Women migrated from Veneto in the 1950s: Entry into motherhood

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1. Introduction

Migrations are an important factor in the population history of the North-East Italian region of Veneto. Massive migratory movements drove thousand of people from Veneto towards foreign countries even since last twenty years of the nineteenth century (Lazzarini, 1981). Afterwards, migrations became most of all internal migrations (Sori, 1979): the ratio between international and internal flows decreased, indeed, considerably after the First World War (Miani, 1970). Internal migrations had an important role in the second half of the twentieth century, too: in the 1950s Veneto became the area characterized by the greatest interregional flow towards Northwestern Italy. This period was indeed characterized by the prosperity of the areas of the "industrial triangle" of Lombardia-Piemonte-Liguria, contrasted with continuing hardship and poverty in rural areas (as those of Veneto), which drove people to move. Beginning from the 1990s, Veneto is marked by immigration flow of foreigners coming from developing or Eastern European countries. The latter phenomenon is strongly growing, whereas internal migration is almost concluded[1].

In a previous paper, Veneto internal migration stream is analyzed using data of the 1981 and 1991 population censuses samples (Rossi and Meggiolaro, 2006). It focused on migrants born in Veneto and living in two North-West Italian regions (Piemonte and Lombardia, where immigrants prevalently moved in the 1950s) at the date of the census. That study showed that some characteristics of migrants from Veneto (the disadvantaged social condition and the greater participation in the labor market) are typical of the selection which occurs when people move for economic reasons (migration flows of this period are indeed those of population attracted by the richer industrial areas of the "industrial triangle", see Sori, 1979; Rossi and Meggiolaro, 2006; Minoia, 2007). Other immigrants in the same regions, but moved from Southern Italy, have similar characteristics, even if some aspects are slightly different, due to the place of origin traditions. Other characteristics (as the greater female participation in the labor market) look like those of the destination population, so that they seem to be assimilated from the host society, giving up those of the origin population. Some of these aspects are probably associated with the need of adapting family life style to the economic systems of the destination community. For example, fertility may be limited both by the greater women participation in the labor market and by the unavailability of a

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[1] While recent immigration flow of foreigners is often considered, there are only few studies about migrations from Veneto in the period between 1950 and 1970 (Vian, 1974 and Rossi and Meggiolaro, 2006).

family network to nurse children, which is typical of many areas in Veneto. In this paper, the relationship between fertility and migration is analyzed thoroughly, using data of the 1981 population census. In particular, the birth of the first child is studied considering a specific group of women: immigrants from Veneto in Piemonte and Lombardia, aged 30-34 at the date of the 1981 population census. The measure of migration is obtained by the discrepancy between the place of birth (Veneto) and the place of residence as reported in the census (Piemonte and Lombardia). This definition of migration may create a great problem in the analysis as, in this way, we do not have information on whether births come before or after migration for any particular woman. This issue may strongly affects the interpretation of the results. In fact, the choice of the women of that particular age class allows to obtain clearly interpretable results. Considering that the greater migration flow from Veneto was in the 1950s (as the following paragraph describes), it may be supposed indeed that (at least most of) this specific group of women have emigrated in that period, that is when they were not in reproductive age. Women aged 30-34 at the date of the 1981 population census belong approximately, indeed, to the birth cohort of 1946-1951 and they were 0-4 in the 1951 and 10-14 in the 1961. Moreover, even considering the small number of them who emigrated in the first years of the 1960s, it may be supposed that they probably had no children before the migration: they were indeed 15-19 in 1966 and the mean age at the first child in Italy for those cohorts was 24.9 (Istat, 1997). In this way, the birth of the first child for this specific group of women may be supposed to come after migration. Moreover, as it will be noted at the end of paragraph 6.3, considering women aged 30-34 at the date of the 1981 census leads to have an homogeneous population which is in the same phase of its life cycle.

The birth of the first child is examined with event history analysis; this allows to control the joint effect of more than one predictors, describing completely and properly the entry into motherhood for the population of interest.

Using event history analysis techniques starting from census data is possible thanks to a quite innovative approach. It is associated to the proper use of census (or, in general, current status) data, which provides information about status, to know events. This approach matches own children method with event history analysis. So it makes the most of census data and this allows to have further and richer information than that usually available with census data source.

The work is organized as follows. Section 2 gives a brief description of the internal migration from Veneto. Section 3 presents some hypotheses and some results on the relationships between fertility and geographical mobility. Sections 4 describes some characteristics of the female population of interest, comparing them with those of other women in the same age (immigrants in Piemonte and Lombardia, but moved from the South, those living in the destination regions, and those living in Veneto). Some methodological issues are considered in section 5: it describes the approach of using current status data to study events through the own-children method (which is briefly presented in section 6). Section 7 examines the birth of the first child through a descriptive analysis and through an event history model (piecewise constant exponential model). Lastly, section 8 contains some concluding remarks.

