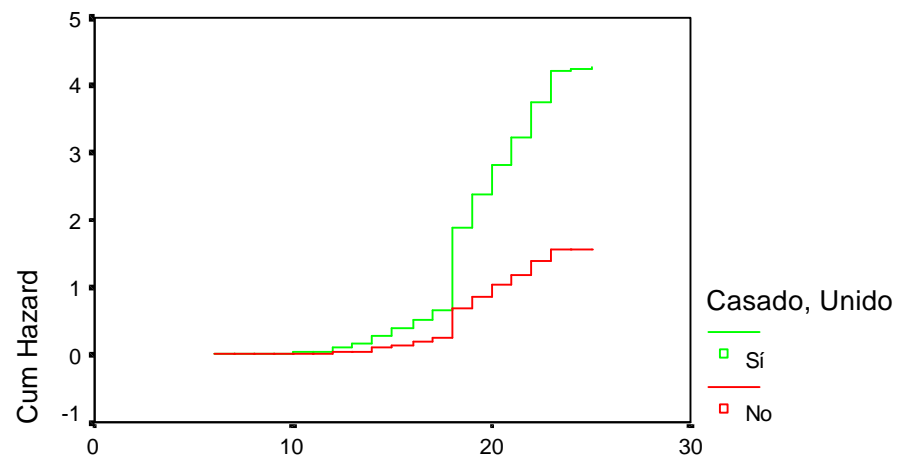


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 2



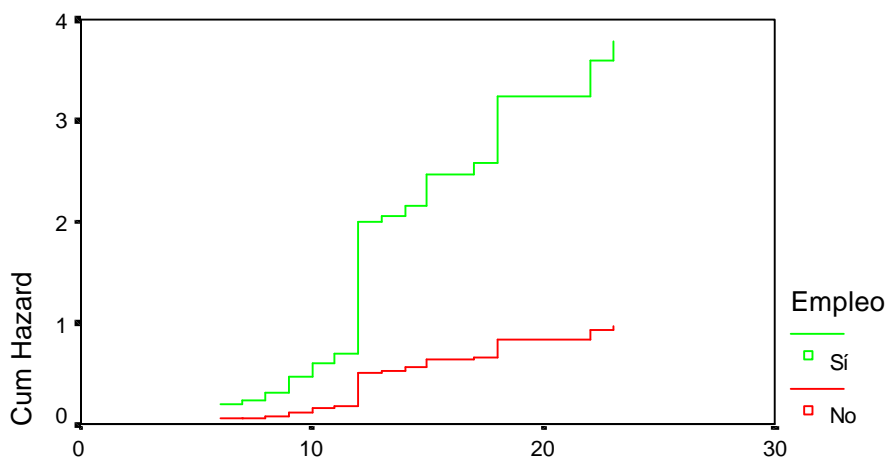
Edad al abandonar los estudios

Cases weighted by FACTORP

HONDURAS

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 1

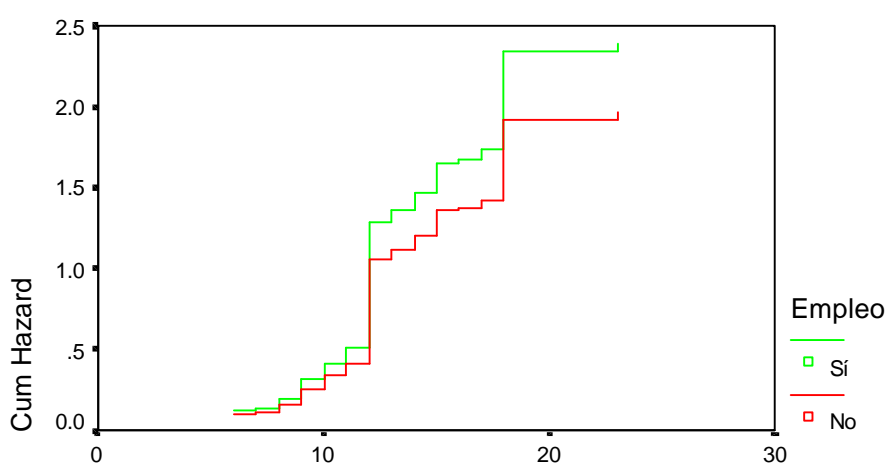


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 2

