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Exploring the childless universe: profiles and fertility intentions of men and women without children in Italy

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Exploring the childless universe: profiles and fertility intentions of men and women without children in Italy

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Abstract

In the last decades, several western countries experienced a large increase in childlessness. Relatively little is known about the profiles of childless women in Italy, and virtually nothing about men, as well as their fertility intentions. This paper aims to fill this gap by identifying typical life course trajectories of childless women and men in Italy, and by exploring how childless people's fertility intentions differ according to the various life course profiles. For eliciting typical patterns, I followed a holistic perspective and applied sequence analysis to a childless sample derived from the Italian 2009 Family and Social Subjects survey, taking into account a few relevant spheres, including partnership, employment, and education. Reconstructing the major life course trajectories, several similarities emerged between childless women and men, who shared some typical patterns. Determinants of fertility intentions were investigated through a logistic regression approach applied to a subsample of childless people nearly at the end of their reproductive period. Interestingly, similar childless profiles did not lead to similar attitudes towards fertility intentions.

Keywords: childless women, childless men, fertility intentions, sequence analysis, Italy

1. Introduction

In the last decades, many western countries experienced a large increase in childlessness. Compared to the past, when ultimate infertility was mainly determined by the proportion of unmarried men and women in the society (Rowland, 1998), or was due to permanent celibacy and sterility, modern causes of infertility are emerging, which are related to new systems of preferences, evolving family models and roles, and changing socio-economic environment (Tanturri et al., 2015). The childless have by now become a very heterogeneous population: there are those who do not want children – "voluntary childless", also known as "child-free" or "childless by choice" - and those who just happen to remain by chance – "involuntary childless", or "childless by circumstances" (Basten, 2009; Bloom & Pebley, 1982; Charmichael & Whittaker, 2007; Connidis & McMullin, 1993; Koropeckyj-Cox, 2002; Tanturri & Mencarini, 2008). While some women decide early in their life-course not to have children (early articulators), others postpone childbearing until when they decide that they will not have any, or when it is too late (postponers: (Houseknecht, 1977; Houseknecht, 1979). Remaining childless is rarely a decision that a person makes at the beginning of his/her reproductive period, and preferences and orientations may change over time. At the beginning of their reproductive period, only a few, selected individuals plan not to ever have children, even if this "childfree" behavior seems on the increase among the youngest cohorts (Goldstein, Lutz, & Testa, 2003; Tanturri & Mencarini, 2008). Then, fertility intentions tend to be revised, normally in a negative sense with age (Barber, 2001; Iacovou & Tavares, 2011). In all cases, the association between fertility intentions and their subsequent realization is still debated in the literature. While some scholars have found this link rather weak (Réigner-Loilier & Vignoli, 2011; Speder & Kapitany, 2009; Toulemon & Testa, 2005), others have maintained that intentions are instead a good predictor of realized fertility, especially within specified time intervals (Schoen et al., 1999).

A plurality of factors and causes concurs to explain childlessness, and how fertility intentions and

realizations (or no realization) evolve during the life course (Heaton, Jacobson, & Holland, 1999; Heiland, Prskawetz, & Sanderson, 2008; Iacovou & Tavares, 2011). A first series of motivations for being childless regards the couple, regardless of country and gender: late entry into union, union interruption, and the lack of a partner have a strong influence on fertility decision-making (Connidis & McMullin, 1996; Parr, 2010; Tanturri & Mencarini, 2008). Furthermore, childbearing may also be affected by the couple disagreement about fertility (Tanturri & Mencarini, 2007), or by the presence of fecundity problems, which can also emerge at relatively late ages, because of postponement (Letherby, 1999).

Other factors, referring to individuals and not to couple, differ by gender. For women, next to partnership, employment is a key element for being childless. The link between motherhood and paid work is sometimes found to be positive (that is, economic stability creates good conditions for having children), and sometimes negative (see Keizer, Dykstra, & Jansen, 2008; Matysiak & Vignoli, 2008). As an example, women could postpone or even renounce to childbearing because of the cost of leaving the labor market, even only temporarily, in countries where structured family policies lack (Neyer, Lappegard, & Vignoli, 2013; Rowland, 1998), or for the competition for women's time and energy (Barber, 2001; Dorbritz, 2008; Willekens, 1991). Women's education is important, too (Impicciatore & Dalla Zuanna, 2016; Mynarska et al., 2015): higher education increases the probability of remaining childless because of postponement (Bloom & Trussell, 1984; Heaton, Jacobson, & Holland, 1999; Hoem, Neyer, & Andersson, 2006; Keizer, Dykstra, & Jansen, 2008; Koropeckyj-Cox & Call, 2007; Sobotka, 2004), or as the sign of less traditional attitudes and the existence of a contrast between maternity and personal ambitions and aspirations (Lesthaeghe, 1995; van de Kaa, 1987). For men, the association between fatherhood, employment and economic condition seems to be of a different type. According to Parr (2010), unemployed men, and those with low-paid jobs, have the greatest chance of remaining childless in Australia. Keizer et al. (2010), who found lower levels of income among

childless men, compared to both resident and non-resident fathers, confirm this result for the Netherlands. As for education, no noteworthy association is known about men.

