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Reproductive Heterogeneity in Uruguay: from the First to the Second Demographic Transition

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1. Introduction

A salient feature of reproductive behaviour in Uruguay has been an early control and thus reduction of fertility levels. While most Latin American countries began to experience the characteristic transformations of the first demographic transition by 1960, Uruguay started this process by the end of the nineteenth century and the beginning of the twentieth. By 1960, the total fertility rate (TFR) reached 3 children per woman.

Since the sixties fertility decline entered in a slow-paced reduction phase, or even stagnation, of almost forty years. Given the country's demographic history, it would have been possible to assume that fertility would reach figures below the replacement level well before the beginning the twenty-first century. Especially if we take into consideration the path followed by several Western European countries -whose trends were similar to those prevailing in Uruguay-, which showed as early as the 1970's fertility levels that were, in average, barely sufficient to replace their population (Varela, C., 2007).

The factors that explain the slowdown in fertility decline during the second half of the twentieth century are mainly related to the gaps in reproductive behavior among women from different geographical areas, educational and socioeconomic levels, regarding both intensity and timing, (Chackiel and Schkolnik, 2004; Niedworok, 1994; Paredes and Varela, 2005, Zavala de Cosío, 1999).

The successive economic crises that the country went through, which resulted in an important increase in poverty, affecting 31 percent of the total population in 2002¹, contributed to the "impoverishment of reproduction". Women from the lower social sectors have fertility levels well above average, which makes the low fertility levels experienced by women in medium and high strata less visible.

Social gaps have led to significant differences in final offspring, which has ranged from 5 to less than 2 children per woman in average, according to the historical period, the region, educational level and socio-economic status of women. This has led to the

¹ According to the 2002 poverty threshold estimated by the National Statistics Institute (in Spanish: INE), PNUD 2005.

coexistence of several demographic models, some typical of the first and others of the second demographic transition (SDT).

The term “second demographic transition” was first proposed by Van de Kaa, in 1986, and Lesthaeghe, in 1995. It refers to transformations in fertility levels, in the formation, duration and dissolution of unions, as well as the increase of cohabiting unions without legal recognition. The changes in family formation are a key feature of the SDT: the age at marriage is delayed, marriages are less stable and lasting, divorces increase in a substantial manner and cohabitation becomes widespread. Other characteristic features are the diffusion of effective contraceptive means, the increase in adolescent fertility (in the early stages of the SDT process) and the reduction of fertility among women of all ages, with the reduction of total fertility below the replacement level as a consequence (Van de Kaa, 2002).

Even though Uruguay started its second demographic transition earlier than most Latin American countries – as well as its first demographic transition-, the development of the process has been uneven in regards to its characteristic features (Cabella et al., 2004).

Since the decade of 1980, several indicators have reached the expected levels in a process of SDT. The percentage of legal marriages has decreased, the divorces, mean age at marriage and cohabiting unions have all increased, as well as adolescent fertility. However, the total fertility rate remained high for a SDT process. It is not until 2000 that fertility restarts a downward trend, reaching by 2004 a below population replacement level (with a total fertility rate of 2,08). Since 1998, adolescent fertility also started to drop significantly, thus having an impact on the reduction of the total fertility rate.

This evolution of indicators is foreseeable in a second demographic transition context, and therefore would confirm the incorporation of Uruguay to such process. Nevertheless, this process is not homogenous among social classes. Hence, different reproductive models persist in the Uruguayan society.

This paper aims to contribute to the study of fertility change in Uruguay, for the period from 1996-2006, taking into account the existence of differential reproductive patterns, which vary according to socio-economic status of women. In particular, it seeks to identify the actors who play a leading role in the recent decline of fertility below the replacement level. Therefore, in the first part, we analyze recent transformations in terms of age cohorts, regions, educational level, socio-economic and marital status. Secondly, we also discuss some of these differentials in relation to women’s age at motherhood. Finally, we examine the persistence of different reproductive models, and their links to different stages of the first and second demographic transition.

Data sources used are the 2006 National Household Survey (ENHS) (INE), as well as the Population and Households Censuses (INE, 1975, 1985, 1996) for comparison purposes. We use the cumulative parity indicator^{2,3} for our analyses, which refer exclusively to women aged 15-49.

² The cumulative parity indicator shows the average number of children accumulated up to a certain age, among women of each birth cohort. We analyze women in fecund ages (15-49), and we aggregate them by five-year age groups, which allows us to analyze the parity of women from 35 birth cohorts in 7 age groups. The cumulative parity of women aged 45 to 49 indicates their final parity or final descent, in other words, the real reproductive experience of women from those birth cohorts by the end of their fecund period.

2. Recent transformations in fertility

The year 2004 established a milestone in the country's demographic trends since, for the first time in history, fertility levels were below the minimum level needed for population replacement. Since 1998, the children per women average restarted a gradual decline, and the total fertility rate reached 2,08 in 2004. This process continued during the following two years, as the TFR reached 2,03 in 2006.

Declining fertility and the reduction in the number of births, as noted above, constitutes a historical trend in Uruguay. However, the latter adjustment generates concern in political and social arenas, due to the fact that the permanence of these levels in the medium-term, coupled with the emigration trends⁴, seriously questions the future of the country as it presents the threat of population decline. In a previous report, we formulated the hypothesis that the resumption of falling levels of births and fertility was partly due to changes in the behavior of subpopulations of women with lower education and underprivileged living conditions (Varela, 2007).

The analysis of cumulative parity allows us to study the real reproductive experience of women pertaining to different cohorts or generations, until the age they have at the time of the survey, as well as to assess the variations in the intensity of reproduction. Nevertheless, this indicator is limited by the fact that women under analysis are in different stages of the reproductive cycle and therefore only those that reach the end of the fecund period have completed their reproductive trajectory.

During the 1985-1996 period, the analysis of cumulative parity shows a reduction of the number of births accumulated by women from all cohorts, with the exception of adolescents (aged 15 to 19), among whom the cumulative parity notably increased (by 84%). During the following period (1996-2006) the reduction was experienced among all women cohorts. This time it was particularly noticeable in the case of adolescents, whose percentage change went from positive (84%) to negative (-53%). The reduction of cumulative parity among women aged between 20 and 29 is especially important, given that those are the peak-ages of fertility (which also include the 30-34 age-group)⁵.

³ There has to be taken into account that comparisons established with data from different sources (Population censuses and households surveys) could lead to errors, given that in one case total population is considered and the other, is a population sample.

⁴ Between 1996 and 2004, more than 100.000 individuals emigrated, mostly in active ages (Cabella and Pellegrino 2005).

⁵ Traditionally, the highest fertility rates were those of women aged between 20 and 29 years. For that reason, these have been denominated the peak-ages of fertility. In the last decade, however, fertility rates of women between 30 and 34 have become similar to those aged 20 to 29. This is why women from the 30 to 34 age group are now also considered in the peak-ages of fertility.

Table 1 – Cumulative parity and percentage change, Uruguay, 1985, 1996, 2006

	Census 1985	Census 1996	ENHS 2006	1985-1996	1996-2006
15 -19	0,10	0,19	0,09	84,27	-55,26
20 - 24	0,66	0,67	0,50	1,51	-24,14
25 - 29	1,42	1,29	1,12	-9,06	-13,66
30 - 34	2,08	1,94	1,72	-6,55	-11,63
35 - 39	2,52	2,38	2,22	-5,34	-6,98
40 - 44	2,68	2,61	2,50	-2,57	-4,23
45 - 49	2,73	2,70	2,56	-1,06	-5,25

Sources: Population and Households Censuses and ENHS 2006

This phenomenon is consistent with what is observed in Table 2. For the period 1985-1996, age-specific fertility rates were maintained or even decreased in all age groups, except that of adolescents. Indeed, fertility of women aged 15 to 19 increased during this period by 21% (the age-specific fertility rate goes from 51 to 71 per 1000), whereas for the rest of the age groups the indicator decreased between 3 and 30%. These facts have led to establish that the stability of the TFR was due, at least partially, to the effects of adolescent fertility (Varela, 1999).

