

**A DELAYED AND SLOW FERTILITY TRANSITION.
THE EXPERIENCE OF ALGHERO, SARDINIA (1866-1935)**

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1. Introduction

This paper aims to analyse the evolution of fertility in the Sardinian town of Alghero, between the second half of the 19th century and the first decades of the 20th century.

The years examined were characterised by the beginning and the gradual diffusion to the whole country of the demographic transition process. The path and timing of this process in Italy were territorially diversified and relevant differences have been found even inside the same regional areas. The Italian case was further complicated by changes in political divisions that do not always overlap with traditional historical and sub-regional demographic patterns (Breschi, Derosas, Manfredini, Rettaroli 2010). In any case, fertility was one of the main factors explaining this territorial variation.

At the aggregate level, Sardinian fertility transition path stands out in the Italian process. According to the Princeton project results, Sardinia has been the Italian region with the slowest and most gradual fertility transition (Livi Bacci 1977). Notwithstanding the initial levels, which were lower in comparison with those recorded in the other Southern regions, in the 1950s, fertility levels in the island were the highest in the country: TFR was slightly lower than 4 children per woman while, for the country, rates ranged on average around 2.3 and in the south around 3.2 (Sorvillo, Terra Abrami 1993; Istat 1997). In clear contrast with its recent previous reproductive history, today Sardinia is the Italian region with the lowest fertility level (Santini 2008) as consequence of a dramatic drop in the TFR starting from the 1970s.

Moreover, even though Sardinia is situated at the heart of the Mediterranean, it is paradoxically the least “Mediterranean” of the Italian regions (Viazzo 2003). Its system of family formation and reproductive behaviour does not fit any of the theories advocated in the literature (Wall et al. 1983). The Mediterranean model par excellence – a joint patrilocal household with early female age at marriage and high fertility – is far distant from the model prevailing in Sardinia, with late age at marriage (particularly for men) and medium-high permanent male and female celibacy (Rettaroli, 1990; Cocchi et al., 1996).

In particular, in the island, at least on the basis of the marriage rate trend, marriage dynamics seems to slow down at the turn of the 19th Century. This evolution is confirmed by the corresponding trend observed in the amount of fecund life spent in marital condition which increases until the 1950s: from 42% in 1881 to 47% in 1931 and 1936 (De Santis, Rettaroli 2008). This trend which is found only in the island, was the result of a permanent female celibacy which was stable between 12 and 13% and a growing female age at marriage (from 23 to 26 years).

This result confirms what was observed, during the pre-transitional period, by Corridore (1902): the Sardinian population would have made extensive use of the Malthusian preventive check, but – according to a more rare and original pattern – the preventive check would have been extensively used also later from the end of the 19th century to the mid-20th century. In presence of a significant and sustained increase in the average age at marriage for both sexes, in fact, a fundamental stability in marital fertility was observed (Breschi 2012).

The main aim of this article is to reconstruct the patterns and factors of marital fertility in Alghero, a town in the north of Sardinia, focusing on social differences and evidences of deliberate control. Our starting point is a data-set that we have reconstructed on the basis of the civil records of birth, marriage and death relative to the years 1866-1935. The sources adopted and the main characteristics of our data-set are described in the third section, while in the next section we briefly discuss Alghero socio-economic system.

The analysis of fertility, carried out with a predominantly descriptive approach, is articulated in three short sections. In the fourth paragraph we shall give a general picture in terms of fertility trend and patterns, then one our attention will be mainly dedicated to socio-economic differences in fertility. Finally, in the final section we shall try do detect any signs of parity-specific control.

2. The study area

Alghero is a large costal town in North-western Sardinia that, before national unification, constituted, along with the regions of Piedmont and Liguria, the Kingdom of Sardinia. According to the first Italian Census (1861) Alghero, with its 8,831 inhabitants, was the fourth municipality in the island. The municipal territory includes, besides the urban centre, a large flat area – called Nurra –, which was almost inhabited and marshy until the 1920-30's.

The history of Alghero was largely conditioned by its role as a port and a military base to protect the north-west of the island (Principe 1983). In particular, until the eve of Unification (1861), the construction of new houses was impossible outside the walls that encircled the entire town on both sides (land and sea). This fact also determined a relevant housing shortage and, therefore, significant discomfort and, above all, poor sanitary conditions, aggravated by a sudden and steady growth of the population from the late 18th century.

The Board of Health, established in the town, noted on several occasions, during the first three decades after national unification, the health problems of the population and the

frequent increase in mortality rates, the causes of which were identified in the “poverty of the people” and in “narrow houses within the narrow circle of the walls that prevent the free circulation of air, which leads to many diseases, especially amongst the children”. Alghero population health status was further aggravated by the presence of endemic malaria in particular in the countryside and some typical diseases always present where the hygienic conditions are modest and poverty is widespread. Tuberculosis was, in fact, booming (Corbia 1934; Collari 1935) and trachoma struck widely from early childhood (Melis, Pozzi 2010).