The two-fold aim of this work is (1) to advance knowledge about who are childless men and women in Italy, and (2) what are their future fertility expectations. Italy represents an ideal case study for looking at childlessness. Indeed, it is one of the countries with the lowest fertility levels in Europe (Sobotka, 2004), and this goes hand in hand with the rapid increase in childlessness: the proportion of women who ultimately remained childless rose from about 10% in the 1955 cohort to about 20% in the 1965 cohort (*Observatoire Démographique Européen).* This rise is somewhat surprising in a country where Catholicism and family values have traditionally been very strong, and ask for a deeper understanding of the childless universe.

To address the first objective, I build and describe the profiles of childless women and men in Italy through a holistic perspective (Mynarska et al., 2015): acknowledging life courses as complex entities, through a sequence analysis and a cluster analysis I model a few typical life course trajectories (profiles) of childless individuals in the relevant spheres of partnership, employment, and education. In Italy, the literature on childlessness is scarce for women, and practically absent for men. I contribute to fill this gap, by looking at similarities and differences between the two genders. As for the second objective, the reconstructed life course trajectories are then considered as explanatory factors of fertility intentions of childless men and women who are nearly at the end of their reproductive period. I thus shed light on the association between fertility intentions and childless profiles, and catch differences among groups, net of a large set of confounders.

2. Data

This study is based on a sample of men and women stemming from the Italian Multipurpose Household Survey on Family and Social Subjects (FSS), conducted by the Italian Institute of Statistics

(ISTAT) in November 2009. This is a large scale, retrospective survey on approximately 24,000 households and almost 50,000 individuals, with a response rate over 80%. The data were collected using a two-stage sampling design, where the municipalities were the primary units (stratified), and the households were the secondary units. The municipalities were sampled with probabilities proportional to their population size, whereas the households were drawn with equal probabilities (sampling without replacement in both cases). All members of the sampled households were interviewed face-to-face.

The FSS survey is particularly suitable for the aim of this work, because it provides information on several socio-demographic characteristics, employment, partnership and education histories, and information about fertility intentions at the interview date. To address my first objective, namely eliciting typical life course trajectories of childless men and women, my analytical sample includes only childless women and men who were at least forty years old at the date of the interview, in order to select those who had already passed their most fecund period without having children (men's age was decided for reason of uniformity with women), and consists of 1,687 women and 1,727 men, born between 1907 and 1969.

As for the second objective, namely exploring how childless people's fertility intentions differ according to the various life course profiles, my sample is restricted to the youngest cohort of childless men and women (the 1960-1969 birth cohort), thus comprising 685 men and 490 women, who did not have children and who were 40-49 years old at the interview date.

3. Childless men's and women's profiles

3.1 Identifying the profiles: sequence analysis for life course trajectories and cluster analysis

In order to identify the different profiles of childless men and women, I referred to the sequence

analysis technique with optimal matching (OM) algorithm and subsequent clustering (Aassve, Billari, & Piccarreta, 2007). The observation period started when the respondents were sixteen and finished when they were fifty (or earlier, for the youngest cohorts), thus lasting thirty-four years and covering their reproductive period, all or at least most of it. Overall, the observation period had a monthly observation unit, which amounted to (34x12=) 408 units of observation.

Men's and women's sequences were constructed allowing for multiple trajectories, and they focused on three careers: *education*, *employment*, and *partnership*. All the variables described renewable events: according to the first trajectory, a subject could be in education or not; three possible states described one's employment career: employed, self-employed or non-worker; and partnership translated into being single, cohabiting or married. Thus, the number of possible combinations of states in the sequences was 18 (see Table 1).

Table 1 – Alphabet: labels and description of the different states that each element of the sequences can assume.

Label	Description of the states
NoEduc NoWork Single	not in education, not working, single
NoEduc NoWork Cohab	not in education, not working, cohabiting
NoEduc NoWork Married	not in education, not working, married
NoEduc WorkEm Single	not in education, working as employee, single
NoEduc WorkEm Cohab	not in education, working as employee, cohabiting
NoEduc WorkEm Married	not in education, working as employee, married
NoEduc WorkSe Single	not in education, working as self-employed, single
NoEduc WorkSe Cohab	not in education, working as self-employed, cohabiting
NoEduc WorkSe Married	not in education, working as self-employed, married
Educ NoWork Single	in education, not working, single
Educ NoWork Cohab	in education, not working, cohabiting
Educ NoWork Married	in education, not working, married
Educ WorkEm Single	in education, working as employee, single
Educ WorkEm Cohab	in education, working as employee, cohabiting
Educ WorkEm Married	in education, working as employee, married
Educ WorkSe Single	in education, working as self-employed, single
Educ WorkSe Cohab	in education, working as self-employed, cohabiting
Educ WorkSe Married	in education, working as self-employed, married

Having constructed the sequences, some descriptive measures were computed. Given the high number of states (18) and the length of each sequence (from 288 to 408 units), the number of possible different sequences made impossible to have a clear understanding of the sequences without performing a cluster analysis, constructing few meaningful profiles for analyzing differences and similarities among groups of sequences. For this purpose, optimal matching algorithm was applied to childless women's and men's sequences, separately (Rohwer & Potter, 2005), thus obtaining the dissimilarity matrix used in the subsequent cluster analysis, using Ward's algorithm to aggregate units. Both combining "stopping rules" procedures (see Calinski & Harabasz, 1974; Duda & Hart, 1973), and visual inspections, the best solution appeared the six-cluster solution for both groups. Each cluster represented a distinct pattern on how life course developed, according to education, employment and partnership condition simultaneously.