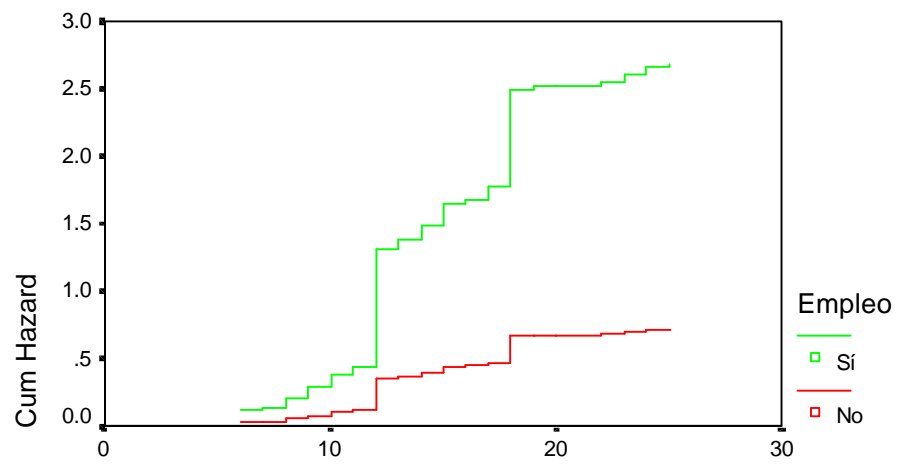


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 1

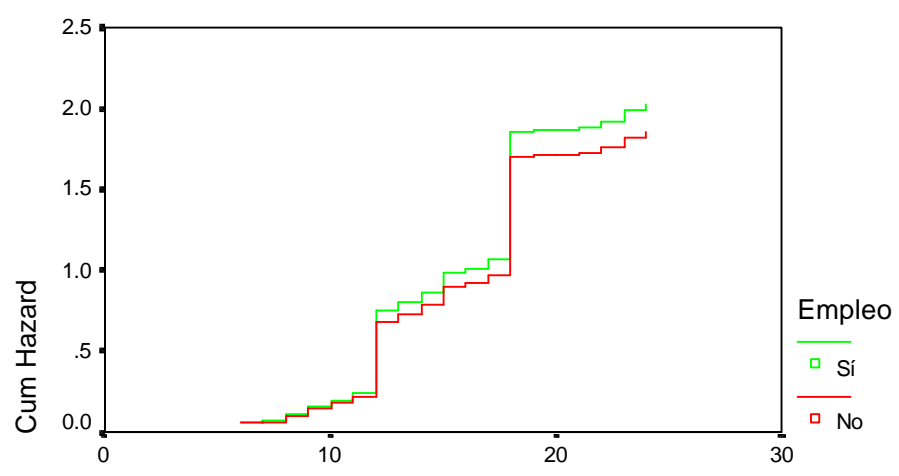


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 2

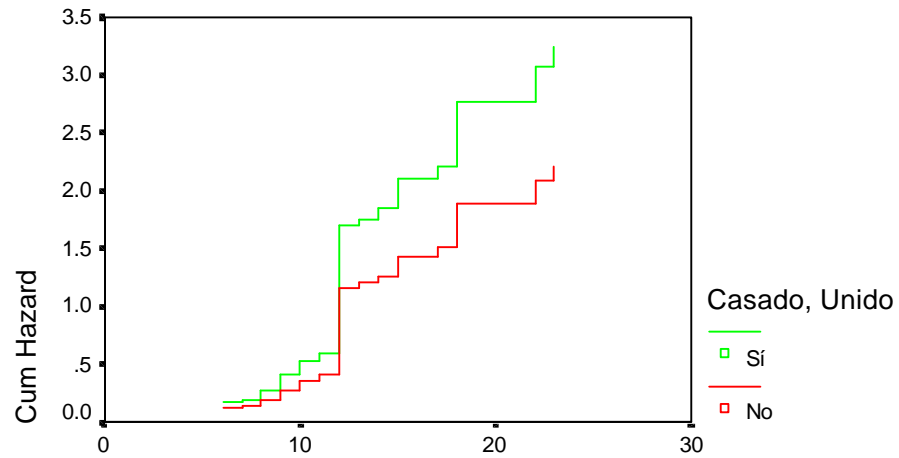


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 1

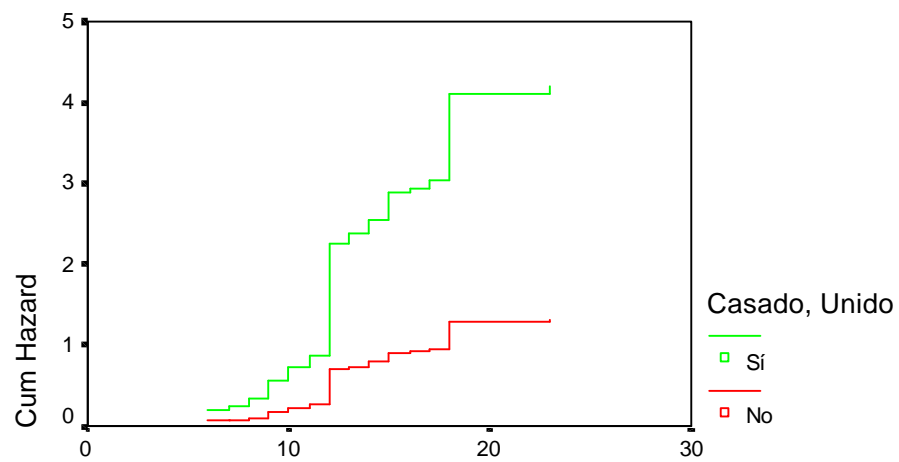


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 2