Table 2 – Fertility rate by age (per 1000) and total fertility rate (TFR) - Uruguay, 1985- 2006

	1985	1996	2006
10 - 14	1,2	1,8	1,7
15 -19	58,5	70,6	62,6
20 - 24	131,2	122,3	90,7
25 - 29	135,7	129,4	99,1
30 - 34	96,1	97,4	91,7
35 - 39	54,0	52,2	48,4
40 - 44	16,9	15,6	12,7
45 - 49	1,5	1,0	0,7
TFR	2,48	2,45	2,04

Sources: Population and Households Censuses, Population Projections (revision INE-PP) and Vital Statistics

We can also appreciate that for the 1996-2006 period, the age-specific fertility rates experience an evolution similar to that of cumulative parity. Adolescent fertility experiences a reduction of 11%, and women aged 20 to 29 show reductions of 23 and 26% (table 2). However, is important to take into account that even though the decrease of adolescent fertility is significant, the reduction of its intensity among women in the peak-ages of fertility has a greater effect as far as population replacement is concerned, given that their share in the TFR is more important (with contributions of 22%, 24% and 23%, whereas adolescents contribute only 15%).

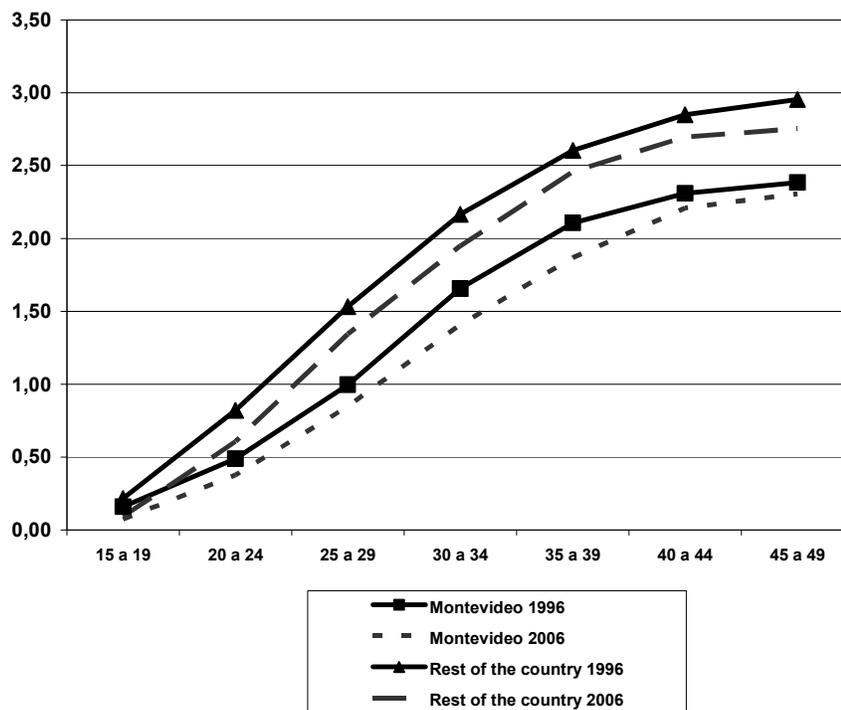
2.1. Fertility by region

The different areas of residence imply different patterns of socialization. These cultural models are often translated into different types of behavior in the distinct fields of action

of individuals and in different stages of the life cycle. As far as reproductive behavior is concerned, the different regions of residence have an impact on the rhythm and intensity of fertility.

The analysis of cumulative parity considering Montevideo (the capital city and its province, that concentrates almost half the population of the country) and the rest of the country (18 provinces) shows that between 1996 and 2006 the average of children accumulated by women in all age-groups experienced a reduction in both areas (graph 1).

Graph 1 – Cumulative parity, Montevideo and the rest of the country, 1996 – 2006



Sources: Population and Households Census 1996 and ENHS 2006

As we have established for the country as a whole, we observe that the reduction is more important in the case of adolescents and young women (around 50% and 25%), and that this decrease is slightly higher in the rest of the country (table 3).

Nevertheless, in 2006, as we also observed for 1996, the rest of the country still has a higher level of retrospective fertility. By the age of 25 to 29, these women already accumulate one child in average (1,34), while those who live in Montevideo only have 0,85. At the age of 35 to 39, those living in the rest of the country accumulate more children than those aged 45 to 49 that live in the capital (graph 1).

Table 3 – Percentage change of cumulative parity between 1996 and 2006, Montevideo and the rest of the country

	1996 - 2006	1996 - 2006
	Montevideo	Rest of the country
15 - 19	-53,2	-56,8
20 - 24	-22,9	-26,2
25 - 29	-14,9	-12,3
30 - 34	-15,0	-10,0
35 - 39	-11,3	-5,6
40 - 44	-4,4	-5,4
45 - 49	-3,2	-6,8

Sources: Population and Households Census 1996 and ENHS 2006

In summary, parity is reduced in both regions. The decline is slightly higher in the rest of the country than in Montevideo among women younger than 24 and over 40. On the contrary, in the capital city, the negative percentage change is higher than in the rest of the country among women in the central age groups (25 to 39). This implies that the women who were adolescents in 1996, 10 years later control better their reproduction than those from the interior. On the other hand, women in their teens and young years from the interior experience a greater reduction in cumulative parity. This could indicate a postponement in the beginning of reproduction among these women (table 3).

2.2 Fertility and education

Education is a determining factor in female reproductive behavior. Recent research carried out in Latin American countries showed the important educational differentials in the reproductive behavior of women, especially when they have access to higher levels of education. These studies reveal that each additional year of secondary education has a significant impact on reducing total fertility (CEPAL, 2004). The educational level not only enlarges women's aspirations and opportunities for social integration, often in positions that are incompatible with a large family, but also makes more easily available information that is crucial to decide effectively the number of children.

Previous studies of fertility according to levels of educational attainment in 1984 and 1996 in Uruguay, showed that women with primary education only, had in average two more children than those who completed secondary school (Niedwoorok, 1986; Paredes and Varela, 2005).

Our analysis of cumulative parity by educational attainment in 1996 and 2006 seeks to discover the gaps in reproductive behavior among women with different levels of education. It also intends to find out whether in 2006 women from the lower educational levels experience a reduction in the number of children they have had, compared to the behavior of women at the same age, 10 years before. This will allow us to identify more precisely the social groups that are responsible for the recent changes in fertility in Uruguay.

Table 4 shows that between 1996 and 2006, cumulative parity is reduced among women younger than 40 with a very low educational level (incomplete primary level) and in all ages among women with a medium or high educational level (complete secondary and complete university).

Table 4 – Cumulative parity by age group and educational level Uruguay, 1996 – 2006⁶

	Incomplete primary level		Complete primary		Secondary 1st cycle		Complete secondary		Complete university	
	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006
15 -19	0,46	0,22	0,26	0,21	0,08	0,04	x	x	x	x
20 - 24	1,43	1,14	1,02	1,02	0,47	0,52	0,16	0,10	0,16	0,11
25 - 29	2,27	2,19	1,74	1,83	1,06	1,19	0,60	0,37	0,44	0,34
30 - 34	2,88	2,54	2,32	2,48	1,71	1,74	1,32	1,01	1,08	0,99
35 - 39	3,36	3,29	2,73	2,84	2,10	2,10	1,80	1,57	1,64	1,43
40 - 44	3,59	3,59	2,92	3,00	2,24	2,31	2,01	1,91	1,88	1,75
45 - 49	3,59	3,61	2,85	3,04	2,26	2,39	2,04	1,95	2,01	1,83

Sources: Population and Households Census 1996 and ENHS 2006

However, reproductive gaps have not disappeared in the last decade. On the contrary, they have persisted and deepened, especially when we compare women who have only finished the first cycle of secondary studies and those who have completed secondary level and have access to tertiary education.