The outcome of the military recruitment visit offers a clear response: a young every two was discharged at the first visit and stature does not show any clear growth trend and indeed, tends to decrease among the young men in the enrolment list who were born in the years 1870-74 (Breschi et al. 2011; Manfredini et al. 2012). The number of the poor, according to the statistical prospects kept in the Historical Municipal Archive, remains almost stable between 1870 and 1920, on average between 35-40 percent of the population.

The socio-economic difficulties worsened in the early 19th century when the town almost lost the important functions of seaport, commercial centre and military stronghold that had characterised its economy in the earlier centuries (Mattone, Sanna 1994). Agriculture with sheep-farming was the most substantial sector of urban economy, and according to the 1921 census, about half of the heads of the families was still engaged in the primary sector (Istat 1926).

Being located along the coast, the city hosted a significant presence of fishermen, sailors and coral fishers as well as artisans and traders. These two socio-professional groups were well balanced and amounted to the 35-40% of the families in the six decades between 1861 and 1921. A small but relevant “elite” group can also be found. According to the 1921 census, the family heads referred to as “wealthy or landowners” were little more than 1.5%. Instead, the liberal professions, the civil servants and private sector (banking and insurance) were growing (around 4-5%).

Always according to the 1921 census, the rest of the family heads – about 10% – had no professional status, being retired, working at home, unemployed, etc. In line with the majority of the centres of the South, the labour force engaged in real industrial activities was modest, despite the presence of a relatively large group of workers related to maritime professions, Alghero maintained a strong agro-pastoral connotation.

This agro-pastoral character was in some ways amplified by the low education levels of Alghero population: more than half of (civil) marriage records celebrated between 1866 and 1885 were not signed by any of the spouses. Even though this indicator presents

intrinsic limitations, it clearly suggests that the national law on compulsory schooling had a modest impact on population and resulted ineffective in changing a situation of strong cultural retardation (Zamagni 2007). A cultural gap yet to be filled in 1921, according to census data. The male population, aged 6 and over, who could read and write was just 57% while the female corresponding percentage was 68% (Istat 1926).

A significant change took place only towards the end of the 19th century with the demolition of the walls and the gradual construction of a new urbanisation outside the old centre (Principe, 1983; Sari, 1988a and 1988b). The construction activities not only encouraged population growth, but also helped to support local employment and limited the first oceanic migratory flows that had increased in the last decades of the 19th century, partly as a result of the tariff war with France (Lo Monaco 1965; Contu, Pinna 2009).

Another important characteristic of Alghero was its relative geographical isolation. The closest urban centres were Sassari, the capital of the province, which was about 35 km and Villanova Monteleone which was located on the adjacent hills some 25 km away. Other very small towns were not far, but the resident population rarely exceeded more than a few hundred individuals. The relative isolation of the town was guaranteed by geographical distance and weak communications at least until the early 20th century.

This geographical isolation is confirmed by the low marital exogamy. Between 1866 and 1886, only 7.6% of marriages involved at least one spouse resident outside the municipal territory, a figure that was quite low for a seaside town and fishing port with a secular tradition of trade with continental Italy and France. However, this indicator is quite higher (28.2%) if one looks at birthplace rather than residence. As already highlighted by Gatti (1995), the coastal areas of Sardinia showed the largest difference between endogamy rates by birthplace and endogamy rates by residence, which is clearly evidence of a sustained prenuptial immigration. In the case of Alghero, the difference is further accentuated by the presence of a very large part of seamen and fishermen that immigrated from Naples and its surroundings.

3. Data and sources

In this paper we apply the family reconstitution method based on civil records of birth, marriage, and death from 1866 to 1935. The reconstitution was carried out automatically using a computer program. The results have also been checked manually and compared with other civil sources from the period, mainly military lists, and some limited and partial records from the Population Register and the original family sheets of the 1921 Alghero census.

Data drawn from civil registers have been then integrated with information taken from parish registers. The two sources of information were both indispensable to have a complete dataset. This is because in 1866 the Catholic Church did not recognise the law that assigned the status of legal unions only to civil marriages and invited people to reject it by marrying only religiously. Consequently, some marriages were recorded only on parish registers with an artificial increase of illegitimate births in the civil registrations.

The method used to compare the two sources has been described and discussed in previous publications (Breschi et al. 2009; Breschi et al. 2012a). Without going into the details of a meticulous work of comparison of civil and religious sources, the consequences of the fight between state and church in terms of marriage and births records procedures have been largely identified. This reconstruction has allowed us to identify and subdivide the married couples according to the first date of marriage and the type of marriage, but also to ascertain the correct temporal sequence. At the same time, thanks to this reconstruction we have been able to measure properly the size of illegitimacy. In our subsequent analyses we considered the first date encountered for each couple as their date of marriage, whether occurring with a double registration (civil and religious) or with a single registration civil or religious.