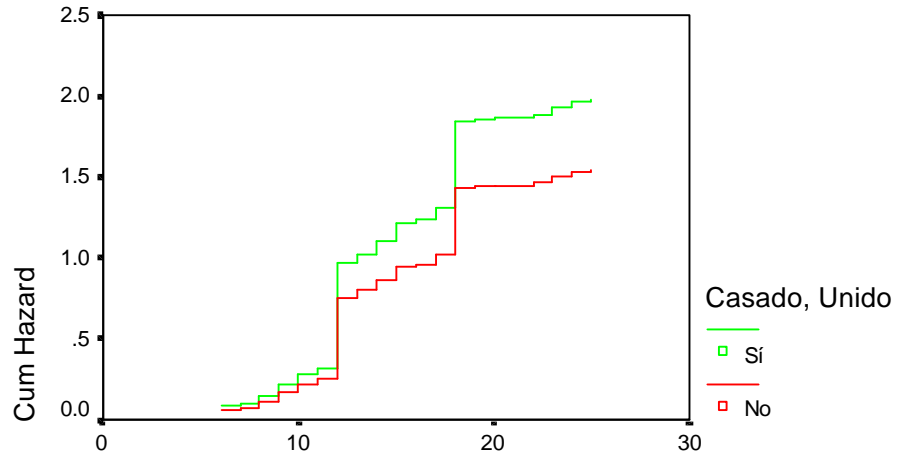


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 1

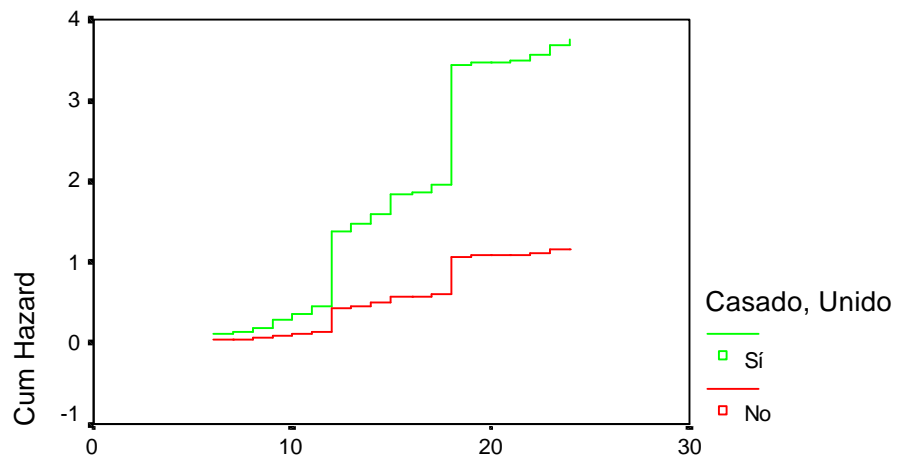


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 2



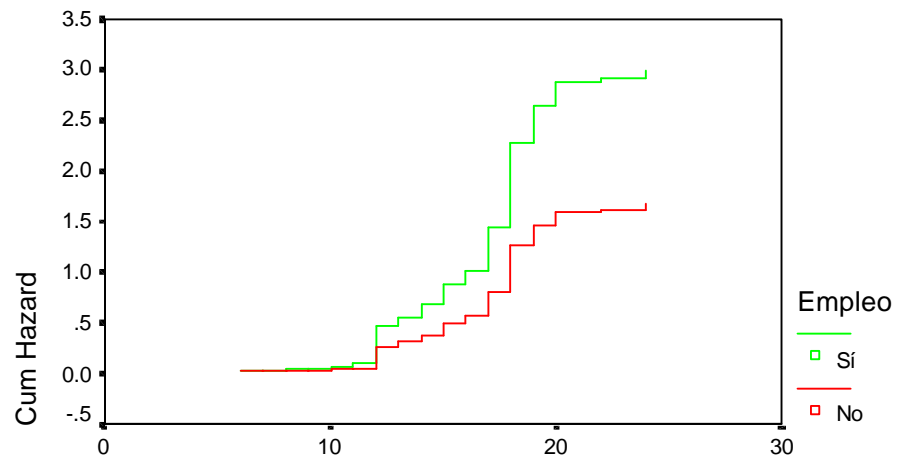
Edad al abandonar los estudios

Cases weighted by FACTORP

URUGUAY

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 1