Mean final parity (cumulative parity of women aged 45 to 49) among the less educated is a little more than one child above cumulative parity for the country as a whole (3,61 and 2,56 cumulated children, respectively). Women who have completed primary school but did not finished Secondary first cycle (6 to 8 years) are half a child above the average of the country. Cumulative parity among women who have completed secondary education and more is below the average of the country (2.56 children).

We would like to highlight that in the case of the two higher education categories, cumulative parity is below population replacement level (1,95 and 1,83 cumulated children by the end of fecund life), a situation that had already appeared in 1996.

This suggests that, among educated women, population replacement has been jeopardized for at least two generations, a phenomenon that will probably deepen in the next generations, given the fertility levels currently experienced by the younger cohorts. These show a reduction in the cumulative parity compared to 1996, which suggests that by the end of their fecund life they will have a lower final descent than women that have already reached the end of their reproductive life.

Table 5 shows the percentage changes in each educational level between 1996 and 2006. In the two more educated levels, cumulative parity of every age cohort has been reduced. Especially noteworthy is the decrease between age 20 to 29 of those that finished the University, and from age 20 to 34 of those with secondary studies completed.

⁶ Study years per category: incomplete primary level implies less than 6 years; complete primary, 6 to 8 years; secondary 1st cycle 9 to 11 years; complete secondary at least 12 years; complete University, 15 years or more.

Among women who have attained intermediate levels of education (6 to 11 years of study) there is a slight augmentation or stagnation of cumulative parity, with the exception of women in their teens, who experience an important reduction (-18,6 and -46,7 % respectively).

Table 5 – Percentage change in cumulative parity between 1996 and 2006, by educational level, Uruguay

	1996 - 2006	1996 - 2006	1996 - 2006	1996 - 2006	1996 - 2006
	Incomplete primary level	Complete primary	Secondary 1st cycle	Complete secondary	Complete university
15-19	-51,5	-18,6	-46,7	x	x
20-24	-20,6	-0,2	10,5	-35,2	-31,9
25-29	-3,2	5,2	12,0	-38,1	-22,9
30-34	-12,0	7,2	1,4	-23,2	-8,7
35-39	-2,0	4,0	0,0	-12,5	-13,0
40-44	0,0	2,5	2,9	-5,0	-6,9
45-49	0,4	6,5	5,8	-4,6	-8,9

Sources: Population and Households Census 1996 and ENHS 2006

The reduction of cumulative parity among the less educated women from different cohorts supports the hypothesis that poorly educated women, who probably live in underprivileged socio-economic conditions, are contributing to the recent decline of fertility.

However, the reduction of cumulative parity among women in the highest education levels is greater than the one experienced by less educated women, and it is observable in all cohorts. This implies that these women are also contributing to the recent decline of fertility. But they stand out from women with lower educational levels because of the fact that they have been reducing their number of children for longer.

From these observations it follows that the social groups that are responsible for the recent decline in fertility are both the least (incomplete primary) and most educated women (complete secondary and university level). Nevertheless, the reduction of fertility among less educated women is recent, since it is only observable among the younger generations (women that are in their teen and early adulthood years). Among highly educated women, the reduction in fertility is still ongoing in the younger generations, but it has been going on for longer, since we can observe that the older cohorts are still reducing their number of children, when compared to the precedent generations.

The decline of fertility among the less educated women is not a phenomenon unique to Uruguay, but it has become widespread in different Latin American countries, as shown by Chackiel and Schkolnik (2004). The demographic transition has continued over the last two decades in spite of the economic stagnation that has caused a raise in poverty in many countries. There is no single explanation of this process, but the sexual and reproductive health programs focused on low-income sectors are one of the factors that have an incidence on it. These programs have enabled poorly educated women from low-income sectors to have more control over their reproductive behavior, as well as a greater independence between sexuality and reproduction.

To sum up, the analysis of fertility by educational attainment level has revealed that reproductive inequalities continue to exist in Uruguay, where at least three reproductive models coexist, that correspond to different stages of the first demographic transition and the beginning of the second.

One reproductive model is that of less educated women (the two first categories, up to 8 years of study). Among these women the average of children is above the national average for all cohorts, and among those who are at the end of their reproductive life (aged 45 to 49) cumulative parity reaches 3,6 children. According to a classification proposed by CEPAL/CELADE for the TFR, this values correspond to a low-medium level of fertility and thus to the central stage of the first demographic transition (Chackiel and Schkolnik, 2004).

A second reproductive model is that of women with an intermediate level of education (9 to 11 years). They show a tendency towards the completion of the first demographic transition, with 2,39 cumulated children by the end of the reproductive cycle.

Finally, highly educated women constitute a third model, with levels of parity below the national average, for all cohorts. In addition, cumulative parity among women in the end of the reproductive cycle is below population replacement level (1,95 and 1,83 for the two highest education levels) and also below the current fertility level (TFR of 2,04). This shows that the average number of children that most educated women have, has not been sufficient for population replacement for several generations, a reproductive behavior that is typical of the second demographic transition.

2.3. Fertility and socio-economic status

The position in the social scale is associated with important differences in women's reproductive behavior. Even though educational attainment has allowed us to get a first approximation to the socioeconomic position, our data source provides us with variables that strictly consider the household social position and therefore enables the study of levels and timing of fertility according to it.

In the following section, we analyze in the first place fertility differentials taking into account if women live or not in poor households. We then examine whether there exist important differences in reproductive behavior according to the different poverty categories, which account for the heterogeneity of this social condition. Lastly, we analyze fertility differentials among women who do not live in poverty conditions, according to their distance to the poverty line (PL) threshold.

2.3.1. Fertility by household poverty condition

We can have a first approximation of fertility differentials according to the position occupied in the social stratification system when we observe whether households are above or below the poverty threshold (an indicator that combines the income and unmet basic needs approaches to the study of poverty⁷).

⁷ We use the poverty line threshold elaborated by INE in 2002, and we consider as well the existence of unmet basic needs in the household. We consider that a household has unmet basic needs when it has at least one of the basic needs unmet. With this two measures of poverty, we constructed a variable that classifies households in four categories: 1)

Table 6 shows that all cohorts women fertility levels are systematically above or below the national average according to their poverty condition. Among women that live in poor households, the distance to the national average gets larger as cohorts get older, which means that the gaps were probably even greater in the past. Thus, the difference in cumulative parity with the national average is only 0,1 children among adolescents (aged 15 to 19), whereas it increases to 1,2 children among women in the end of the reproductive cycle.

Table 6 – Cumulative parity by poverty condition and difference from the country average, Uruguay, 2006

	Cumulative parity			Differences to the country average	
	Poverty	Non-poor	Country average	Poverty	Non-poor
15-19	0,17	0,03	0,09	0,08	-0,06
20-24	0,99	0,29	0,50	0,49	-0,22
25-29	1,98	0,82	1,12	0,87	-0,30
30-34	2,63	1,42	1,72	0,92	-0,30
35-39	3,24	1,80	2,22	1,02	-0,41
40-44	3,63	2,11	2,50	1,13	-0,39
45-49	3,73	2,26	2,56	1,17	-0,29

Sources: ENHS 2006

As for women who live in households that are not in underprivileged conditions, table 6 shows that they have less children per woman than the national average in all cohorts, a difference that also becomes greater as we consider older women, but that is never superior to 0,4 child per woman. This, along with the evidence from last section, suggests that the changes in reproductive behavior started long time ago among highly educated women that live in households above the poverty threshold, given that older generations show fertility levels below those that are average in the country.

In addition to differences in cumulative parity, we need to highlight differences in the timing of retrospective fertility between women that live in conditions of poverty and those who do not. Women aged 20 to 24 that live in households above the poverty threshold have a very low cumulative parity (0,3), while those who live in poverty conditions already accumulate a child per women in that age group, which means that they begin their reproduction much earlier.