The analysis involves a cohort approach. In particular we analyse fertility behaviours of Alghero women married between 1866 and 1905, in order to follow them until 1935¹. For the statistical analyses applied in this article, we have first selected the marriages celebrated in Alghero between spouses who claimed to both reside there. Then we have selected only those couples whose reproductive history duration could be established; this means that the end of the marriage reproductive history could be ascertained². Finally, to control population mobility, the couples selected were included in the analysis until the date of the last event recorded for a component of the respective family³. Finally we have selected a total number of 2,209 couples that make up 79% of marriages that took place in Alghero between spouses who claimed to be both residents there; the remaining 21% of marriages

¹ Even if in the latest marriage cohort (1901-05) for the young married women (under 20 years) we can follow their reproductive history until 45 years.

² Therefore our analysis includes: a) those marriages in which the date at death of both spouses is known; b) those marriages in which the date at death of one or both spouses was/were unknown but we were able to reconstruct the entire reproductive history until the end of the woman's fertile period (woman aged 50 years and above), thanks to the 1921 Census nominative family sheets.

³ Even we do not have at our disposal precise information on mobility, the complex and wide-ranging set of information available allows us to identify with accuracy the entire reproductive history of the resident couples. The data set is still being finalised: we are indeed engaged in the record linkage process with the information collected in the 1961 Census family sheets. This census, as we shall mention in the final section, includes a proper marital fertility survey. The 1961 fertility results, related only to the surviving women, are very consistent with our reconstruction.

(about 542 cases) was made up of couples who presumably migrate or were otherwise more mobile.

In order to analyse the influence of socio-professional stratification on fertility, specific attention has been paid to the husband's occupation⁴. We take into account SES stratification: occupational categories have been coded according to the Historical International Standard Classification – HISCO – (Van Leeuwen et al. 2002). Each code HISCO was converted into classes using the HISCLASS (Van Leeuwen, Maas 2011). The classes thus obtained were subsequently merged into 6 categories that are given in table 1. The professions are divided into two main large groups: “manual workers” and “non-manual workers”. The first group includes: “unskilled”, “lower skilled”, “farmers” and “skilled”, while the second includes: “lower-medium skilled”, and “higher occupations”. The manual workers “unskilled” as well as “lower skilled”, include the large group of fishermen and sailors, while the world of agriculture is represented by the group of “farmers”. The category “skilled workers” includes predominantly craftsmen. In the second group of “non-manual workers” we have classified as “lower and medium skilled non-manual”, those individuals closely linked to the local public administration and general services. The category of “higher occupation” amounts to little more than 1% of the total number of couples under examination and is represented by only 20 couples married in Alghero; we have included under this denomination only the most prestigious professions like: doctors, pharmacists, lawyers, engineers, professors, army officers, bank managers, and also occupations related to the army.

Table 1. HISCLASS, categories adopted

<i>Professional status</i>		<i>HISCLASS</i>	<i>%</i>
Manual workers	Unskilled	11-12	21.2
	lower skilled	9-10	13.7
	Farmer	8	50.3
	Skilled	7	10.0
Non manual workers	low. med. skilled	4-5	3.7
	higher occupation	1-3	1.1

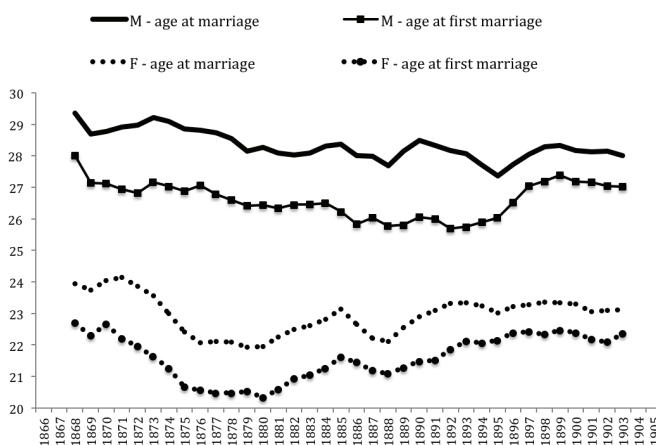
Note: Hisclass 6 is not present in the dataset

⁴Women occupational categories are not useful for the purposes of our analysis, since the term used in almost all cases is “housekeeper” or something similar.

4. Fertility patterns and trend in Alghero

Before turning to the pattern of fertility, we first look at marital patterns. Alghero only partially reflects the typical Sardinian pattern, frequently described in reference to internal and rural areas rather than in the case of an urban sea population as is that of Alghero. The age gap between the spouses was quite large. In fact male mean age at first marriage was quite high, around 27 years, while the corresponding age for women was around 22 years. Mean age at marriage, however, also seem to be stable, with some fluctuations, from the 18th to the 19th century (See figure 1). Although the interpretation of such data could be affected by the complex question related to the fight between church and state about the recognition and primacy of marriage celebration, already mentioned⁵.