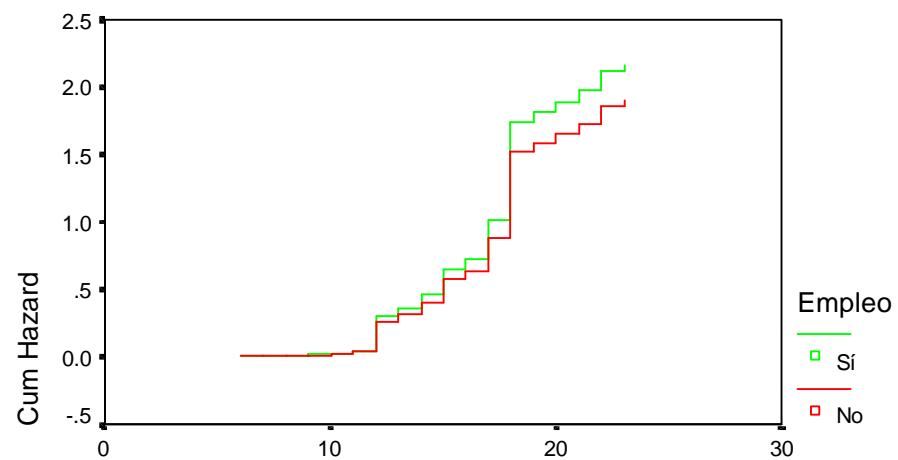


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 2

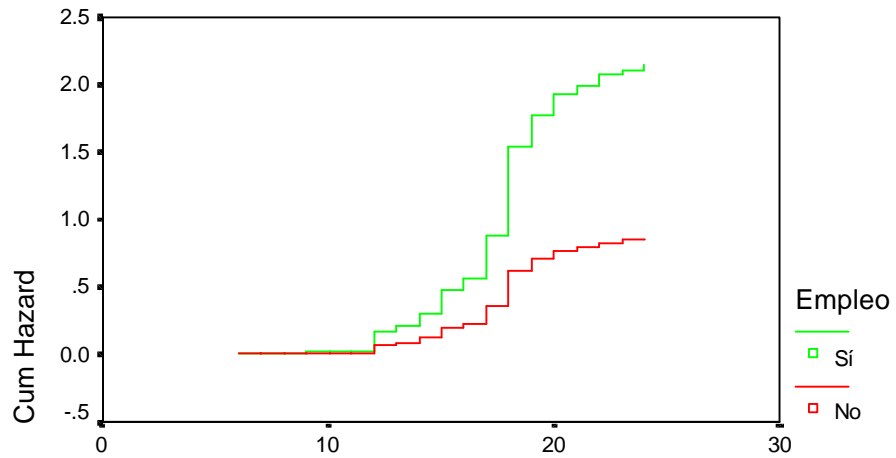


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 1

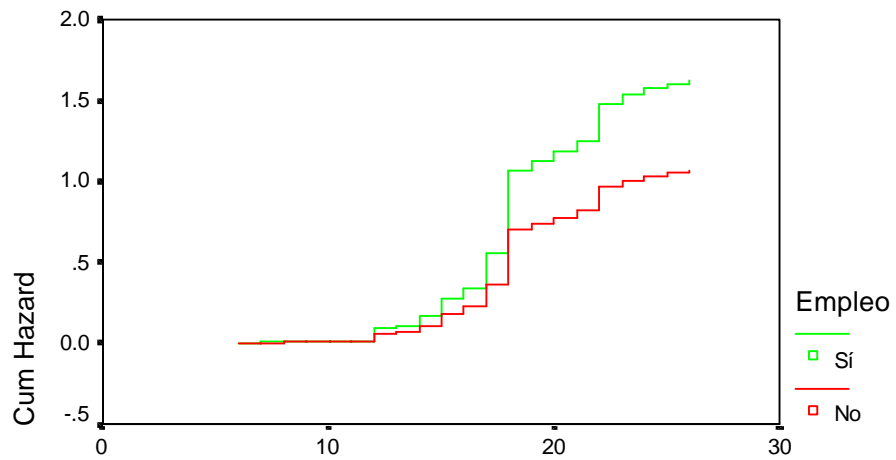


Edad al abandonar los estudios

Cases w eighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 2

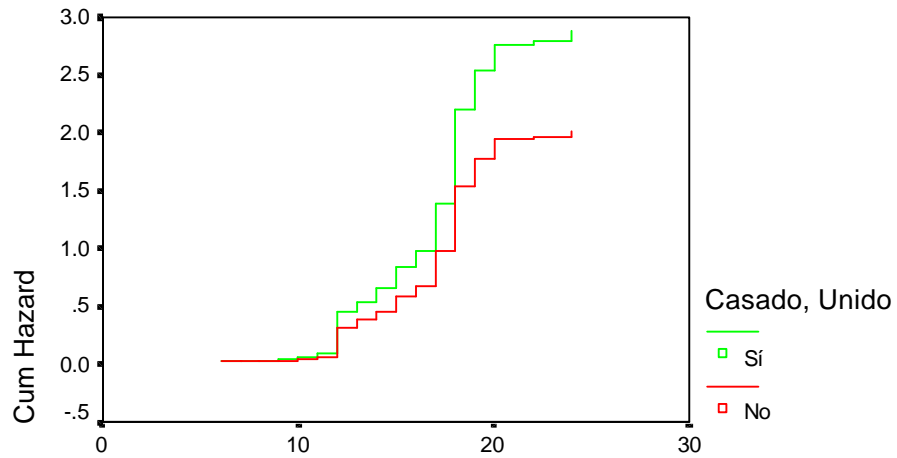