Among women from the following age group, from 25 to 29, women who live in poor households already accumulate two children in average, whereas those who do not live in poverty conditions only accumulate 0,8 children. Cumulative parity among women in the end of the reproductive cycle shows a difference of 1,5 children between women who

households considered poor both by income and basic needs criteria (structural poverty); 2) households considered poor by income criteria but do not have unmet basic needs (recent poverty); 3) households that are poor by basic needs criteria but do not have low income (inertial poverty); 4) households considered not poor by any of the criteria (non-poor households).

live in poor households and those who do not, which constitutes an important difference given the low-fertility context of the country.

This difference in fertility at the end of the reproductive cycle can be explained both by disparities in the intensity and timing of fertility. It gives support to previous research (Paredes and Varela, 2005) that found that women who do not live in poverty conditions start their reproduction later and with a lesser intensity. The early start and intense fertility among women that live in underprivileged conditions leads to a difference of more than a child per woman (1,2) with the national average.

The analysis of fertility taking into account the position in the social structure reveals that in spite of the decline of fertility over the last decade, the fertility gaps remain. This means that two different reproductive models coexist: that of women who live in poverty conditions, considered of an intermediate to elevated intensity of fertility, that corresponds to an intermediate phase of the demographic transition; and that of women that do not live in poor households, with a below population replacement fertility level, that is typical of the second demographic transition.

2.3.2. Fertility by categories of poverty

It is known that poverty is not a homogenous category, given that behind the classification of a household as poor there are many types of situations that lead to the poverty condition. A household can be in such a situation due to a lack of income, because it has unmet basic needs only, or because of both deprivations simultaneously (see footnote 9).⁸

Table 7 - Cumulative parity by poverty condition and differences to the average in poor households. Uruguay, 2006

	Cumulative parity			
	Structural poverty	Recent poverty	Inertial poverty	Poverty average
15-19	0,22	0,12	0,13	0,17
20-24	1,28	0,88	0,73	0,99
25-29	2,45	1,76	1,59	1,98
30-34	3,28	2,21	2,23	2,63
35-39	4,05	2,79	2,65	3,24
40-44	4,65	3,12	3,01	3,63
45-49	4,66	3,51	3,20	3,73

Sources: ENHS 2006

Women living in structural poverty condition households (with both income and basic needs deprivations) are those with the most elevated final descent. Their average is much higher than that of the country (more than two children above the national average) and also higher than the average of women in poor households (one child above). There is also an earlier timing of retrospective fertility in comparison to women in poor

⁸ Structural poverty affects 15% of women in the country, recent poverty to 10% and 12% of women live in inertial poverty conditions.

households, since cumulative parity is higher in all age groups, with the exception of adolescents, where the differences are not important (table 7).

This behavior is what we could expect theoretically, given that the condition of structural poverty implies a situation of acute deprivation in which the household is below the poverty threshold of income and at the same time has unmet basic needs. This supports the hypothesis that women in the most deprived living conditions have a more intense reproductive behavior, which also starts earlier (Varela, 2007). Among these social sectors there is little space for the construction of a life project beyond motherhood, and in addition the access to contraception is often difficult.

In order to analyze the two other categories of poverty, it is important to remember that recent poverty is a situation where the household is below the poverty income threshold that has not crystallized yet in unmet basic needs, whereas inertial poverty is a situation where income is above the poverty threshold, but the household still has unmet basic needs that were generated in the past.

When we analyze the reproductive behavior among women in these two types of households, we find that, contrary to what could be theoretically expected, women in a recent poverty situation have cumulative parity levels that are slightly higher than those of women in a situation of inertial poverty, in almost all age groups. This leads to a difference of 0.3 children between the two categories in the final descent.

We would expect that recent poor women would keep their reproductive patterns from before the low-income situation, and that these patterns imply a less intense fertility than that of women who have been in a poverty situation for longer. On the contrary, women who live in an inertial poverty situation could have a reproductive behavior similar to that of women in more deprived households, given that they cannot meet basic needs despite their sufficient level of income, which could mean that the deprivation situation comes from the past.

Nevertheless, women in these two categories of poverty have fertility levels that are less elevated than the average of women in poor households: half a child less in the case of women in conditions of inertial poverty and 0,2 for those in recent poverty conditions.

Our analysis shows that the intense fertility among the most deprived women elevates the average of children among women in underprivileged conditions. When we analyze fertility levels of women who live in poor households in a general way, we cannot see differences that are a consequence of the multiple dimensions and heterogeneity within the poverty condition. According to our results we can hypothesize that income deprivation might have a higher impact on fertility levels than basic needs deprivation. However, we believe this surprising outcome needs further research.

2.3.3. Fertility by the position of non-poor households in the social structure

In this section we examine the levels and timing of retrospective fertility among women in non-poor households, in other words, households that do not experience deprivations of any kind. We analyze the differences in reproductive behavior among women that live in non-poor households within an income distance of one, two, three and four or more

poverty lines (PL), as a way of establishing a gradient in the social scale according to income levels⁹.

Table 8 – Cumulative parity by social position within non-poor households and differences to the non-poor household average

	Non-poor households				
	1 LP	2 LP	3 LP	4 or more LP	Non-poor average
15-19	0,05	0,01	0,00	0,00	0,03
20-24	0,45	0,22	0,12	0,06	0,29
25-29	1,10	0,69	0,45	0,32	0,82
30-34	1,69	1,23	1,12	1,12	1,42
35-39	2,06	1,68	1,57	1,44	1,80
40-44	2,37	1,98	1,91	1,83	2,11
45-49	2,61	2,12	2,04	1,96	2,26

Sources: ENHS 2006

As table 8 shows, while we go up in the social structure, systematic differences in reproductive behavior are observed. If we focus our attention on the extremes of the structure, we may see that the final descent among women that live in households within one PL is a little more than half a child (0,6) higher than that of women who live in households within more than four PL. The final descent among women that live in households within one PL is similar to the national average (2,56), whereas the final descent of women who live in more elevated social positions is below it.

This finding is consistent with the fact that the population in most deprived conditions tends to start childbearing earlier and at more intense pace. While women that live in households within one PL accumulate slightly more than one child already in the 25 to 29 age group, women at the other end of the social scale barely accumulate 0,3 children per woman. We can also affirm that within the non-poor households -and for every age group-, women in the lower category have a higher fertility level than the non-poor women average.

The heterogeneity in reproductive behavior is observable all along the stratification scale, and differences become more important as we go further from the poverty line. In addition, these differences are more important among women from the youngest cohorts. From the age of 30 and up, cumulative parity is similar among women in non-poor households within a distance of two and more PL.

In summary, social stratification in terms of income has therefore an impact on the age at which childbearing begins. This supports the hypothesis that, in the context of a second demographic transition, the postponement in fertility timing and the lower levels of final parity are part of women's emancipation process. In this process, the professional career gains importance, and, consequently, family formation becomes a project among others of equal importance. As economic conditions are less precarious, there is greater space for alternative individual projects other than family formation.

⁹ The percentage of women that live in households within one PL is 27%, whereas 17% of women live in households within 2 PL, 9% within three PL and 12% within four and more.

2.4. Fertility and marital status

In a demographic approach, marital status constitutes an intermediate variable that affects the trends and reproductive levels of a population, given that it is in the context of couples that most part of the reproduction occurs.

Historical demography has shown that in Western European societies, where the power of Christian churches was important, nuptiality worked as a mechanism of auto-regulation of population growth. As births outside marriage were scarce, it could be proved that late age of entry to marriage, together with the proportion of women who remained single their entire life, were the main methods of contraception in those societies since at least mid-eighteenth century to the 1940s (Hajnal, 1965).

However, historical studies on Latin America have shown the importance of stable unions outside of marriage, what makes the assessment of nuptiality as an intermediate variable of fertility much more complex. In general, this historical trend of cohabitation is associated to family formation patterns among the most deprived and less educated social sectors, both rural and urban, usually with high fertility levels.