2. Veneto internal migrations

After the Second World War, Veneto was marked out by a strong migration towards the "industrial triangle", especially Piemonte and Lombardia, and it became a sort of "labour force tank of the industrial north-western areas" due to its economic conditions (Sori, 1979). Like other north-eastern regions, in that period Veneto was indeed characterized by the prevailing importance of agricultural activities and by the only recent development of industrial activities; whereas, in north-western regions structural foundations for the productive take-off and for the subsequent economic growth phase had already started up and had become established.

A measure of the migration phenomenon from Veneto may be obtained examining registered and cancelled people in Veneto, from and towards other regions and from and towards foreign countries, according to population registry source, for some periods: a negative balance of migration of about 280,000 people is observed between 1955 and 1971 (most of all in the period till 1961).

Another important data source to measure migration is the population census[2]. Comparing information about the place of birth and about the place of residence at the time of the census, many people born in Veneto and living in another Italian region at the dates of the censuses[3] may be identified: they moved in the past and they did not return to the origin region. At the date of the 1951 population census, about 635,000 people born in Veneto were living in another Italian region. This confirms the presence of firm immigration flows. In the following decade, they were about 310,000 more. They slightly increased in 1971, and from 1981 they decreased.

So, both data sources (population registry and census) show that the massive immigration flow from Veneto was in the 1950s.

Among people born in Veneto and living in 1951 in other Italian regions, nearly 60% was in Piemonte and Lombardia, whereas the proportions in other regions were negligible (apart from neighbouring ones, for geographical reasons, and Lazio). In 1961, in Piemonte and Lombardia further immigrants from Veneto were about 268,000 (+74%): in these two regions there were altogether 630,000 immigrants from Veneto. In the period between 1961 and 1971 the most of immigrants from Veneto moved into Piemonte and Lombardia, too. In subsequent censuses the phenomenon decreased considerably, but people from Veneto living in these two regions stayed at near two-thirds of immigrants from Veneto in other Italian regions.

This paper focuses on people born in Veneto living in Piemonte and Lombardia at the date of the 1981 population census. In particular, fertility is studied, examining the birth of the first child in a specific group of women moved from Veneto, those aged 30-34 at the date of the 1981 census.

3. Fertility and migration

The analysis of the connection between fertility and migration has a long history in demography. Bearing in mind that the reference is the international literature and that the extension to internal migrations is not always simplex, some hypotheses are here considered.

The "adaption" hypothesis (Goldstein and Goldstein, 1981; Stephen and Bean, 1992) predicts a gradual assimilation of migrants to fertility norms and behaviour of the destination community.

Second, the "disruption" hypothesis considers only a temporary effect of migration, which depresses fertility in the first period after the move, because of spousal separation or the settling-in process (Carlson, 1985).

Lastly, the literature refers to a "selection" hypothesis (Hervitz, 1985; Kahn, 1994), according to which migrants are not a random sample of population at their place of origin. Since migrants typically constitute a selected group in terms of age, education, marital status, or occupation, among others, they should be expected to possess fertility preferences different form those of the overall population at origin. Only if relevant socio-economic and demographic characteristics that distinguish migrants from stayers are controlled, no difference is expected between migrants and non-migrants.

Literature has mainly tested these three hypotheses with respect to the urbanisation process, both in developing and industrialised countries, focusing on urban and rural differentials.

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[2] Population registers data on movements direction may be vitiated by various drawbacks, whereas census points out more probably the final destination of immigrants. For a review of the census source for migrations see, for exa-mple, Corgeau, 1988, and for Italy, Rossi and Clerici, 1988.

[3] Whereas people living abroad can not been identified.

Few studies consider Italy. Some researches used data of the 1981 population census (Clerici, 1988 and 1989) with reference to a large city in Lombardia, Milan. The first study (Clerici, 1988) shows that total fertility levels are higher among immigrant women (living in Milan and born outside the region) than among "natives" (women born in Lombardia and living in Milan at the date of the census). Women of "old immigration" (women born outside the region, but who have already lived in Lombardia in 1976) are instead assimilating fertility levels of natives. The second study (Clerici, 1989) shows that "recently immigrant" women (the residence 5 years before the census is considered) present lower fertility levels and higher mean ages at birth than "natives". Lastly, an analysis with more recent data (Gabrielli *et al.*, 2007) finds considerable evidence for selection hypothesis, considering recent interregional migrants. Anyway, there are not studies on the relationship between migration and fertility referring to the specific migration flow from Veneto to North-West regions characterizing the 1950s.

4. Comparison among populations: some features

Since 1981, ISTAT (Italian National Institute of Statistics) created files with samples of census and placed them at users' disposal. This modality of information diffusion turned out to be important for the aim of this paper. It allows to identify women born in Veneto and living in Piemonte and Lombardia at the time of the census, and to analyse their fertility with own-children method. In fact, own-children method can be applied only to the 1981 population census, since a 2% sample of households was provided; whereas available sample of the 1991 census is an (1%) individuals sample and own-children method can not be applied (see note 7).