Edad al abandonar los estudios

Cases w eighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 1

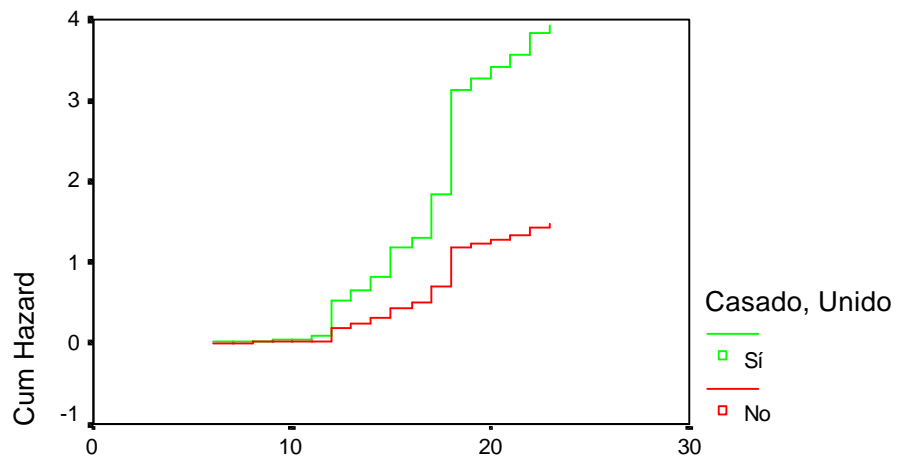


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 2

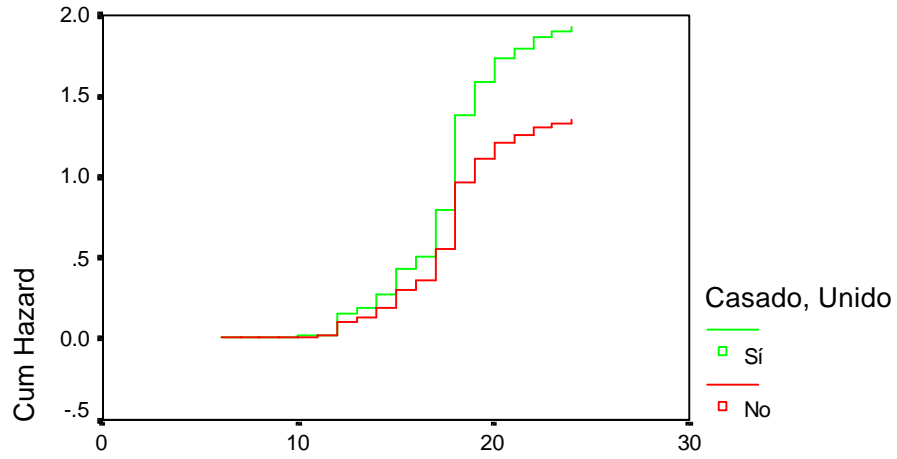


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 1

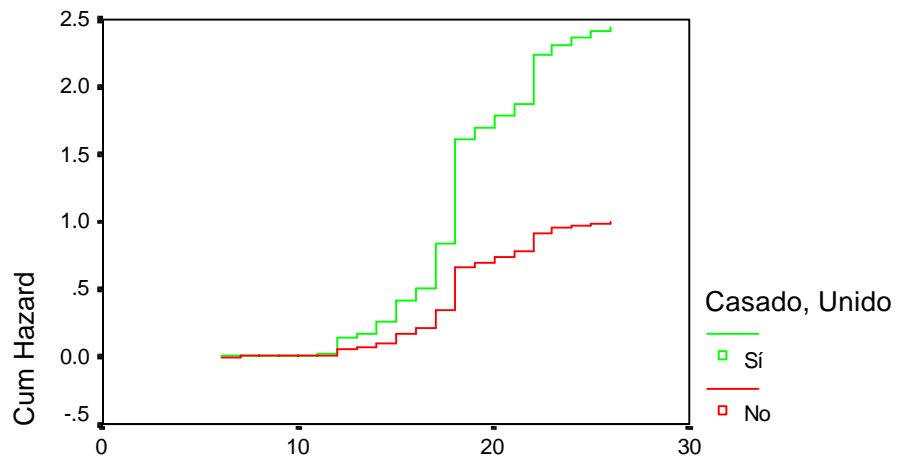


Edad al abandonar los estudios