On the other hand, as we have mentioned, the increase in cohabiting unions and of wedlock births are part of the family changes characteristic of the second demographic transition. In the context of this process, this behavior is adopted by highly educated social sectors, and now associated with low fertility levels.

The analysis of cumulative parity by marital status shows that, among women with a couple (married or in cohabitation¹⁰), in most cohorts the highest parity corresponds to women in cohabiting unions with a final descent (in the 45 to 49 age group) 27% higher than married women and the cohort total parity (table 9). This may suggest, on the one hand, that married women control more their reproduction, and, also enhances on the other hand, that cohabiting unions are considered a legitimate context for family formation in the Uruguayan society. Cumulative parity is higher for married women than for women in cohabiting unions only in the two youngest cohorts (17 and 20 %). The interactions of marital status with other explanatory variables will contribute to the understanding of this behavior.

Table 9 - Cumulative parity by marital status. Uruguay, 2006.

	Married	In cohabiting union	Separated or divorced	Widow	Single	TOTAL
15-19	0,69	0,56	0,40	0,39	0,05	0,09
20-24	1,17	1,04	1,17	1,27	0,21	0,50
25-29	1,49	1,58	1,65	2,10	0,45	1,12
30-34	1,92	2,06	1,88	2,69	0,82	1,72
35-39	2,33	2,70	2,25	2,86	1,05	2,22
40-44	2,55	3,07	2,52	2,91	1,36	2,50
45-49	2,62	3,24	2,57	3,09	1,16	2,56

Sources: ENHS 2006

¹⁰ The distribution of women aged 15 to 49 according to their conjugal status is as follows: 38% single, 34% married, 19% in cohabiting unions, 8% separated or divorced and 1% widows.

In turn, we also observe an unexpected behavior among women whose conjugal life has been truncated, both those separated or divorced¹¹ and widows. As a matter of fact, it is expected that those who interrupt their unions (and therefore at risk of childbearing for less time) have lower fertility than those who remain in a couple. As we shall see later, a more disaggregated analysis allows us to suggest an explanation regarding the fertility of separated / divorced women. Unfortunately, we cannot analyze the case of widows, who appear as the category of higher parity in the peak-ages of fertility. The scarce number of cases makes our estimations not statistically significant at a lesser level of aggregation. This suggests the need to undertake future analyses with greater depth that could allow us a better explanation of these results.

Finally, we find that single women cumulative parity is the lowest for all ages. Independently of their age, single women have fewer children than those who have or had some kind of marital relationship.

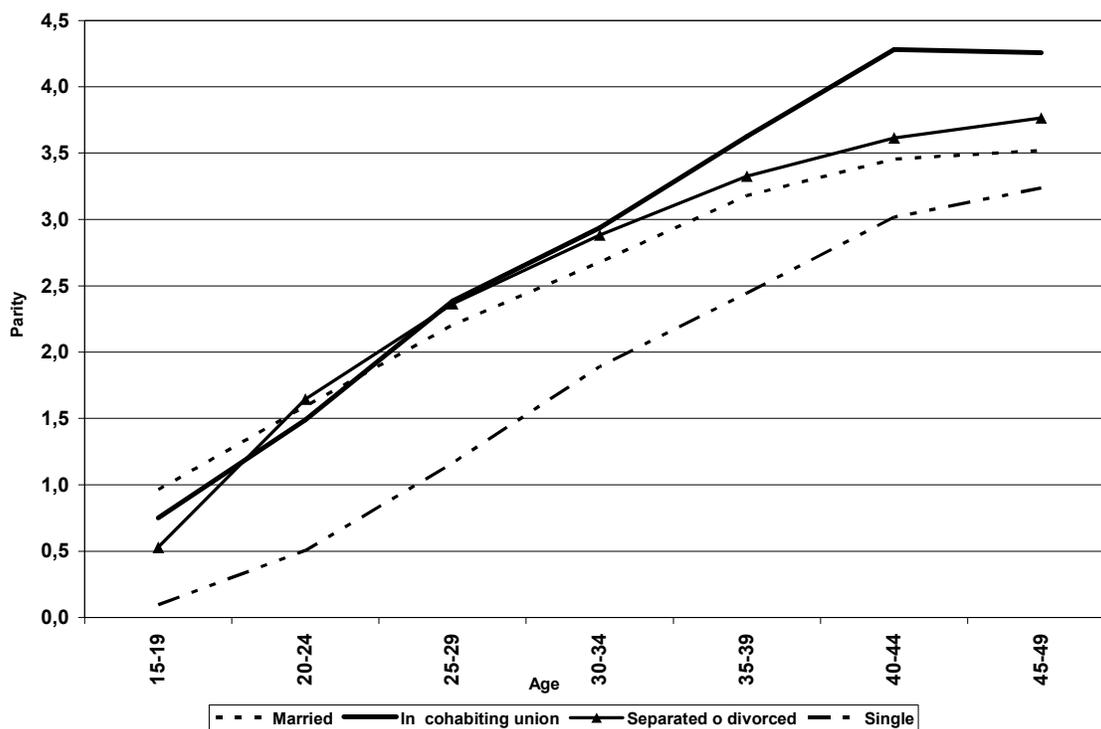
We will examine cumulative parity by marital status according to the poverty condition of the household in order to refine our analysis.

The first element to stress is the level difference between poor and non-poor sectors, in all categories. The percentage change of cumulative parity between poor and non-poor married women is about 50% in almost all cohorts. Between women in cohabiting unions the difference is around 85% and almost doubled and more than tripled in the case of separated and single women. This is especially evident among women from the older cohorts. Poor married women reach the end of their reproductive cycle with slightly more than one child more than married non-poor women. This difference is around a child and a half among separated women and those in cohabiting unions, and of over two and a half children among single poor and non-poor women (where we probably find separated women from cohabiting unions) (graphs 2 and 3).

As we have previously mentioned, poverty has historically been associated with a higher level of fertility and an uprising informality within conjugal situations. This is evident when analyzing fertility in both single women and women in cohabiting unions. The latter hold the highest parity, accumulating over one child more than married women by the end of their reproductive life. However, -and as it can be observed in the women's entirety- in the poorer younger generations, parity in married women is 28% higher than that of women in cohabiting unions. Thus, these results could suggest that there could be a greater reproduction control among young women in cohabiting unions, most likely linked to sexual health and reproductive programs. Furthermore, the analysis by poverty condition allows us to observe that the phenomenon of a higher parity among separated and divorced females in respect of married women only occurs among those who live in poor households. This leads us to think that our results could be affected by problems of marital status declaration, as well as accumulated parities related to more than one union (graph 2).

¹¹ We identify as separated only women separated from a marriage, given that our data does not allow us to identify women separated from their partner in a cohabiting union. These cases are probably aggregated in the single category.