Table 2 shows the distribution of childless men and women among the obtained profiles. The cluster names have been proposed by the author, catching the main specificity of that group in connection with the three life careers used to create sequences[1].

[1] Some names of the clusters are derived from Mynarska et al. (2015).

Table 2 - Distribution of childless men and women by cluster[2].

Cluster	Childless women		Childless men	
	abs.v.	%	abs.v.	%
Disadvantaged	292	17.3	153	8.9
More educated, unstable work and union	165	9.8	323	18.7
Employed married	211	12.5	313	18.1
Employed single	549	32.5	605	35.0
Self-employed women	195	11.6	-	-
Self-employed married men	-	-	130	7.5
Self-employed single men	-	-	203	11.8
Stay-at-home wives	275	16.3	-	-
Total	**1,687**	**100.0**	**1,727**	**100.0**

3.2 Descriptive results for childless people and parents

Let me first briefly present some descriptive measures about childless people before discussing their profiles, and compare these with the same measures computed for parents[3]. All the 18 different states that a sequence could assume were present in the sequences, both for men and women. Looking at each life course career, no working episode was lived by 414 childless women (24.5%) and 3,429 mothers (32.9%); on the other hand, 123 childless men (7.1%) and 113 fathers (1.3%) had never worked during the observation period. For partnership history, 792 childless women (47.0%) and 78 mothers (0.8%) had never entered a union, whereas no partnership episode was present for 942 childless men (54.6%) and for 43 fathers (0.5%).

Looking at the average number of years spent in each state, some interesting points emerged comparing cohorts for different groups (see Table A2-A3 in the Appendix). First, looking at education and employment among women, time spent studying and working increased with birth cohorts, but it was always greater for childless women than for mothers. Regarding men, time spent studying was

[2] Tables A5-A8 in the Appendix provide some descriptive statistics for each of the clusters.
[3] The parent sub-sample, formed by 10,429 mothers and 8,688 fathers, was selected by FFS 2009 too, with the same characteristics in terms of age.

usually greater for childless men than for fathers; for employment, the situation was opposite to that of women. Furthermore, paying attention to the partnership condition, average years spent as single increased for the youngest cohort; then, they were always much greater for childless women and men than for parents, with the biggest differences for the female group. Cohabitation increased with birth cohorts, and it was longer for childless women and men than for parents, even if it was always a residual condition.

In conclusion, the results suggested that all three life-careers differ between the two groups, thus isolating proper life events that could lead to childlessness. The condition of singlehood emerged as the biggest difference comparing childless women's and men's patterns to mothers' and fathers' ones; some discrepancies could be found in education and employment histories too, especially for women. Indeed, childless men's and fathers' profiles seemed more similar than childless women's and mothers' ones. Given these results, cluster analysis could help us to gain more insights into the childless people, revealing the persistence of a few profiles that this first description could hide.

3.3 Childless profiles at a glance

In this section I present the major life course profiles of women and men as emerged from sequence analysis and subsequent cluster analysis. I complement the description of the cluster with useful information derived from FSS 2009 data. For each cluster, I propose a label indicated in bold italics (see also Table 2). The first profile, which accounted for 17.3% of women and 8.9% of men, and labeled as ***disadvantaged***, was the most similar cluster between women and men, and was composed by people who lived in the same state for almost the entire observation period, i.e. they did not work, did not study and were single from 16 to 50 years old (see Figure 1a). Whereas at the beginning of the observation period (namely, when they were 16), approximately 75% of them lived this singlehood and

neet condition[4], they increased over 90% after some years. All other states were negligible. Nearly 85% of women and more than 90% of men never entered a union, regardless cohabitation or marriage; and more than 70% of those men and women never worked. Educational level was generally low, with the least educated men and the least educated women. Then, more than 65% of women and even more than 70% of men of this profile lived in the South of Italy. Finally, this was the cluster with the highest percentage of men and women with long-term health problems, which could partially account for this atypical pattern (see Table A7-A8 in the Appendix for more descriptive information about childless profiles). For all these characteristics, this cluster could be defined the *disadvantaged* one (Mynarska et al., 2015). Noteworthy, the proportion of women who had this disadvantaged profile was nearly double compared to men.

The second profile, namely the ***more educated, unstable work and union,*** formed by 9.8% of childless women and 18.7% of childless men, showed some peculiarities, despite the great variability among the many diverse states included (see Figure 1b). First, it was characterized by a prolonged education, with the highest percentage of tertiary educated. Second, and as consequence, employment was postponed; besides, there were more employment spells than in other clusters, revealing a more fragmented work experience for shorter periods. Third, even emotional relationships appeared fragmented and short, as disclosed by the biggest mean number of union spells and the average years spent in each relationship. Then, a noteworthy proportion of men and women cohabited - an exception compared to all others groups. Finally, 72% of men and women classified in this cluster lived in the North and Center of Italy. To sum up, this profile was characterized by very unstable life trajectories, both for partnership and employment. Among this group, there could be some people who devoted more time to education and who paid more attention to their career than to partnership, or people who

[4] The term "neet" describes the condition of young people who are not engaged in any form of employment, education or training (Eurofound, 2012).

lived new family behavior, cohabiting instead of marrying. Those who lived this new behavior pattern and belonged to the oldest cohorts could be defined as "forerunners", because they constituted the exception, compared to the traditional pattern of the Italian society. Then, in recent years, this behavior has become more common in the society: accordingly, the number of men and women belonging to this cluster increased with birth cohort (Pirani & Vignoli, 2016). Nevertheless, the instability of the employment and/or the partnership career could not be the result of an individual decision, but the involuntary result of external constraints (e.g. the consequence of dismissals and/or partner's union disruptions).