Cases w eighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 2



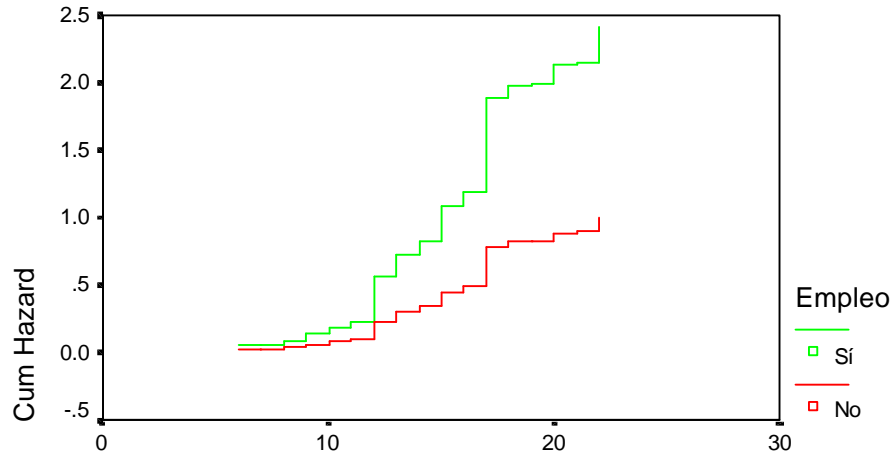
Edad al abandonar los estudios

Cases w eighted by FACTORP

VENEZUELA

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 1

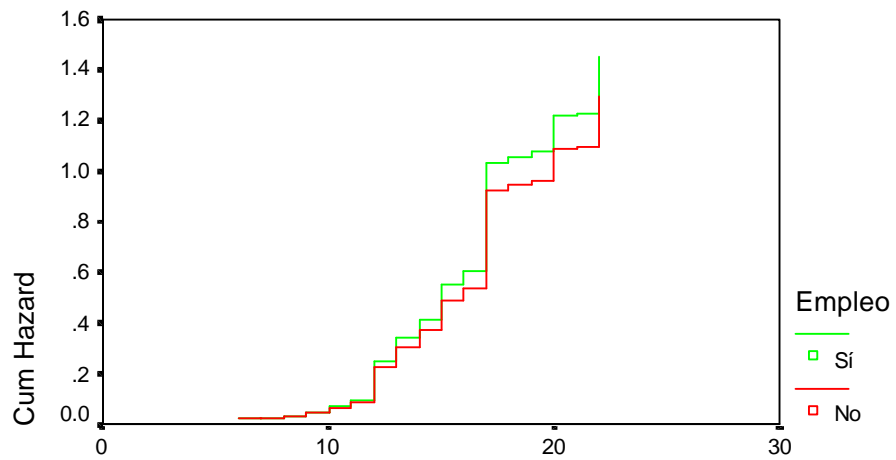


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 2

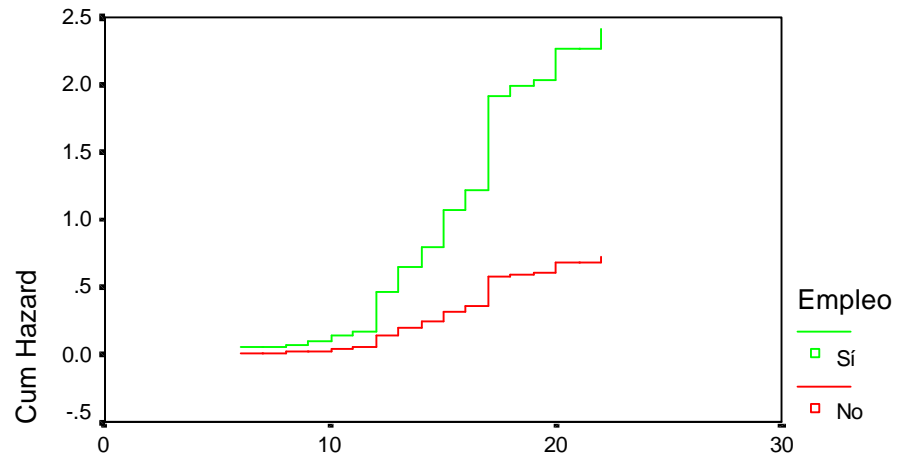