In this study, women aged 30-34 (at the date of the 1981 census) who moved from Veneto are considered. They are compared with other three groups of women of the same age class. The first group is composed by women living in Veneto at the date of the census and born there (later on, they are called "natives" of Veneto). The second group considers women living in Piemonte and Lombardia (in 1981) and born in those regions (they are called also "natives" of Piemonte and Lombardia). The third group is another population of immigrant women: those living in Piemonte and Lombardia, born in southern and islands regions. Immigrants from *Mezzogiorno*[4] have always represented a no negligible part of migrations towards North-West (Golini, 1974); the flow from some regions (for example from Puglia and Sicilia) was comparable with that from Veneto. Unlike migration from Veneto, migratory movements from *Mezzogiorno* to North-West regions are more recent: they have indeed continued also in the 1980s (Livi Bacci et al., 1996; Pugliese, 2002). Table 1 reports people living in Piemonte and Lombardia, born in Veneto and in *Mezzogiorno*.

Table 1. *People living in Piemonte and Lombardia, born in Veneto and in regions of the South and of the Islands of Italy. 1981 Census.*

Birth regions	1981
Veneto	563,606
Mezzogiorno	1749,826
Total living in Piemonte and Lombardia (P.L.)	13483,036
Born in Veneto % on total living in P.L.	*4.2*
Born in Mezzogiorno % on total living in P.L.	*13.0*

Source: ISTAT, 1981 population census.

[4] In this study, population of interest is called "immigrants from Veneto"; immigrants from southern regions (Abruzzo, Molise, Campania, Puglia, Basilicata and Calabria) and from Islands (Sicilia and Sardegna) are called "immigrants from *Mezzogiorno*".

Using sample data[5], women aged 30-34 of these four groups are considered. Some socio-demographic and socio-economic characteristics are here examined: marital status, education, and working condition at the date of the census and 5 years before.

As regards marital status (table 2), most of women are married. Unmarried women are about 10%; proportions of separated or divorced women are about 2%, and the percentage of widows is even lower. Some differences are observed according to the population: immigrants, particularly those moved from *Mezzogiorno*, have higher percentages of married women; whereas, higher proportions of unmarried women are observed among natives of Piemonte and Lombardia. Afterwards, attention focuses only on married women: in a context like the Italian one, births occur especially within marriage (Castiglioni, 1994), and this is particularly true in the period considered in this study.

Table 2. *Marital status of women aged 30-34 in four compared populations.*

Population	Unmarried	Married	Legally separated or divorced	Widowed	Total =100
Immigrants from Veneto	7.6	89.5	2.5	0.4	474
Immigrants from *Mezzogiorno*	6.3	90.4	2.4	0.9	2,280
Natives of Piemonte and Lombardia	11.7	84.8	2.8	0.7	6,614
Natives of Veneto	9.8	88.0	1.5	0.7	2,704
Total	10.1	86.8	2.4	0.7	12,072

Educational level is expressed into three categories: high (degree or high school diploma), middle (junior high school diploma) and low. Table 3 shows that the lowest educational levels are found among immigrants from *Mezzogiorno*; the highest levels are observed among women natives of Piemonte and Lombardia. Women moved from Veneto have middle-low educational level, and similar results are noted for natives of Veneto.

Table 3. *Educational level of women aged 30-34 in four compared populations.*

Population	High	Middle	Low	Total
Immigrants from Veneto	13.7	32.3	54.0	100
Immigrants from *Mezzogiorno*	16.1	21.3	62.6	100
Natives of Piemonte and Lombardia	25.2	35.6	39.2	100
Natives of Veneto	16.2	26.2	57.6	100
Total	21.1	30.6	48.3	100

As regards working condition, both that declared at the time of the census (October, 1981), and that 5 years before (October, 1976) are considered. Table 4 shows, on the whole, an increase in the proportions of working women from 1976 to 1981. The increase is stronger among immigrants from Veneto. Women moved from Veneto present very high female occupational rates: the rates are even higher than those of women living in Piemonte and Lombardia. Lower percentages of workers are observed among natives of Veneto and among immigrants from *Mezzogiorno*.

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[5] From now on, data come from the 2% random sample of the 1981 population census.

Table 4. *Percentage of women aged 30-34 in four compared populations, who work in 1976 and in 1981.*

Population	1976	1981
Immigrants from Veneto	53.4	59.3
Immigrants from *Mezzogiorno*	45.9	52.7
Natives of Piemonte and Lombardia	58.3	58.7
Natives of Veneto	43.5	45.4
Total	52.5	54.6

5. Survival analysis with current status data

One common variable of interest in many areas of demographic research is the age at which a certain event occurs, for example, age at first sexual intercourse, first marriage or first birth. There are many examples in other fields where age at which a "milestone" occurs is studied. The methods of survival analysis can be used to study the relationship between explanatory variables and the length of time or duration between one event and a subsequent event.