Figure 1. Mean male and female age at marriage (5 year mobile average), Alghero 1866-1905



We have at our disposal very limited information about the proportion of never married people. According to the 1921 Census, male permanent celibacy was about 6% and a very similar level was found also for women, 8%.

In Alghero, as in the rest of Sardinia, the frequency of remarriage was very high compared to the national level and, in particular, female remarriage. The latter, even lower than male remarriage (16.5%), was above 12 per cent (Mazzoni et al. 2013). The frequency of

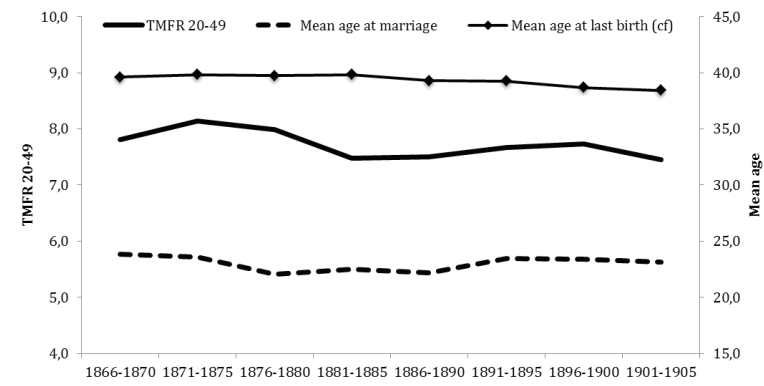
⁵ Hence, in this article marriage has been regarded as the earliest ceremony celebrated either in Church or in front of the civil officer.

remarriage has a clear impact on the mean age at marriage which is about 2 years higher, for both men and women, than the respective age calculated only on first marriages (See Fig. 1).

Such a high frequency of remarriage was, of course, a consequence of the high mortality rates recorded in the island – life expectancy at birth differs little from 35 years in the decades after national unification. However it was also caused by high number of second marriages celebrated between widows and widowers – equal to about 7.5 per cent – indirect impact, among other things, of the limited availability of unmarried men and women.

In order to have a first overview on marital reproductive history, we provide (figure 2) total marital fertility rates (TMFR) and some indicators (mean female age at marriage, mean age at last birth). The descriptive analysis carried out for the five-year cohorts highlights a certain stability especially with regard to the age at first marriage and the age at birth of the last child, calculated only for the completed fertility couples. The TMFR general trend shows instead a slight decrease. This indicator moves from values around 8 in the first cohorts to about 7.5 in the latter. There is nonetheless a reduction of certain significance for the couples who got married between 1881 and 1890. This decrease was probably due to the crisis affecting the Italian economy and particularly the Sardinian one in the mid 80's.

Figure 2. Total marital fertility rate (TMFR₂₀₋₄₉), mean age at marriage and mean age at last birth. Alghero 1866-1905

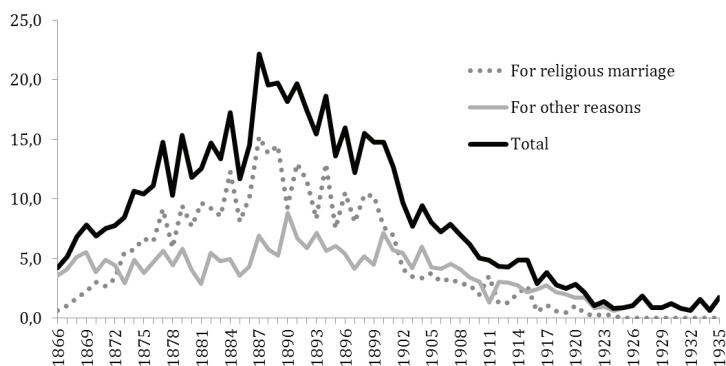


Beyond small oscillations, the trends of the three indicators summarised in Figure 2 describe a pre-transitional population. Our figures are slightly lower, compared to pre-

transitional marital fertility levels reported in other studies, for instance the figures reported for 26 English parishes, between 1750 and 1824, by Wrigley et al. (1997). Marital fertility in Alghero results also generally lower than that recorded in the fourteen German parishes analysed by Knodel (1978 and 1988), although there are large differences among the various German villages. The figures obtained for Alghero are generally lower (sometimes much lower) than those calculated in the family reconstitutions carried out for about twenty Italian villages with the Henry's method Italian villages (Livi Bacci, Breschi 1990, Salvini 1990). Also in this case, the comparisons are tricky. Most of these analyses are focussed on central and northern regions and refer to the pre-unification period. In addition, none of these studies analyses urban populations. However, the result seems to be in accordance with the general picture of Italia regional demographic differences dating back to the Princeton project results (Livi Bacci 1977) for the pre-transitional period.