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 1

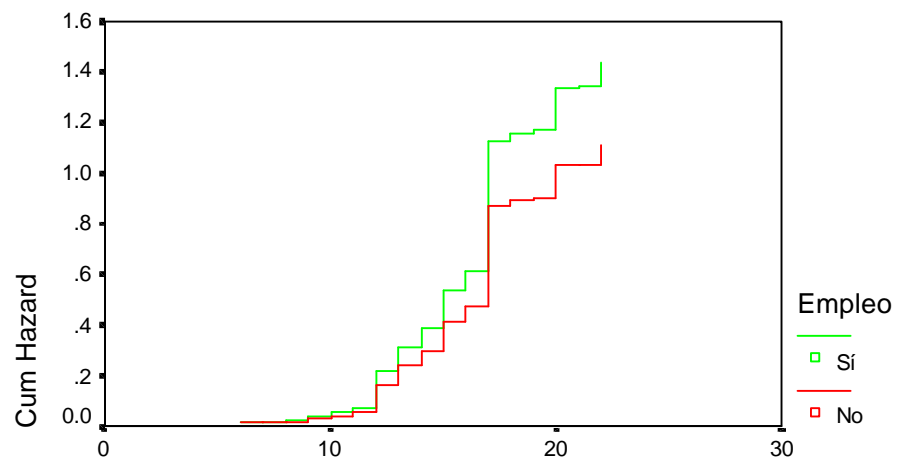


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 2

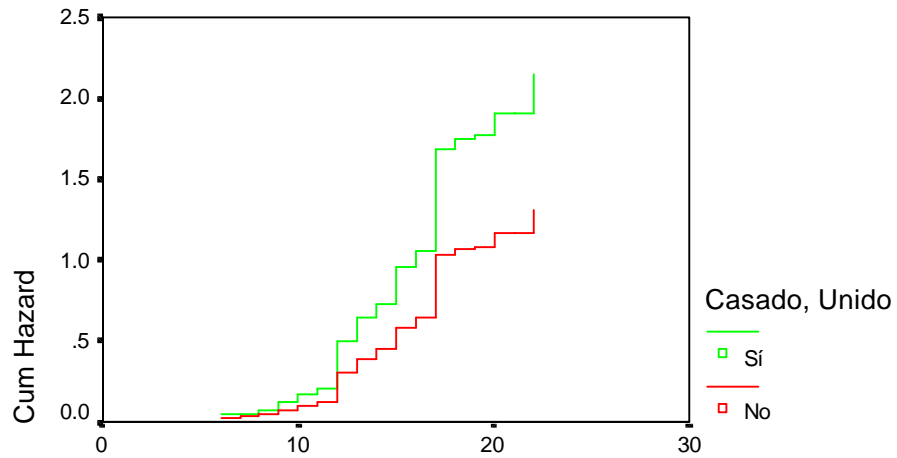


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 1

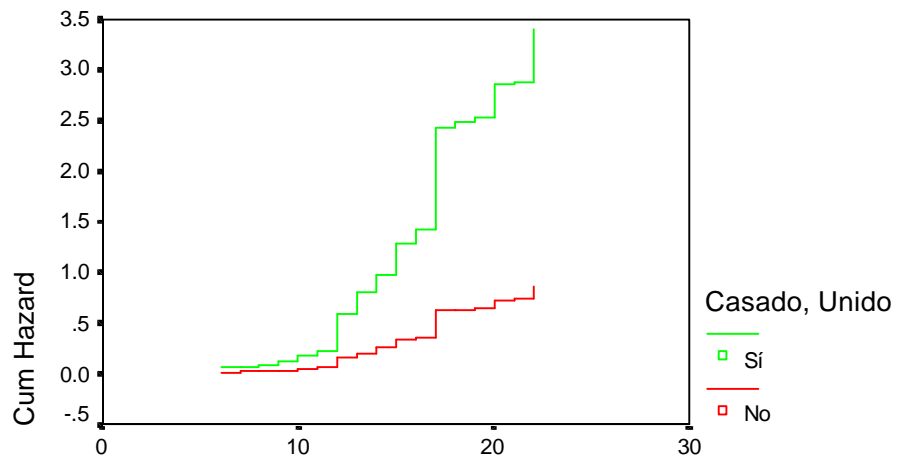


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 1,00 SEXO: 2