Data on the age at which a milestone occurs are usually collected retrospectively by survey or census. Unfortunately, retrospective age data may contain serious reporting errors. Rather than base an analysis on unreliable data of reported age at the time of the event, it is preferred to refer to reliable current status data, that is to the occurrence or non-occurrence of the event at the time of the survey or census. Current status data are generally considered more reliable than retrospective reports of age or duration, because respondents can more accurately report their current state than recall the time at which some event occurred in the past[6]. If the milestone (in this study, the first birth) has been reached, we have incomplete information on when this occurred. On the other hand, we do not know when it will be reached (if ever) for those respondents who have not achieved the milestone at the time of the survey or the census. Current status data thus correspond to the extreme situation where all the survival time data are either right-censored or left-censored.

The extension of event history analysis models for use in conjunction with current status data in demography was initially proposed by Diamond *et al*. (1986); such a use, however, is common in several other fields (for examples in epidemiological studies, see Jewell and van der Laan, 2002 and Jewell and Shiboski, 1990). Some studies consider, in particular, census data (see, for example, Rosina, 2006).

This paper uses survival analysis model with census data. Data about events are obtained using own children method (see next section, 6.1) which allows to derive the birth of the first child using census data. This is an innovative approach which allows to make the most of census data.

6. The birth of the first child

6.1. The own children method

Women's reproductive biography of the population of interest is obtained using the own children method (Cho *et al*., 1986).

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[6] For a review of the advantages and disadvantages of current status vs. retrospective data see Diamond and McDonald, 1992.

The own children method is a reverse-survival technique for estimating age-specific birth rates for years previous to a census or household survey[7]. It relies upon establishing an accurate link between children and their mothers[8]. The protocol of the method allocates children to their plausible mother based upon several "rules" as described briefly below.

1. Clearly, children must be residing in the same household as their mother. This generally entails that the age at the first birth assigned to mothers is likely to be upward biased, in particular for women of the older cohorts.
2. Some age constraints must be verified: a potential mother has to be more than 15 years older than the child and no more than 45 years older than the child. Having the first child outside these ranges is relatively rare.
3. The foundation of the allocation procedure rests upon the "relationship to the household head" coding scheme that is included in most household surveys and in the census. This coding scheme provides information on how each person in the household is related to the household head, thus allowing us to make inferences about how non-heads, in a given household, may be related to one another.

Mothers and children might be mismatched in some cases. This might happen, for example, when a woman has divorced and remarried and she is living with the children of the "new" husband. Other limitations rise when women do not live with their children: for example, women might have had a child (outside marriage) who has been given up for adoption or who is living with relatives. Anyway, these situations are not common among the population of interest. The percentages of separated or divorced women are negligible (table 2) and fertility outside marriage is not common, especially in the period of interest.

In this paper, women aged 30-34 and children under 15 are considered. Women aged 30-34 have probably already had their first child (who is not more than 15). Moreover, children are highly unlikely to leave the parental family before 15; in this way, potential bias due to children leaving home is removed.

6.2. Descriptive analysis

Results obtained with own children method are here examined. As expected, among unmarried women only 7% has had the first child by the census[9], then, as mentioned above, they are excluded from the analysis. The same applies to divorced, separated and widowed women, who, even though they have already had their first child in higher percentages than unmarried women, turned out to be very few (see table 2).

Table 5 reports the percentages of women who have already had their first child in the different groups of women. There are not great differences according to the groups. Immigrants from *Mezzogiorno* have the highest percentages, natives of Veneto have the lowest proportions.

Examining the timing with which women had their first child is more interesting. Survival function (at first birth) is estimated non-parametrically with the life-table method. This method enables the computation of nonparametric estimates of the survival functions[10]. They describe the distribution of the considered populations as regards the transition from an origin state to a destination state (in this case the birth of the first child and so the transition to motherhood), bearing in mind both the

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[7] Individual data from census must be arranged in households; this is why only the 1981 2% sample of households is used here.

[8] Infant mortality, such as mortality of mothers, is neglected in this analysis, but this is not a great limitation since it can be supposed quite low in the period of interest. Anyway, similar levels of mortality may be supposed for the considered populations.

[9] In fact, they might have had a child who has been given up for adoption, or who is living with other relatives.

[10] Survival functions and graphics are obtained using SAS procedures.

time interval between entry to and exit from a specific state, and the presence of censored observations. The approach is completely descriptive, and the lines represented in the following show the estimates of the proportions of women who have not yet had their first child at specific durations. To define the duration, the age of 15 years old is considered as the starting time (origin event of risk exposition). The age of the woman at the first birth is obtained from the age of the child at the time of the census. Reported life-tables show the importance of some socio-demographic characteristics to describe the transition to motherhood.