One important component of reproduction, which is not examined in this paper, is non-marital fertility. The proportion of illegitimate births in Alghero (as well in the whole country) increased "artificially" as consequences of the conflict between Church and State. The effects of this situation on the birth series recorded on the civil source are almost disruptive (figure 3). The proportion of illegitimate births increases remarkably in Alghero after 1866, touching the average figure of 15% for a period of almost 30 years⁶, a really high proportion especially if compared with the values before the introduction of the law on civil marriages, only 2-3%. In the mid-70's, illegitimacy was around 10%, arriving at 20% ten years after. Then, the trend reversed returning to low figures before the First War World. This dynamic reflects quite closely the trend of religious marriages.

⁶ At the regional level, the proportion of illegitimate births was only slightly lower, namely 10% in the period 1871-90.

Figure 3. Percentage of illegitimate births, Alghero 1866-1935

This is the reason why the official sources do not permit for Alghero, like for most municipalities in the new Italian Kingdom, a complete reconstruction of the reproductive behaviours of the couples married in the decades immediately after National Unification. In Alghero, the marriage and reproductive life of about 50% of the couples would result incomplete and biased⁷. A problem not negligible to deal with, because the Italian couples started to modify their reproductive behaviours, with different levels of consciousness and decision, just when the State-Church contrast culminated.

This difficulty is largely resolved in our data set because, as we mentioned, we were able to reconstruct the correct sequence of marriage and reproductive history of Alghero couples examined. In the light of our reconstruction (see figure. 3, line “For other reason”), the share of illegitimate births is generally lower than 5 per cent and tends to decrease over time⁸.

5. Socioeconomic Differences in Fertility

We know from previous research that the childbearing pattern could be quite different between different social groups both with respect to number of children and timing of childbirth. It is also clear that other aspects of “reproduction” life in preindustrial society varied considerably among social groups, such as in the size and composition of the

⁷ This proportion should have been relevant everywhere in the island and was probably higher in those regions once subjected to the Papacy (Marche, Umbria, Lazio, and part of Emilia, or the provinces of Romagna). For example, in the small municipality of Sonnino (Lazio) during the decade 1871-1880, 401 religious marriages were performed and only 134 civil marriages (Livi Bacci 1977).

⁸ Most (true) illegitimate births were first births by women of young ages, although higher parity out-of-wedlock births also existed

household, in ages at leaving the parental home, in marriage timing. To a large extent, these differences stem from differences in access to productive resources, most notably land and house, and thus in demand for labour in household production.

In particular, the availability of resources necessary to build a new family strongly affected and still affects the timing of marriage access in Sardinia (particularly delaying male marriage) and the same size of the offspring. A vast literature emphasizes this aspect in the Sardinian culture and economy as well as the significant differences within the island (from north to south, from east to west and between sea populations and inland populations) and between different social groups (Oppo, 1990).

Reproductive differences among social groups may not all be due to economic factors. They could also be caused by different weaning practices, sub-fecundity due to acute malnutrition, differences in infant and child mortality, or temporary migration.

Several existing studies of Italian historical fertility report fertility differences among social groups. Some of these differences are due to differences in marriage patterns, but differences in marital fertility have also been demonstrated. The sharecropping area (analysed in different regions of the country, Tuscany, Umbria and Emilia) has received the greatest attention; in particular it has been found a clear contrast between the family⁹. The directions of these differences vary among settings, and it is impossible to find a general pattern where fertility and social status go always together in the same direction. Instead, the fertility differences have frequently been related to economic structure and the roles of different social groups within certain communities. Here, then, the reason for interest in analysing the population of Alghero. Among other things, this is the first time that the reproductive behaviour of a large (urban) community in the South is studied in its initial phase of transition. The choice of an urban community, characterised by a social context much more mixed and diversified than that prevalent in the rural area of the island, will give us the opportunity to explore deeper into the Sardinian apparent demographic uniformity and immobility. It will help us to understand whether certain social groups more promptly adopted innovative reproductive behaviours which were becoming increasingly common in the other Italian regions, but apparently were still almost absent in the island.

Now we focus our attention on socio-economic differentials in women reproductive behaviours in the community of Alghero. To simplify we have combined the cohorts in two groups: 1866-1885 and 1886-1905 (see Table 2). As mentioned, we have not found

⁹ The greatest contrast was found between the high fertility of the farmers and the sharecroppers and the lower of the labourers. This difference, already highlighted in 1927 by Livio Livi, has been confirmed in more recent studies based on individual data (Della Pina 1990 and 1993, Manfredini, Breschi 2008).

significant differentials between the cohorts analysed, while socioeconomic differences are well evident even considering age at first marriage and age at last birth. These indicators show a different behaviour for two socio-economic groups (non manual lower-medium skilled and higher occupation). Women's age at marriage is higher for the non manual lower-medium skilled group and the same pattern is evident for the higher occupational category, especially in the first cohort. The age at last birth is particularly low for the higher occupation group, and the same is true also for the skilled and non manual low. med. skilled groups. The corresponding indicators for the other socio economic groups (lower skilled, medium skilled e unskilled) are more similar and confirm the trend observed at the aggregate level.