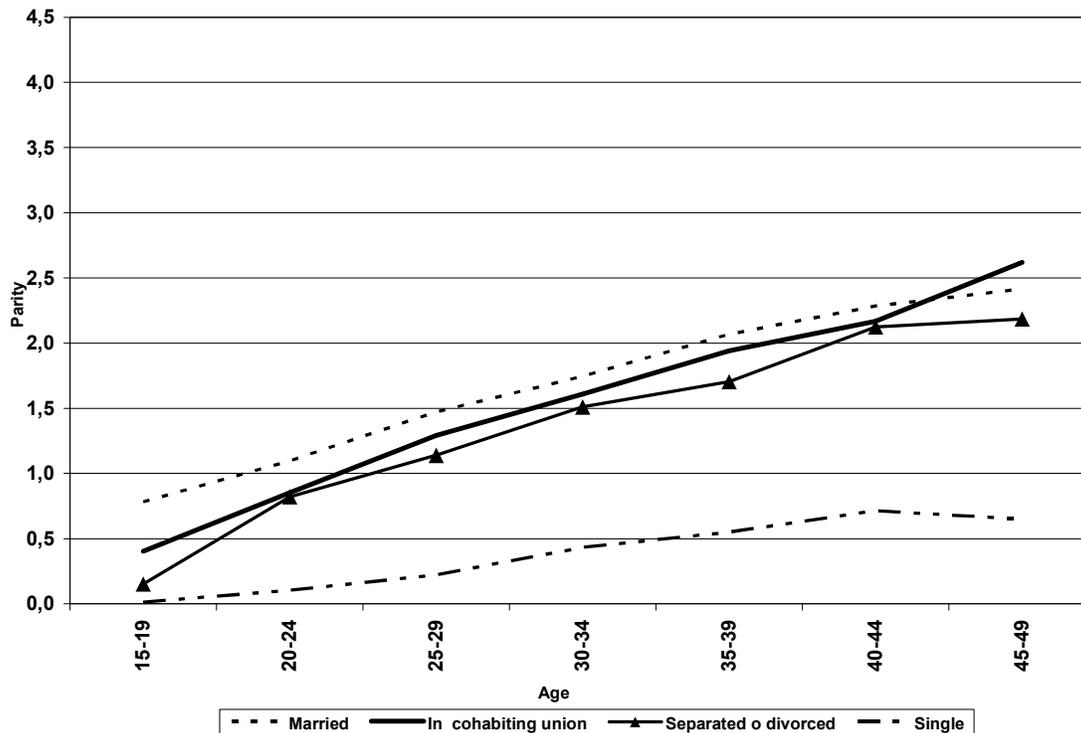
Graph 2 - Cumulative parity of women in poor households by marital status. Uruguay, 2006



Sources: ENHS 2006

Among women who live in non-poor households, those who are married show the highest parity in almost all cohorts, except for the eldest ones. This suggests that within this social sector, marriage continues to be the most proper setting for childbearing. Nevertheless, it may also suggest a greater reproduction control among women in cohabiting unions. The percentage change between married women and those in cohabiting unions decreases with age. The largest difference proves to be among teenagers (94%), which may be linked to a high union legalization due to prior pregnancies. Probably most women in the separated category mark heads of single-parent households. Even though they reveal a somewhat lower parity than those already married –as can be expected from the eventual shattering of a couple’s trajectory-, they also make an important contribution to total fertility. Finally, single women represent the less fertile category, accumulating a final parity barely over the half child (two and a half children less than single women from poor households; graph 3).

Graph 3 – Women’s cumulative parity in non-poor households by marital status. Uruguay, 2006



Sources: ENHS 2006

To sum up, our parity analysis by marital status highlights the importance of cohabiting unions as a family scenario in which Uruguayan children are born. This occurs since women with current partners are the ones with the higher parity. However, while considering the poverty condition we observe married women present the highest parity in almost all cohorts within non-poor sectors. This, in term, could imply marriage still prevails as a family institution for childbearing in the Uruguayan society. The analysis by poverty has also allowed us to identify important differences in parity among women in cohabiting unions. This enables us to confirm that cohabiting unions have a different meaning according to their social sector, as previously mentioned in this chapter. While amongst women from poor households cohabiting unions are associated with higher levels of fertility –a historical trend in Latin America’s most deprived sectors-, in women from non-poor sectors this type of union is associated with low levels of fertility. This helps support the hypothesis that these women share the values inherent of the second demographic transition; for them, marriage has lost its predominance as an institution for childbearing.

3. Age at first birth analysis

As we have previously mentioned, the characteristic transformations of the second demographic transition and new tendencies in the patterns of union formation, as well as

changes in the educational and professional profile of women -among other social processes-, have been translated into transformations in fertility. This can be particularly observed in the postponement of the first child. Evidence confirms that postponement of the first birth is a phenomenon that began in Western Europe among the cohorts of women born in the 1940's, ultimately spreading out to other industrialized countries and continuing so to this day (Frejka and Sardon, 2006; Kohler and Ortega, 2002). Concerning parity analysis, women's age pattern at first birth is relevant due to the greater or lesser existence of potential time to acquire higher birth orders.

Several research studies undertaken in developed countries have related late fertility regimes to high levels of educational capital (Rindfuss, Morgan et al, 1996). The generally accepted explanation for this phenomenon stresses the difficulties in combining two different roles: motherhood and insertion in the educational system. Therefore, a woman would postpone her first birth until she has reached her desired educational level. The woman's expectations of a good insertion within the labor market should be added to this mix; her maternity being postponed until a solid insertion has been achieved. As a result, the transition to motherhood could be interpreted as an indicator of women's wellbeing.

With reference to our country -as it has already been mentioned-, in the last years several researchers have begun to debate on whether the recent transformations observed in Uruguay can be interpreted within the context of the SDT, taking into consideration the stark differences between developed countries and the Uruguayan society, not only in the social context in which the family changes have occurred, but also in their meaning as far as value orientations are concerned (Cabella, 2003; Cabella, Peri et al., 2004; Paredes, 2003).

The study of women's age at first birth contributes to the analysis of fertility transformations during the last decade of the twentieth century, and also sheds light on the debate about the country's inclusion in a SDT process.

We have already shown the existence of gaps within fertility levels, referred to educational attainment, position in the social structure and region of residence. In this section we seek to determine whether these gaps also exist when age at first birth is considered. We therefore analyze the differences in the age at first birth according to several explicative variables: women's age cohort, educational attainment level and region of residence.

The methodological approach for this analysis consists of survival tables and a statistical model of regression appropriated for the event history analysis (proportional hazard model)¹². The analyses have considered women aged 15 to 49 in our data source (ENHS

¹² The event history analysis (or hazard models) consists of a series of techniques that allow to identify the way in which determined variables affect the probability of an event happening, in our case, a birth. The dependent variable is the time elapsed until the occurrence of the event (age at birth of the first child). We use in the first place a descriptive technique – survival tables- that allow analyzing the rhythm and timing of the events, as well as the relations between some independent variables and the risk of occurrence of the events. Secondly, we use Cox regression model (a proportional hazards model) to assess whether the association between the independent variables and the age at first birth is statistically significant.

2006¹³), given the questions about reproductive history have only been aimed at women within these age groups.

When observing all women, we first appreciate that at the age of 20, a 25% (the first quartile) had already had a child; first birth had arrived at the age of 24 for 50% of them (the median) and at the age of 30 for 75% of them (table 10). If we analyze this figures considering the normative ages of the educational system and the average age at entry to the labor market, we can interpret that the first quartile implies an age where women have barely finished Secondary school; the median could coincide with the final stages of a university career or the moment of entry to the labor market, and the third quartile would match the ending of a university career or a more solid insertion in a professional career. On the other hand, if we look at the figures in a different way, we observe that by the end of their reproductive cycle only 11,6% of women never had a child¹⁴.

3.1. First birth: an age group analysis

In order to thorough our analysis, we compared the intensity differences of motherhood within generations of women chosen by age groups of 10 years apart (25-29, 35-39 and 45-49), estimating separate life tables for women belonging to each cohort.

Women from cohorts 35-39 and 45-49 reach the first quartile and the median at the same age: 20 and 24 ages respectively, whereas there is a one-year delay to reach the third quartile among those aged 35 to 39 (table 10). Therefore, the inter-quartile range - indicator of the dispersion in the age at first birth-, is greater in this last cohort. Among the youngest women (25-29), 25% of them become mothers a year before the other cohorts under analysis (age 19). However, they show a delay of one year with regard to the age at which 50% of them become mothers (table 10). At the time of the survey, the younger generation had not reached an age that accumulated 75% of first births. Thus, we cannot show results for the third quartile of this cohort.

Table 10 – Women’s age at first birth for selected cohorts. Uruguay, 2006

Age	First quartil (25%)	Median (50%)	Third quartil (75%)	Inter-quartil range
25-29	19	25	-	-
35-39	20	24	30	10
45-49	20	24	29	9
Total	20	24	30	10

Source: ENHS 2006

¹³ For methodological reasons, we exclude from the analysis women that had children whose age is not declared (that represent 0,1% of the cases).