Table 5. *Percentage of women aged 30-34 in four compared populations, who have already had the first child at the date of the 1981 population census.*

Population	%	Total
Immigrants from Veneto	89.2	424
Immigrants from *Mezzogiorno*	92.9	2,060
Natives of Piemonte and Lombardia	88.1	5,603
Natives of Veneto	87.4	2,379
Total	88.9	10,466

Lines represented in figure 1 show that the timing of the event is quite different according to the four considered groups. Women moved from *Mezzogiorno*[11] experience earlier (and with a greater intensity, as seen also in table 5) the event: at every time point they have higher proportions of women who have already had their first child. Women moved from Veneto show intermediate values. Natives of Piemonte and Lombardia and of Veneto have quite similar behaviour, particularly at greater durations: they both present lower values compared with the other groups of women. For example, considering five years of risk exposition (that is when women are 20 years), about 15% of women moved from *Mezzogiorno* has already experienced the entry into motherhood. The percentage is about 10% among immigrants from Veneto; value is nearly 8% considering natives of destination areas and the percentage decreases under 5% among women living in Veneto. After the following five years (that is after 10 years of risk exposition), behaviour of these two last groups is very similar (nearly 50% has already become mother), whereas among immigrants the percentages are higher (more than 55% among immigrants from Veneto and 60% among women from *Mezzogiorno*).

Another interesting aspect concerns the trend according to educational level[12] (figure 2). On the whole, a delay and a lower level of fertility coincide with an higher education (anyway, the birth of the first child is considered, and so it is not a final fertility). Percentages of women who have already had their first child are higher at every duration for women with a middle and particularly with a low education. The trend is quite similar in the four examined populations, even if some differences are noted. As regards women moved from *Mezzogiorno*, the distance between women with degree or high school diploma and those with middle-low level is more accentuated than in the other populations. Less differentiated behaviour according to educational level is noted for women natives of Piemonte and Lombardia. The trend is similar to that observed for immigrants from Veneto: the proportion of less educated women who have already had their first child are lower

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[11] In fact, we do not know when women moved from *Mezzogiorno*. Migration flow from *Mezzogiorno* is more recent respect to that from Veneto (as describes in paragraph 4). So considerations made for women aged 30-34 at the 1981 census and emigrated from Veneto most of all in the 1950s can not be applied to women moved from *Mezzogiorno*. So, no information to identify whether the first birth for women moved from the South came before or after the migration is available.

[12] Education may be considered invariant for the population of interest, as it is invariant after the scholar age. Education is expressed into three categories described in section 4.

compared with that of middle educated women. The last graph of figure 2 shows the delay in the birth of the first child for women natives of Veneto.

Figure. 1. *Birth of the first child for the four considered populations: proportions of survivors to the event "first birth".*
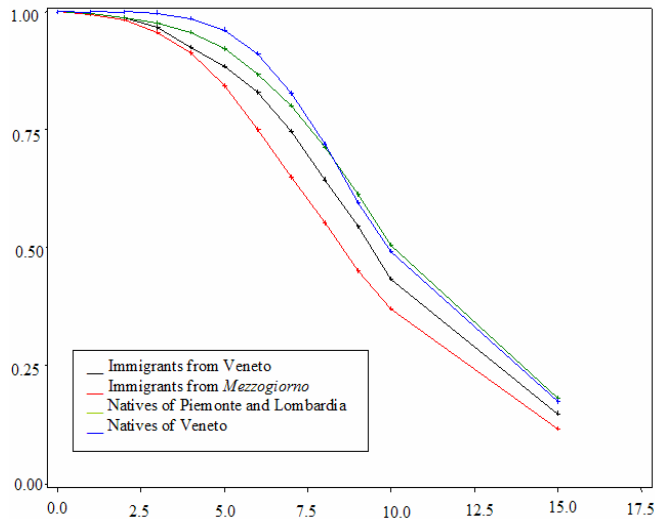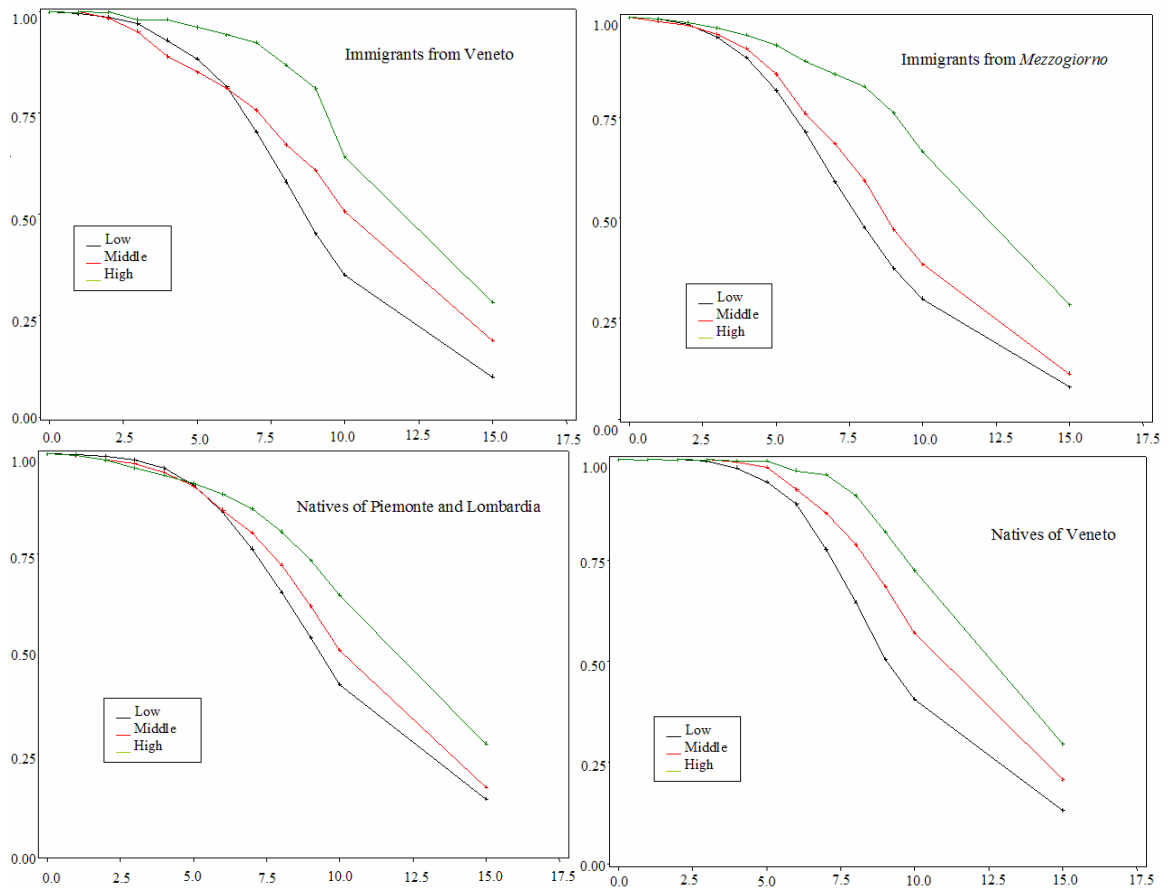