The ***employed married*** cluster was characterized by 18.1% of men and 12.5% of women within the sample, who worked for mostly the observation period (see Figure 1c). Even when they were 16, more than 20% of them worked. Then, they married quite early: 30% of men and 66% of women were married when they were 26 years old, spending more years in both couple and working than all other clusters. Finally, this cluster had the lowest percentage of women who lived in the South of Italy.

The fourth profile, which I labeled ***employed single,*** was the most numerous for both men and women, accounting for 33-35% of the childless sample, and a very homogeneous one (see Figure 1d). Men and women who belonged to this group worked for mostly of the observation period, as the previous one but, on the contrary, they did not experiment a union. 80% of women and 84% of men never entered a union, where the residual people lived a relationship only for few years. For both genders, the *employed single* condition was prevalent in the youngest cohorts, particularly among men; at the same time, *employed married* men and women decreased. A plausible hypothesis is that, for younger cohorts, having a relationship is less relevant than in the past, thus implying a more marked diffusion of the singlehood instead of partnership status (Esping-Andersen, Bellani, & Nedoluzhko, 2016).

While for the first four profiles the analysis revealed a certain similarity across men and women, the next profiles are gender-specific. First, as for women, the analysis detected the presence of a profile, labeled ***self-employed women*****, which** grouped the 11.6% of childless women who mostly worked as self-employed (see Figure 1e). Nevertheless, it is varied as for union history. Most self-employed women were single and many of them never entered a union (41.5%); despite that, there was also a considerable proportion who was married, and a not negligible group who cohabited after 30 years old.

As for men, two different clusters corresponded to this female profile, sharing many similarities with it (see Figures 1g and 1h). The ***self-employed married*** profile was the least numerous among childless men (7.5%), and characterized by men who worked as self-employed and were married. Unlike women, cohabitation was almost absent among men. Differently, the ***self- employed single*** profile (11.8%) was formed by men who worked as self-employed, but they did not get married. More than three quarters of them never lived a union.

The last woman-specific profile, namely the ***stay-at-home wives,*** was composed by married women who never (or rarely) worked (see Figure 1f). All of them experienced a union, and for long periods - the average number of years spent in each union was the biggest one among childless women. This cluster had the highest percentage of women with primary education and the lowest percentage with tertiary education. This cluster was somewhat the "opposite" group of the *more educated, unstable work and union* cluster, because it represented the most traditional woman's behavior, those of homemakers. Indeed, it was more prevalent in the older cohorts and decreased among younger generations, who participated more often to the labor market.

In sum, there were some clusters where the lack of union seemed to be the common factor for childlessness, namely the *employed single*, the *self-employed women* and the *self-employed single*