Table 2. Mean age at first marriage, mean age at last birth and TMFR₂₀₋₄₉ by cohort of marriage and SES stratification, Alghero 1866-1905

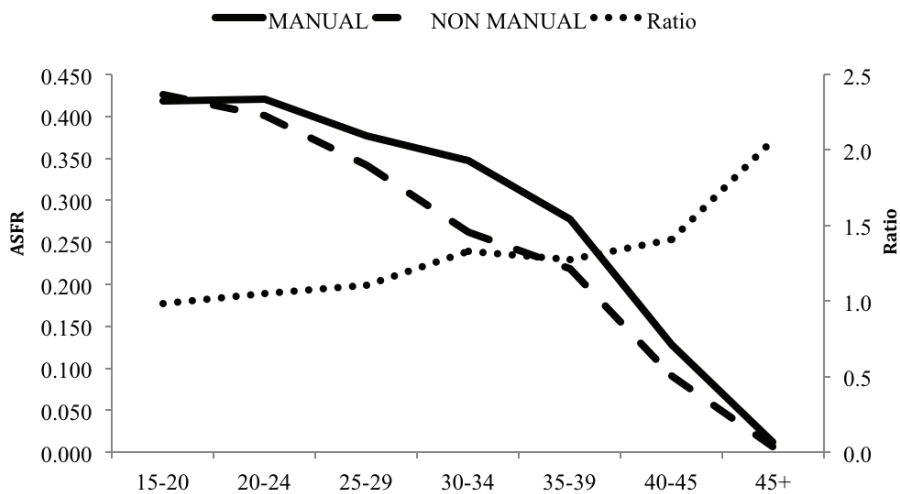
Professional Status	Cohort of marriage 1866-1885				Cohort of marriage 1866-1885				Ratio TMFR 1866- 85 /1886- 05
	N°	Age at first marriage	Age at last birth	TMFR 20-49	N°	Age at first marriage	Age at last birth	TMFR 20-49	
Unskilled	194	20.8	40.0	7.8	264	21.5	39.4	7.8	1.00
Lower skilled	142	21.6	38.9	7.6	154	22.0	38.9	7.6	1.00
Farmers	545	21.2	40.3	8.2	538	21.7	39.4	7.7	0.94
Skilled	108	21.2	38.8	7.3	107	22.9	37.4	7.5	1.02
Non manual (low-med.) skilled	31	23.6	37.7	7.5	49	24.0	37.0	6.5	0.87
Higher occupation	13	28.4	37.1	7.4	11	25.2	32.2	3.8	0.52

Note: Marriages with unknown professional status are excluded. Mean age at last birth (completed family).

The non manual lower-medium skilled category and especially the higher occupation categories show the lowest TMFR (20-49 years) for both groups of cohorts (table 2). For the higher occupation, TMFR decreases in the second cohort group and reach a value around 4.0, the non manual lower-medium skilled reach a value round 6.5. The women whose husband is classified in the “higher occupations” group or “Non manual (lower-medium) skilled” group show a decrease in TMFR between the cohorts, with a ratio 1886-1885/1886-1905 of 0.52 and 0.87. In the other socioeconomic categories, we cannot identify any significant decrease between the cohorts (ratios just above or lower to 1).

In the following figure we compare the fertility rates of the two highest professional groups (Non manual (lower-medium) skilled and Higher occupation) with the remaining ones. We observe, as might be expected, a substantial difference even if this difference seems more evident in the highest age groups (figure 4). In particular, the ratio between the two indicators increases in the 30-34 years age group, remains stable in the next one and rises further in the last two age groups. The differences between the two highest socio-economic groups and the remaining ones are concentrated in women's reproductive history later in life.

Figure 4. Age Specific Fertility Rates: higher occupations and other social groups



6. Towards Parity-specific Control?

In the light of the previous results, we can suggest that the wealthy social groups started to limit their number of children, reducing the exploitation of their fertile period: they exert a “stopping” behaviour. Nonetheless the analysis of fertility rates shows a certain deceleration at the advanced ages (Fig. 4).

The most commonly used measures of detecting parity-specific control are the Coale-Trussell M and m indices. Table 3 shows these indices for Alghero for different periods. The emerging picture at the aggregate level reveals a population still immersed in a pre-transitional stage. Despite the periods of crisis just observed, fertility decreases very slowly. The m 's for Alghero are in most cases close to 0.1, which suggests that the age-specific

schedules closely resemble natural fertility schedules and, hence, no parity-specific control was adopted. It is only in the last cohort (1900-1905) that the m -value is close, but still, below 0.2, which is usually considered as the minimum for a population practicing parity-specific control. The values of the M parameter (0.85-0.95) also indicate rather high levels of marital fertility.