Figure 2. *Birth of the first child according to educational level: proportions of survivors to the event "first birth" for the four considered populations.*

As regards working condition, the exam of the birth of the first child tells nothing about the relationships between fertility and employment before 1981, if situation in 1981 is considered. A woman's reproductive history is correctly interpreted as a fertility process associated to a woman with those particular occupational characteristics at the end of the period of interest, but she may

have had different working experiences. Similar considerations may be made for situation in 1976. Anyway, here and below, women's working condition in 1976 is considered: this condition may be closer to the birth of the first child, respect with the condition in 1981. It is clear that the ideal situation would be having time varying information, but this is not possible with census data. Graphs of figure 3 show that, generally, excluding earlier durations, working women have higher risk of having the first child (but the effect of others variables is not controlled for). As found with educational level, different trends are observed according to the four considered populations. Great differences between working and not working women are observed among women natives of Piemonte and Lombardia and of Veneto. Whereas immigrants from Veneto show different trends between working and not working women only in long durations, immigrants from *Mezzogiorno* show differences also in earlier durations.

Figure 3. *Birth of the first child according to working condition in 1976: proportions of survivors to the event "first birth" for the four considered populations.*
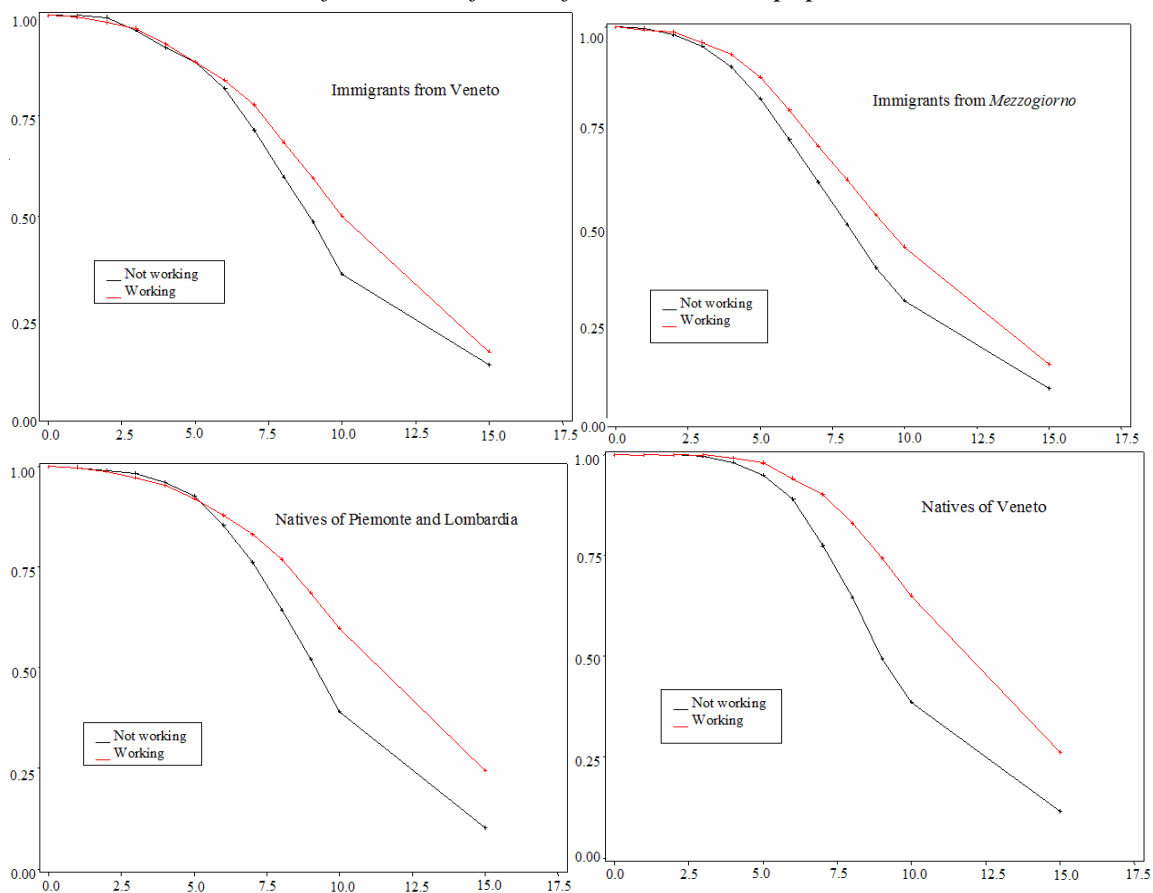
6.3. The determinants of the birth of the first child