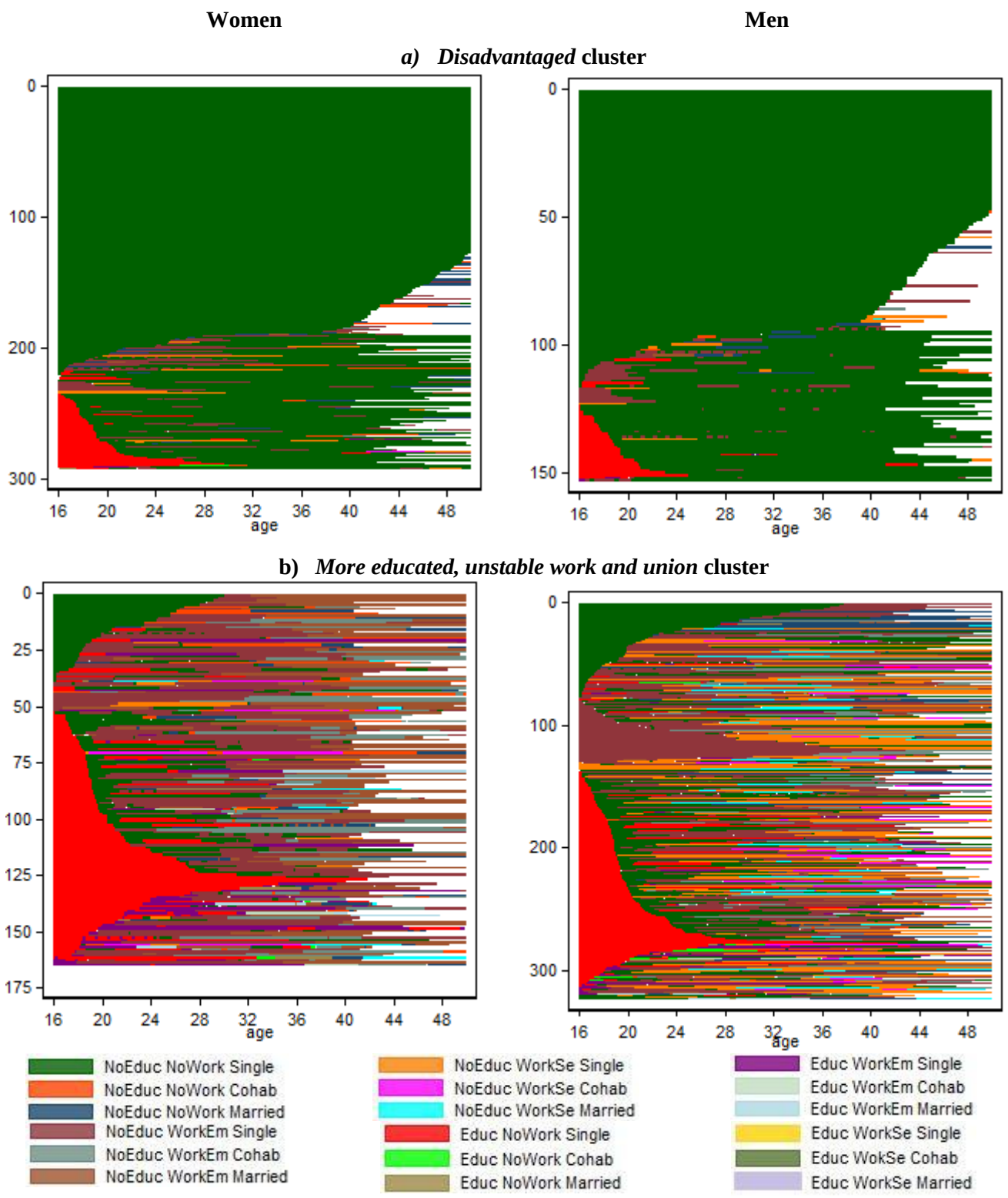
men[5]. Furthermore, there were some clusters where other determinants could act together with the absence of a partner, as in the *disadvantaged* one: in this case, more elements seemed to concur to childlessness, such as the absence of a partner, health problems, economic difficulties and non-employment, especially for men (see Tables A7 and A8). Finally, there were other clusters where the "missing children" could be attributable to other factors, because people had experimented one or more unions during the observation period, namely, the *employed married*, the *more educated, unstable work and union*, the *self-employed married* men and the *stay-at-home wives*. Clearly, these final clusters were the most compelling ones, because they presumably gathered many different explanations that had led to childlessness. Among these causes, there could be union interruption, late entry into union, presence of fecundity problems, the postponement of childbearing till it was no more possible (permanent postponers), or the will of not having children (child-free behavior).

The next step of the analysis thus serves to understand how these pathways and single life course careers intertwine with fertility intentions of the youngest cohort.

[5] The lack of union could be a choice or an occurring event that in both cases leads to childlessness.

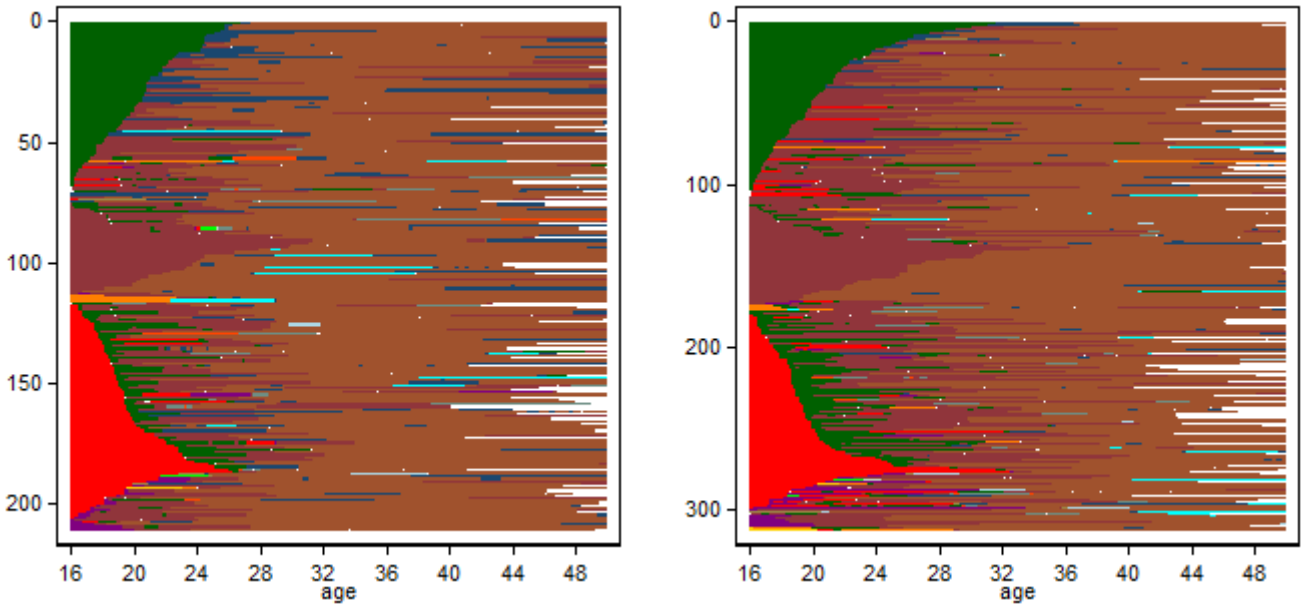
Figure 1 – Sequence index plots by age, gender and cluster belonging.