¹⁴ In previous works, we have analyzed the case of women that get to the end of their fecund life without children, for the cohorts born from 1896 to 1951 (Pellegrino and Pollero 2000). Percentages go from 25% among women born by the end of the nineteenth century to around 13% among those born after 1930, to only 11% among those born by the end of the 1940’s. Our results allow confirming that the figures have remained stable since then.

To sum up, our analysis of age at first birth for these three cohorts reveals differences in the intensity of fertility and suggests the existence of two opposed phenomena:

On the one hand, the younger the cohort, the greater the proportion of women that postpone the age of childbearing (given the one-year delay in the third quartile for women aged 35-39 with relation to those who are older; women aged 25 to 29 reach the median a year after the other two cohorts).

On the other hand, among the younger cohort we find a greater proportion of women that were mothers at an earlier age than the other cohorts.

3.2. The age at first birth by educational attainment

We have previously established educational attainment as an important factor that explains fertility variations. The specialized literature shows this relation is also found on the age at first birth; childbearing happens earlier among the less educated women and is postponed among the most educated. Our results confirm this hypothesis. Among women who were barely educated, 25% of them experienced motherhood at 17, whereas among women with university-level studies this accumulation was reached 9 years later, at the same age in which 75% of the less educated women have been mothers (26 years old) (table 11).

Table 11 - Age at first birth by educational level. Uruguay, 2006

	First quartil	Median	Third quartil	Inter-quartil range
Incomplete Primary level	17	20	26	9
Complete Primary	18	20	25	7
Secondary 1st cycle	20	23	28	8
Complete Secondary	24	29	36	12
Complete University	26	29	36	10
Total	20	24	30	10

Source: ENHS 2006

We can also appreciate that the completion or incompleteness of the Secondary 1st cycle establishes a primary demarcation in the age at first birth. Women who completed such cycle -and have therefore gained nine years of education-, postponed the birth of their first child two or three years, in comparison to those with an inferior level of education (three compared to those with an incomplete Primary; two compared to those with complete Primary education). The difference becomes greater when we compare women who have only completed the Secondary's 1st cycle and those from the two highest educational categories. Last of all, in both best educated categories the difference can be found only within the first quartile, with a greater delay regarding University attendees. Nonetheless, even though 25% of women with university-level studies postponed their first birth for two years, we find evidence of an afterward *catching up* behavior, equaling out with those with Complete Secondary cycle. This could be a sign of a more

homogeneous behavior once the biological period for childbearing becomes closer to its end.

From a different angle it can be observed that, at age 19, 37% of the less educated women had already become mothers, whereas this proportion is of 32% among those with 6 to 8 years of schooling, 16% among those with complete Secondary 1st cycle and only 2 to 3% of those who finished secondary or University¹⁵. At the age of 30, 80 to 85% of the less educated women were mothers, and almost half of the highly educated ones too. Women who did not have children by the end of their reproductive cycle (49 years old) constitute less than 10% among the less educated (12% among those with no education) and slightly less than 20% among the most educated women.

Moreover, the analysis of the timing of motherhood when only those who had children are considered allows us to confirm the impact of educational attainment in the age at first birth. Among the less educated, 25% have a first child at 17, something that happens for 75% of them by the age of 22-23 (table 12). On the other end of the educational scale, 25% of women who finished university-level studies have had a child by the age of 24 – seven years after those less educated-, while 75% of them have had a first child at age 30, which would imply a difference of eight years with the less educated.

To sum up, the analysis of the age at first birth confirms that the educational attainment is one of the main factors that explain variations in fertility. We have found that the age at first birth varies according to the level of education attained by women, with a postponement among the highly educated. Adolescent motherhood has also proved to be more intense among the less educated. In the case of women with an intermediate level of education (Secondary 1st cycle) we cannot determine if having had a child during adolescence was an obstacle to pursue their education or, on the contrary, an early abandonment of the education system was followed by the first birth. In any case, less than 20% of these women were teenage mothers. Qualitative research has shown that less educated women who live in poor households usually abandon the education system before the pregnancy, while those from medium social strata continue in the system despite the pregnancy (Amorín et al., 2006). Only 2% of women who had access to tertiary-level studies finished their studies while being mothers.

Table 12 - Age at first birth among mothers by educational level. Uruguay, 2006

	First quartil	Median	Third quartil	Inter-quartil range
Incomplete primary level	17	19	22	5
Complete primary	17	20	23	6
Secondary 1st cycle	19	21	25	6
Complete secondary	21	25	28	7
Complete University	24	27	30	6

Source: ENHS 2006

¹⁵ In the case of women with university-level studies who started childbearing at the age of 19, they manage to finish almost the entire period in the tertiary education system having been mothers.

3.3. Hazard model results

Until now, we have analyzed the impact on the age at first birth of a series of attributes considered independently. In this section, we examine the joint effect of these attributes, which can be observed in the model we estimated (table 13). The coefficients express the relative risks (*hazard ratio*¹⁶), which show the impact of each independent variable on the age at which women have their first child. We analyze the associations that exist between the age at first birth (dependent variable) with the age group, the region of residence and the educational attainment level (independent variables). All the coefficients are significant at the 1% level.

The model confirms the statistical significance of the effect of the three variables, showing the following results (table 13):

- The postponement of childbearing among women from the youngest age groups
 - there are practically no differences among women older than 30
- Women from Montevideo postpone their motherhood for longer than those who live in the rest of the country
- The risk of early childbearing is similar among different regions in the rest of the country
 - the behavior of rural women stands out because of its unexpectedness: the risk of early childbearing is smaller among rural women than among those who live in the rest of the country, compared to those from Montevideo.
- A higher education level implies a smaller risk of having a first child, or, in other words, a greater postponement of motherhood.
 - the behavior of women with complete primary school also stands out because of its unexpectedness, with a higher risk of early childbearing than that for less educated women (incomplete primary school)¹⁷.

¹⁶ The effect of an explanatory variable on the hazard or risk of an event.

¹⁷ We can establish the hypothesis that these results show the impact of the sexual and reproductive health programs implemented since 2000. These programs have been focused on the less educated women from the most deprived social sectors, and could have an impact on the control of sexuality and on a greater independence between sexuality and reproduction. This might contribute to explain that these women have a lower risk than those who belong to the next education category.

Table 13 – Regression analysis (hazard model). Impact of selected variables on women’s age at first birth. Uruguay, 2006.

Variables*	Categories	Model	
		Hazard ratio	Standard error **
Women’s cohorts	20-24	1,50	0,017
	25-29	1,61	0,017
	30-34	1,74	0,019
	35-39	1,75	0,019
	40-44	1,76	0,019
	45-49	1,70	0,018
Geographic area	Provincial capitals	1,30	0,005
	Intermediate cities	1,27	0,005
	Minor areas	1,30	0,008
	Rural areas	1,08	0,007
Educational level	Complete Primary	1,15	0,007
	Secondary 1st cycle	0,77	0,005
	Complete Secondary	0,38	0,003
	Complete University	0,40	0,003

The categories of reference are: *Montevideo* for the geographical area, the *15-19 age group* for the cohort dimension, and *Incomplete primary school* for the educational level dimension.

*All the coefficients are statistically significant at the 1% level.

Source: ENHS 2006

To sum up, our analysis of both life tables and the hazard model has allowed us to establish a portrayal of women’s age at first birth, according to generations, region of residence and educational attainment level. Our results let us confirm women postpone the arrival of the first child, a phenomenon particularly clear among women who are younger than 30. This can be interpreted as an indicator of an increase in women’s wellbeing, as we have previously commented.

Paradoxically, we also observed that within age cohorts there was an increase in the proportion of teenage mothers, with the highest figures among women who were 25-29 (who belong to the generation of women with the highest adolescent fertility rates). This trend is inverted among the youngest women.