Nonparametric methods, as life table method described above, allow a clear interpretation of the level of association between response, in this case the probability of having the first child, and one covariate. To keep into account the joint effect of more than one predictor, an analysis which can point out the relations between survivor functions and more than one explicative variables must be considered. The use of transition rate models makes it possible to study or control for a great number of effects without significantly increasing the number of parameters to be estimated.

Regression model used here is the piecewise constant exponential model[13] (Blossfeld and Rohwer, 2002). It assumes the constancy of the risk within some time intervals, measured, in this case, in years elapsed since the age of beginning of risk exposure (the age of 15 years old). In this way, the time dependence of the probability of having a child, which is supposed to increase with age, is taken into account. The response variable is the risk of having the first child for women aged 30-34. Women who have not yet experienced the event of interest are censored at the time of the census. The model describing the risk $h(t)$ of having the first child may be written as:

$$h(t) = \exp\{\alpha_l + \beta X\},$$

where α_l is a constant coefficient associated with the lth time period; X is a (row) vector of covariates, and β is an associated vector of coefficients assumed not to vary across time periods. The duration variable is split into seven time intervals (see table 6): 0-1st year, 1st – 2nd year, 2nd – 3rd year, 4th –5th year, 6th – 8th year, 9th – 13th year, and 14th year and later. They measure the years elapsed since the age of 15 years old (a woman's age at the first birth and consequently the duration variable are obtained from the age of the child and of the woman at the census). Within each of these seven time intervals, transition rates are assumed to be constant, but transition rates are allowed to vary across the intervals. So, only a baseline rate, given by period-specific constants, can vary across time periods but the covariates have the same (proportional) effects in each period. A model with the main single effects and some interaction effects is chosen, avoiding higher order interactions for a simpler results interpretation.

Results[14] reported in table 6 confirm what noted with descriptive analysis.

Coefficients related to time intervals show, as expected, that the effect of the time from exposition to the risk (the age of 15 years old) on the probability of having the first child is positive (numbers increase considering greater duration); the risk is greater between 9th and 13th years (that is when women are 24-28).

As observed with the descriptive analysis, immigrants from *Mezzogiorno* have a greater risk of having the first child in comparison with immigrants from Veneto (reference category), whereas the risk decreases for women natives of Veneto. Women natives of Piemonte and Lombardia do not seem to have a significantly different risk compared with immigrants from Veneto.

Coefficients related to human capital variables (education and working situation) are in the same direction: working women and women with an higher educational level have lower risk of having the first child. The relationship among fertility, women's participation in the labour market and education is clear; according to it, women with a job and a middle-high education invest less in family and then they are less prone to have the first child (see, for example, Blossfeld and De Rose, 1992). Coefficients obtained for women moved from *Mezzogiorno* are of particular interest. For them, the effect of education is even stronger (interaction term): women who invested in human capital (with an high education) have even a lower[15] probability to have the first child. An opposite situation is found among immigrants from *Mezzogiorno* who work: the effect is still negative, but it is reduced in comparison with the other populations[16].

Considering covariates on education and working situation, the potential effect of selection is taken into account. In fact, result showing that immigrants from *Mezzogiorno* enter earlier into motherhood respect to the other populations is not clearly interpretable. Actually, no information is available to identify if this is an effect of migration or instead if this result refers to children born

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[13] The model is estimated using TDA (Transition Data Analysis) software (available at http://www.stat.ruhr-uni-bochum.de/tda.html).

[14] Covariates included in the model are those describing women's socio-demographic and socio-economic characteristics. Other variables which may be important, for example religious participation or variables connected with women's social network, are not available with census data.

[15] Compared with the other populations.