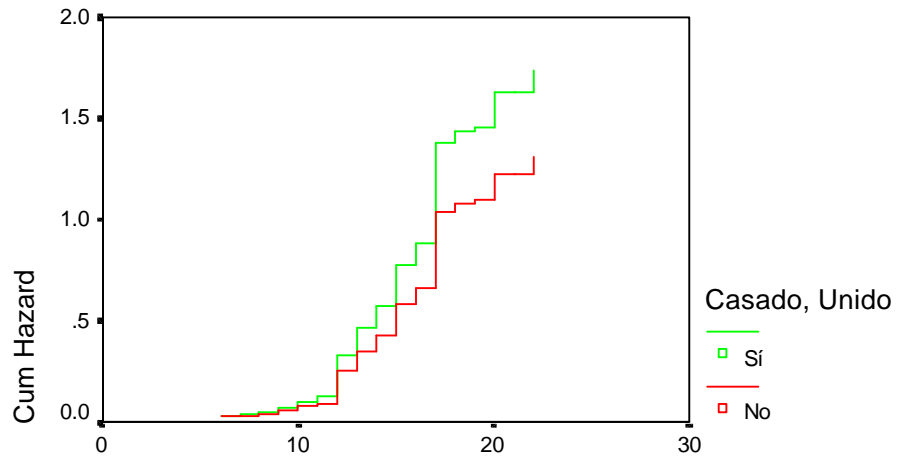


Edad al abandonar los estudios

Cases weighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 1

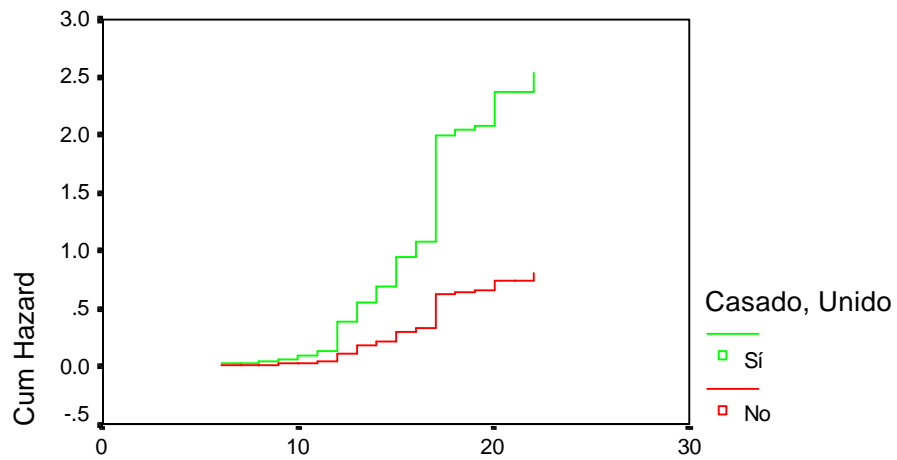


Edad al abandonar los estudios

Cases w eighted by FACTORP

Hazard Function for patterns 1 - 2

NIVEC1: 2,00 SEXO: 2



Edad al abandonar los estudios

Cases w eighted by FACTORP