Sequence index plots use line segments to show how individuals move between a set of conditions or states over time. Changes of state are shown by changes of color. Individuals are reported on the y-axis, whereas time is reported on the x-axis.

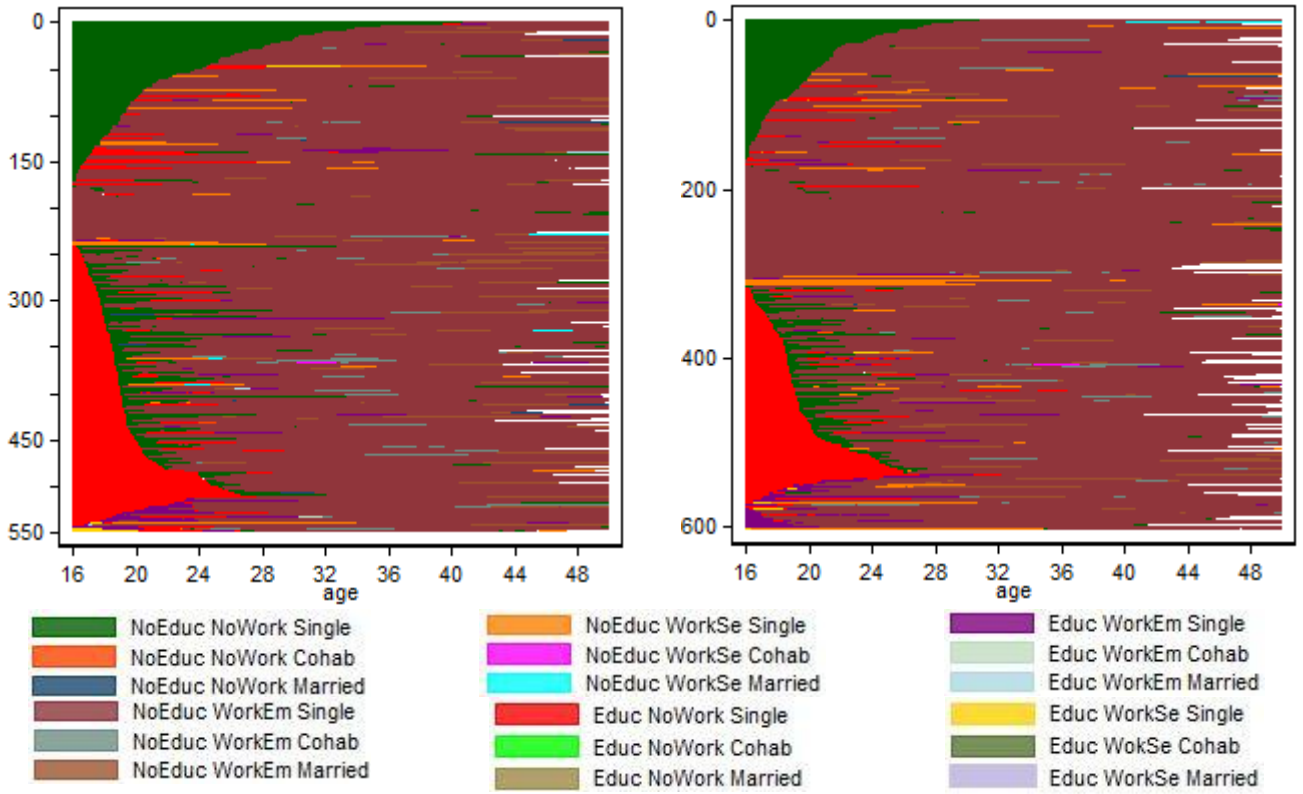


Women **Men**

c) *Employed married* cluster

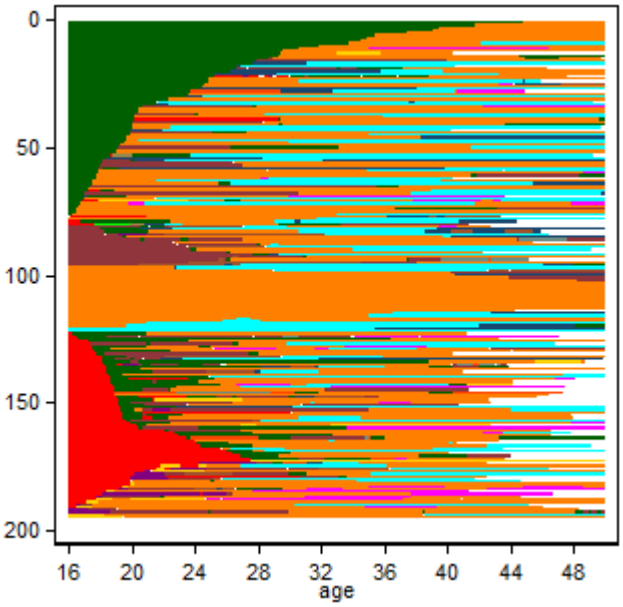


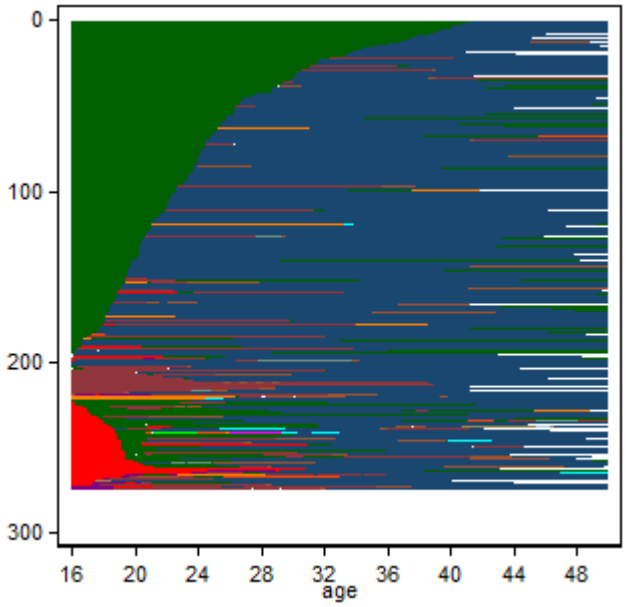
d) *Employed single* cluster



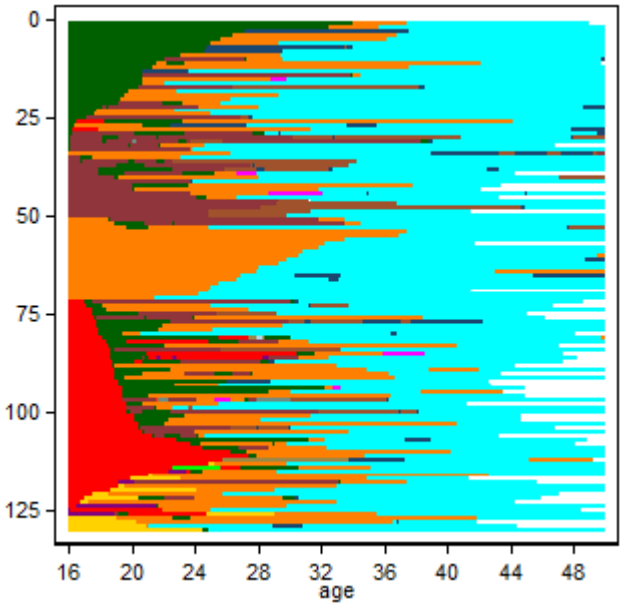
Women **Men**

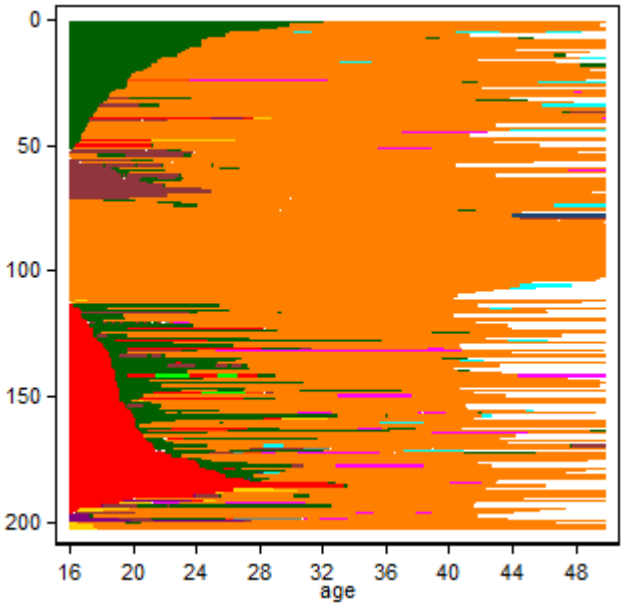