Table 3. Coale-Trussell indices. Alghero 1866-1905

Cohorts	Marriages	Coale-Trussell	
		M	m
1866-1870	269	0.91	0.08
1871-1875	288	0.98	0.15
1876-1880	261	0.94	0.11
1881-1885	253	0.91	0.16
1886-1890	280	0.86	0.07
1891-1895	291	0.91	0.12
1896-1900	258	0.91	0.10
1900-1905	309	0.91	0.18
1866-1905	2209	0.91	0.10

Note: In bold coefficients statistically significant ($p \leq 0.05$)

The overall picture shows a population that has not registered significant changes and not yet begun the transition process. Although some fluctuations are visible, a substantial homogeneity and stability prevail. The differences between the upper classes and those less affluent are, once again, highlighted, by the Coale-Trussell indices (table 4). In particular, the m index, which helps to detect some forms of birth control is much higher than 0.2 only in the two highest socio-economic groups with the addition of the “skilled” group which shows a value just above 0.2. Instead, in the other groups (“unskilled”, “lower skilled” and “farmers”) m is significantly lower. Although these values are not always statistically significant, it emerges clearly as the most advanced component of Alghero population has already adopted forms of fertility control that seem totally absent in the other socio-economic groups.

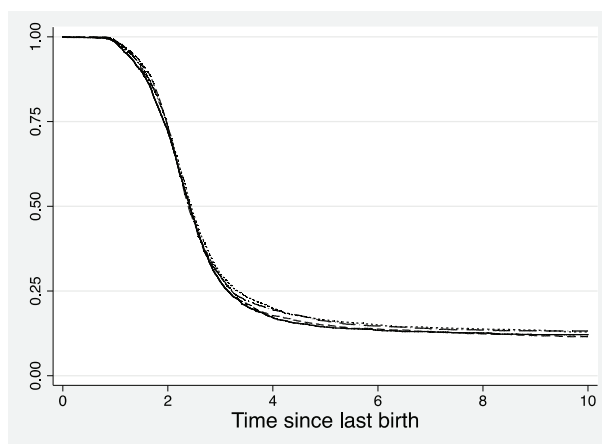
Table 4. Coale-Trussel indices by social status. Alghero 1866-1905

Social status	N° marriages	M	m
<i>Manual workers</i>			
Unskilled	458	0.89	0.04
Lower skilled	296	0.91	0.11
Farmers	1083	0.93	0.01
Skilled	215	0.94	0.25
<i>Non manual workers</i>			
Lower-medium skilled	80	0.89	0.27
Higher occupation	24	0.80	0.64
Total	2156	0.92	0.12

Note: In bold coefficients statistically significant ($p \leq 0.05$).

Marriages with unknown SES are excluded.

Now in order to detect the emergence of behavioural differences between Alghero women belonging to different socio-economic classes we shall analyse what has been seen so far in terms of time elapsed since the birth of the last child. This analysis is important to measure the eventual birth control in terms of “spacing” or “stopping”. Even visually it is possible to appreciate such behaviour through a Kaplan-Meier survival curve. These different strategies of limiting the fertility of the couple can be seen, in a certain way, as in opposition to one another (Okun 1994). The debate is still open on the spread, presence or absence of each practice in the past populations, before and during the transition (Knodel, Vandewalle 1979; Knodel 1987; Van Bavel 2004; Van Bavel, Kok 2004). Our aim is to detect any changes in the reproductive behaviours of Alghero women especially among different socio-economic groups. Figure 5 shows the survival curves for ten year cohorts, namely: 1866-1875, 1876-1885, 1886-1895 and 1896-1905.

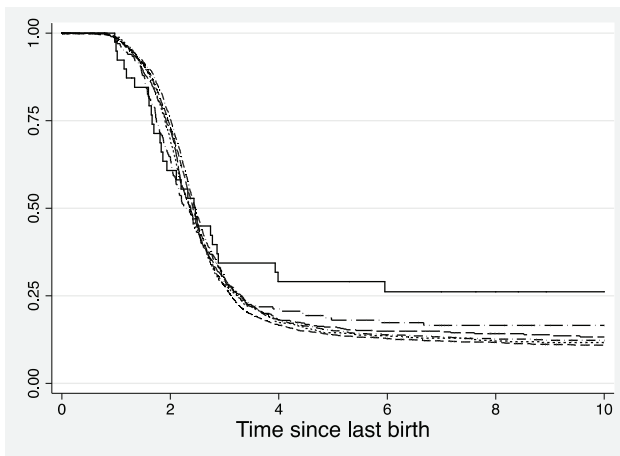
Figure 5. Survival Curves - Years since last birth by cohorts. Alghero 1866-1905

The picture offered by the Kaplan-Meier shows a scenario essentially unchanged: we cannot identify any substantial change in the reproductive behaviours between the different cohorts of marriage. The same analysis by socio-economic group, however, highlights the differences that already existed and sets them in a temporal context. We have distinguished the couples who got married before and after 1885 (Figure 6). The couples who got married until 1885 show few differences according to the socio-economic category: only the wealthiest groups come off sharply from the general context. They show a “stopping” behaviour fairly noticeable, while no differences are evident in terms of “spacing” with the other categories.