Another result that we want to draw attention to is that women from the capital experience a smaller risk of early childbearing than those who live in the rest of the country. Nevertheless –and in this last region–, there are no important variations when different levels of urbanization are considered, except in the particular and unexpected case of rural women (which will be the object of further research). Last but not least, the educational attainment level is the variable that establishes the most important differences in the age at first birth. This marks another finding that gives support to the coexistence of several demographic models in the unequal Uruguayan society.

4. Conclusions: Reproductive inequalities and demographic transitions

This paper aimed at examining the evolution of fertility in the period elapsed from the last census of population (1996-2006), a period of particular relevance in the demographic history of the country, since for the first time the total fertility rate reached a level below that necessary for the replacement of the population. We have also studied the fertility for different cohorts of women, based on their parity as can be studied with our data source (ENHS 2006). Particularly, we intended to shed light on the leading actors of the fertility decline, as well as discover the transformations and the existing socio-demographical and geographical gaps in reproductive behavior. Finally, we have examined the changes in the age at first birth, as one of the key factors to explain the recent decline in fertility.

The comparison of women's reproductive behavior between 1996 and 2006 has shown the decline of parity in all cohorts. However, the largest changes happened in the youngest cohorts, aged 15 to 34. The reduction of fertility among women in the peak ages of fertility (20-24, 25-29, 30-34) is the most relevant in terms of its impact on the total fertility rate and on population replacement. This impact is of great magnitude because of the fact that it is women in the peak ages of fertility that make the greatest contribution to the decline of the total fertility rate, due to both their higher rates and greater diminution in percentage terms.

The decline in teenage fertility contrasts with the positive variation experienced in the period 1985-1996. This decline is relevant because of the social importance of the phenomenon, given it implies a reduction in the fertility levels among women from the most deprived social sectors. On the other hand, we found that the fertility decline occurs both in the capital and the rest of the country, with a slightly greater reduction in the latter. This phenomenon results in a diminution of the fertility gap between these two areas.

Our analysis of fertility according to the educational attainment contributed to the identification of the social sectors that lead the recent fertility decline. These are sectors from both extremes of the educational scale. On the one hand, women with incomplete primary school; on the other hand, highly educated women who finished the secondary cycle or even their University studies.

Nevertheless, these behaviors require different interpretations. Among the less educated women, the fertility decline responds to recent transformations in reproductive behavior. This conclusion is based on the fact that changes can only be appreciated among the youngest cohorts, women in their adolescence and early youth. Among the highly educated women, on the contrary, the reduction is observed in all cohorts. Even the final descent among women who are in the last stages of their reproductive cycle (40-49) is already well below the replacement level. This indicates a long-term process of change that currently follows such trend.

These elements give space to the hypothesis that, shall these tendencies continue in the medium term -and in absence of immigration-, the country could not assure its intergenerational replacement and could suffer a process of population decline. The

recent decline of fertility among the less educated women, and the evidence of a long-term reduction in the fertility levels of the highly educated sectors give support to this idea.

Furthermore, our analysis has also shown an enlargement in the fertility gap between poorly and highly educated women during 1996-2006. This phenomenon is explained by the greater negative percentage change among the highly educated, which contributes to the deepening of the gap despite the reduction of fertility that also happens among the less educated.

We find evidence of the key impact of educational attainment on the levels and timing of retrospective fertility, with differences so important that imply the coexistence of three reproductive models in the society. The first model includes the less educated women, which do not finish primary school or have a failed entry to the first cycle of secondary studies. At the end of their reproductive cycle, these women have one more child than the national average. A second reproductive model refers to women who have finished the Secondary 1st cycle (6-8 years of education), with a parity level around the national average. Lastly, a third model is that of highly educated women, who finish the secondary cycle or at least start tertiary-level studies, who have well below replacement fertility levels.

If we placed these models in the context of the demographic transition, the first model would correspond to women with a reproductive behavior typical of the first demographic transition (stage of development *low-medium*), the second corresponds to women whose behavior is typical of the last stages of the demographic transition, and the third one to women whose reproduction is not sufficient for population replacement, a typical behavior of the second demographic transition.

In term, the fertility analysis according to the socio-economic condition confirms the existing gaps in reproductive behavior, between the sub-population who lives in underprivileged conditions and that which lives in non-poor households. Our analysis has shown the heterogeneity within the population that lives in poverty conditions, as well as the impact of the social stratification on fertility levels and on the age at first birth.

These analyses have shown that there are at least two reproductive models, according to the position in the social stratification system (similarly to the phenomenon described earlier for the educational attainment level). These two models correspond to different stages in the demographic transition process. Women who live in deprived households have *medium-high* levels of fertility (according to the CEPAL classification of the TFR), that correspond to the first demographic transition, while women who live in non-poor households have low levels of fertility (below population replacement) that are typical of the second demographic transition.

The reproductive behavior among women who live in different conditions of poverty reveals that the women in the most acute deprivation conditions (in a situation of low income and unmet basic needs) elevate the average of children per women among those in poor households. In addition, the evidence of a slightly higher level of cumulative parity among women in conditions of recent poverty (when compared to those in

conditions of inertial poverty) suggests that the income deprivation is more determining of the fertility levels than the basic needs deprivation.

On the other hand, the analysis of fertility levels by marital status has shown that, when society is considered as a whole, the most elevated cumulative parity is found among women in cohabiting unions, not among those who are married -an indicator that married women have a greater control of their reproduction-. Hence, cohabiting unions prove to be an important social institution for childbearing in the Uruguayan society - despite the fact that they only represent 45% of the unions- since their cumulative parity is the highest among women in unions.

These results –combined with other indicators of the second demographic transition in Uruguay-, show that legal marital unions are no longer the privileged context for childbearing. Notwithstanding, the position in the social stratification scale must be taken into consideration, since among women who live in non-poor households, those in formal marriages have the highest fertility levels. We have also found that there are several types of reproductive behavior among women in cohabiting unions. For those in deprived social conditions, cohabiting unions are associated to high fertility levels, a historical tendency in Latin America. For women in non-poor households, on the contrary, cohabiting unions are associated with low fertility levels, an indication that women who belong to these social sectors share value orientations that are characteristic of the second demographic transition. For them, marriage is no longer the privileged family arrangement for childbearing.

The analysis of motherhood age has also revealed some important factors. Firstly, the postponement in the beginning of childbearing is confirmed: the younger the generation, the more the age at first birth increases, a phenomenon that can be interpreted as an improvement in women's wellbeing.

Finally, the educational attainment level proves to be a determining factor for reproductive behavior, since the most important variations in the age at first birth are found when the level of education is considered. Our results confirm that the higher the level of education, the smaller the risk of having a first child or, in other words, the longer childbearing is postponed. Moreover, adolescent motherhood is a much more intense phenomenon among the less educated.

All in all, our research verifies the persistence of different reproductive models in Uruguay, that are associated with behaviors that are typical of the first and the second demographic transition. While some social sectors show behaviors typical of the second demographic transition –especially regarding low fertility levels, postponement of childbearing and high proportion of births outside marriage-, other social sectors have not yet completed the first demographic transition. Such is the case of the less educated women who live in deprived social conditions.

Nevertheless, the important decline of retrospective fertility and the postponement of childbearing among the youngest women from all social sectors -particularly within the less educated-, suggest a slow process of fertility reduction among women who belong to the most deprived social sectors. At the same time, this process has become even more important among highly educated women from the upper positions of the social scale.

This scenario enables to hypothesize there will be an even greater decline of the total fertility in the medium-term future. This is based on the fact that it is the youngest, less-educated women from the interior of the country who have the greatest potential for fertility reduction. Even if we found evidence that they still have elevated levels of fertility, they show a tendency to control their reproduction, which implies that there is still space for fertility reduction.

However, the speed at which these transformations may occur will depend on the ability of the educational system to promote a greater inclusion and retention of the youth. A greater social inclusion of the youth -together with better access to sexual and reproductive health programs-, as well as better living conditions for the population in deprived social conditions, are all key factors to the evolution of fertility in the near future.

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