e) *Self-employed women* cluster **f) *Stay-at-home wives* cluster**

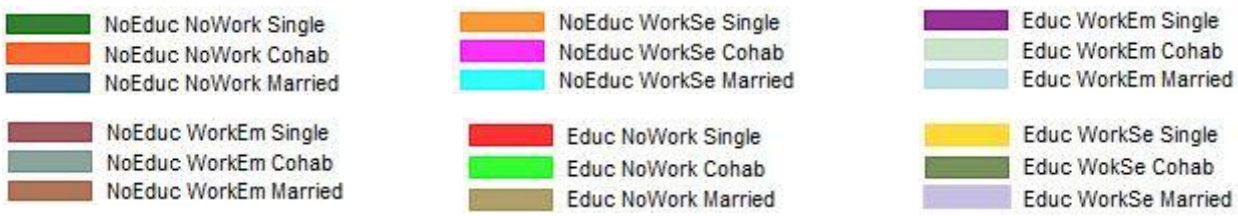




g) Self-employed married men cluster **h) Self-employed single men cluster**







4. Fertility intentions

4.1 Modeling fertility intentions

In the second part of the analyses, I modeled fertility intentions of the youngest childless men and women (the 1960-1969 birth cohorts), disentangling fertility intentions according to childless people's profiles. In this case, the sample was formed by 685 men and 490 women, who did not have children and who were 40-49 years old at the interview date.