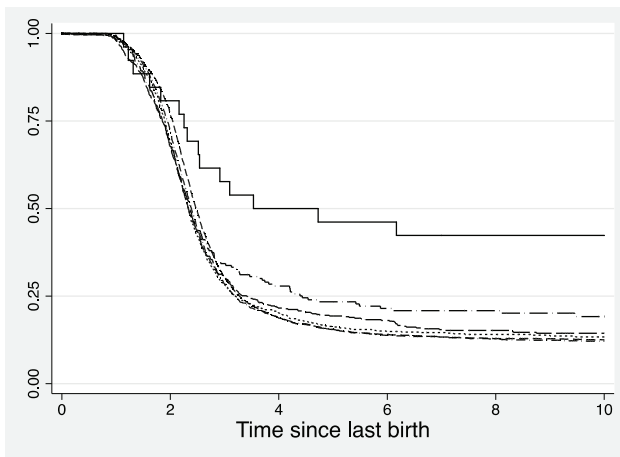
For the couples who got married after 1885, however, it seems clear that this stopping behaviour is also adopted by the “not manual (lower-medium) skilled”. This last group is detached from the rest of the population and begins to decrease fertility to achieve the desired threshold of children. In these couples, such behaviour seems even more pronounced in the “higher occupation” group. On the other hand, the differences in terms of “spacing” between the different socio-economic groups seem few if any: the intervals between births remain stable around an average of 2.5 years.

Figure 6. Survival Curves, years since last birth by SES. Alghero 1866-1905

a) 1866-1885



b) 1886-1905



7. Conclusions

The reproductive behaviours adopted by the Alghero couples under examination (marriage cohorts 1866-1905) seem to fit well the general picture that describes fertility transition in the whole island. Fertility levels and trends do not show any decisive change and, above all, any evident forms of conscious fertility control.

The result is interesting in itself because our analysis refers to one of the few urban populations of the island. Even if, as a consequence of the slow and delayed process of industrialisation in the South of the country, Alghero in the early decades of the 20th century, retains a largely rural economy in spite of its geographical location and its role as a port interconnection.

The picture tends, however, to differentiate as soon as the analysis takes into account the socio-economic variable. For the small group of families headed by not manual workers we have found evidence of family size control, particularly towards the end of the 19th century.

This attitude is well manifested in the very few families belonging to the real socio-professional Alghero elite. The elite women have about half of the children born to the other ones (less than 4 compared to an average value of 7.8); they end their reproductive lives, on average, around 37-38 years old, about three years before the other women and, above all, begin to space births. They represent, as we have mentioned, a tiny minority who cannot affect the overall average figures and, above all, a minority quite separate from the rest of the population in terms of socio-economic status.

The picture just described is confirmed by the results that we have only recently acquired thanks to a quite unique archival sources. Indeed, we have found the original family sheets of the 1961 Census for about 2/3 of the families who were residing in Alghero at that time.

The 1961 census also contains a special section dedicated to marital fertility, the second survey on fertility at the national level¹⁰ and allows us to reconstruct, albeit with some approximation, the complete reproductive history (in terms of intensity and timing) of the women (married at least once and recorded in the 1961 census) who were born before 1911.

¹⁰ See Breschi et al. (2012 b) on the characteristics of the Marital Fertility Survey included in the 1961 Census. The first survey was included in 1931 Italian Census (Istat, 1936).

For each married woman recorded in the census we have the following information: date of birth and date of marriage (for the current marriage and the previous one/s, in this last case/s also the date of its/their end), the number of children born alive and still-born and, of much useful information, the year of birth of the children born alive.

Thanks to these data, we can measure fertility in terms of both intensity and timing particularly for those women who had reached at least the age of 50 in marital condition. These women celebrated their marriage, in the large majority of cases (90%), after 1905. In other words, we can, on the one hand, compare our previous results and, on the other, extend the time period of our analysis.

The general picture on reproductive behaviours that we have outlined thanks to the analysis of individual and family biographies is fully confirmed by the first results obtained from the 1961 Census retrospective data. The first exploratory analysis carried out on the census data seems to show a scenery of virtually no substantial change in reproductive behaviour almost until the eve of the Second World War. A result that, even more, thus underlies the singularity, if not, the eccentricity of Sardinia in the national context.

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