[16] The effect of the interaction term (0.18) reduces the negative effect for working women (-0.45) from *Mezzogiorno*.

before migration. Instead, the interpretation as regards immigrants from Veneto is clearer, since for them, as observed in the introduction, the birth of the first child comes after migration. Results show that immigrants from Veneto enter later into motherhood compared with the origin population, but their fertility timing is very similar to that of the destination population. So the hypothesis of adaption and assimilation of behaviour is here confirmed.

Actually, the fact that the place of birth is the identification variable of the interest population must be taken into account. This leads to identify an event of territorial mobility within a time interval with length equal to the age of the woman. Nothing is known about potential migrations achieved between the birth and the date of the census (including return migrations), neither about the time spent from the last possible movement. Results obtained in this paper may be the outcome of the reproductive behaviour of women moved in Piemonte and Lombardia in different phases of their life cycle, with a different length of the movement and so of the time available to adapt to the new context and to take its customs. In fact, considering women aged 30-34 keeps into account, at least partly, these aspects, since women in the same phase of life cycle and with a similar length of the movement are studied.

Table 6. *Determinants of the risk of having the first child (women aged 30-34); piecewise constant exponential model.*

	Effect	Significance
Period 1: < 1 year	-6.37	***
Period 2: 1 year	-4.61	***
Period 3: between 2 and 3 years	-3.65	***
Period 4: between 4 and 5 years	-2.53	***
Period 5: between 6 and 8 years	-1.61	***
Period 6: between 9 and 13 years	-1.01	***
Period 7: 14 years and more	-1.13	***
Population (ref: immigrants from Veneto)		
Immigrants from Mezzogiorno	0.188	***
Natives of Piemonte and Lombardia	-0.07	
Natives of Veneto	-0.16	***
Education in 1981 (ref:low)		
High	-0.41	***
Middle	-0.12	***
Working condition in 1976 (rif: not working)		
Working	-0.45	***
Interaction		
*Working in 1976 * immigrants from Mezzogiorno*	0.18	***
*High education * immigrants from Mezzogiorno*	-0.39	***
*Middle education * immigrants from Mezzogiorno*	-0.09	

* p<.10, ** p<.05, *** p<.01

7. Conclusions

Current status data are particular types of event history data, which correspond to the extreme situation in which no observation is complete. This paper considers an extended approach which allows to use current status data for survival and event history analysis models. With an innovative approach, a woman's reproductive biography is obtained with own children method starting from census data. In this way, richer information than that usually available with census data, are obtained. In fact, the limitations of own children method should keep into account. Its application is not always convenient. Anyway, in the context studied in this paper, characterized by low fertility outside marriage and by low marital instability, this approach is very interesting and useful.

Let consider some research questions of this paper.

How can we define the relationship between fertility and territorial mobility? Is it a situation of adaption to fertility of the host society? Or instead a disruption is observed? And is this disruption due to the selection of immigrants? And if this, if we could keep into account the socio-economic characteristics creating a selection of immigrants, can we find that they have not a different reproductive behaviour than those who remain at origin?

The use of the 2% sample of the 1981 population census (with the matching between own children method and survival analysis), allows to answer, at least partly, to these questions. In particular, the birth of the first child is considered, for women aged 30-34 (at the date of the census) born in Veneto and living in 1981 in Piemonte and Lombardia (two Italian regions which, in the last post-war period, became the greatest attraction of migration). Population of interest is then compared with another group of immigrant (women from *Mezzogiorno*) living in Piemonte and Lombardia in 1981 and with natives of destination regions and of Veneto.

Descriptive analysis shows that the timing of the birth of the first child is quite different according to the groups of women: women who experience earlier the event are those living in Piemonte and Lombardia and born in *Mezzogiorno*; they are followed by women moved from Veneto. Whereas there is greater waiting time to the first birth for women natives of Piemonte and Lombardia and of Veneto.

In fact, descriptive methods allow a clear interpretation of the level of association between the probability to have the first child and only one covariate. To remove the spurious effect of other factors, a model which takes into account the joint effect of more than one predictors is considered.

A piecewise constant exponential model is used to control also the time trend of the probability of having a child, which is supposed to be increasing with age. In this way, using covariates about education and working condition, potential selection effect is controlled for.

Coefficients related to human capital are important and they show the relation connecting fertility, women's participation in the labour market and education: women with a job and a middle-high educational level invest less in family and then they are less prone to have the first child.

As regards the relationship between migration and fertility, immigrants from *Mezzogiorno* show an earlier entry into motherhood respect to other populations. In fact, this result is not clearly interpretable since no information, that would allow to identify whether the first birth came before or after the migration, is available. Whereas, there are enough indications to suppose that women moved from Veneto have their first child after migration. Results of the event history analysis show for them a sort of adaption and assimilation of reproductive models of Piemonte and Lombardia. These immigrants show, indeed, a later entry into motherhood respect to the origin population: their behaviour is very similar to that of destination population.

It is difficult understanding from available data in what way these aspects may characterize also final fertility; future research may analyse in depth this aspect.

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