I estimated a logistic regression model with robust standard errors, predicting future fertility intentions as expressed at the interview date. Because this study drew attention not to the timing of fertility plans, but to the decision-making itself, I categorized a positive answer if the respondent expressed the intention of having a child within the next three years, or in a more distant future. In addition, given the age of the sample, short-term fertility intentions often reflected overall fertility plans, especially for women (Table 3). Each sample was modeled separately according to gender, because men's fertility intentions might differ from those of women, especially after 40 years (Berrington, 2004).

Table 3 – Fertility intentions in the future, and within the next three years. Childless men and women (1960-1969 birth cohorts).

Fertility intentions in the future	Childless women		Childless men	
	abs. value	%	abs. value	%
no	368	75.1	365	53.3
yes	122	24.9	320	46.7
of whom within 3 years	*102*	*83.6*	*228*	*71.3*
Total	**490**	**100.0**	**685**	**100.0**

Source: Own elaborations on 2009 FSS data.

The key explanatory variable was the cluster to which each observation belonged: this allowed verifying if and how fertility intentions varied across groups, according to the childless women's and men's life course trajectories that each cluster symbolized.

Models also accounted for several confounders. Firstly, I included age, because fertility intentions usually decline with age (Iacovou & Tavares, 2011). Based on previous literature, I took into account an ongoing living-apart-together (LAT) relationship, which could influence fertility intentions, and the presence of long-term or chronic health problems that could negatively affect fertility plans (Tanturri & Mencarini, 2007); I considered possible economic problems, measured through the economic resources of the family in the twelve previous months, which could negatively affect the desire for having children too (De Santis, 2004; Keizer, Dykstra, & Poortman, 2010). As a proxy of the assistance provided to parents, which could negatively influence childbearing (Lee & Gramotnev, 2006), a binary covariate on parents' serious health problems without daily caregiver was added. In addition, because of the peculiarities of the Italian setting, I added the area of residence, because the South of Italy could symbolize the attachment towards traditional behaviors (Tanturri & Mencarini, 2008).

4.2 Fertility intentions across childless profiles

Table 4 shows model results in terms of odds ratios and predicted probabilities to have children in the future according to the childless profiles, for women and men (see Table A9 in the Appendix for the full model results).

Looking at the model for women, each cluster had a higher probability to have a child in the future than the reference category, namely the *employed married* women. Even more, the *more educated, unstable work and union* women had the highest fertility intentions (nearly 4 out of 10 women desired a child in the future), followed by the *self-employed* women. The remaining three clusters – namely the *employed single*, the *disadvantaged* and the *stay-at-home wives* were similar, with approximately 2 out of 10 women who desired to have a child in the future. At first glance, the low odds to have a child in

the future for the two clusters with a prevalence of married women could appear unusual; but, it could actually reveal couple's fecundity problems, so that some of those women could have attempted to have a child in the past and simply give up for the future. Nevertheless, some of them could not desire children, particularly among the employed married ones. On the contrary, the results found for the *more educated, unstable work and union* women suggested that many of these women had simply postponed their parenthood: their life career leaned towards this "late" pattern. In support of this hypotheses, another logistic regression model where clusters were excluded and substituted by the number of years and the number of spells spent in each life career (education, employment, and partnership) was performed (results shown in Table A10 in the Appendix). Confirming this expectation, higher was the time spent in education, as well as the number of spells being married, higher was fertility intentions. To sum up, the three-life course careers appeared closely intertwined for explaining differences in fertility intentions: neither partnership, nor employment per se were univocally related to a higher/lower desire for children, whereas only prolonged education seemed to be relevant for fertility intentions.

Looking at results for men (see again Table 4), fertility intentions were the lowest for the *disadvantaged* group, with less than 1 out of 10 men who desired a child in the future; on the other side, the highest intentions were for the *self-employed married*, where nearly 4 out of 10 men desired to have a child in the future. The other four clusters were more similar than the two previously mentioned ones, and positioned themselves in the middle between the two. The disadvantaged group appeared as an outlier compared to the others. Among other things that could influence such a decision, non-employment was likely strongly associated with the very low probability to have children in the future. For men, higher were both the number of years and the number of spells spent in employment, higher was fertility intentions in the control model (see Table A10 in the Appendix). At the same time, even

the number of spells spent in union significantly reported higher fertility intentions. To sum up, men's results showed that employment had a noteworthy role in male childbearing intentions for the future.

Even if four out of six clusters were the same, their fertility intentions differed meaningfully between men and women. Rating both groups of clusters from those with the lowest predicted probability to those with the highest one, the order changed between male clusters and female clusters: to sum up, similar childless profiles did not lead to similar attitudes towards fertility intentions.

Table 4 – Logistic regression results on fertility intentions of childless men and women (yes vs. no). Odds ratios, standard errors and predicted probabilities for clusters.

	Childless women			Childless men		
Cluster	pred. prob.	odds ratio	std error	pred. prob.	odds ratio	std error
Employed married	0.112	Ref.		0.258	Ref.	
Employed single	0.198	1.945	0.182***	0.256	0.993	0.048
More educated, unstable work and union	0.394	5.137	0.411***	0.277	1.104	0.037***
Self-employed women	0.295	3.304	0.267***	-	-	
Self-employed married men	-	-		0.391	1.849	0.058***
Self-employed single men	-	-		0.275	1.094	0.056*
Stay-at-home wives	0.198	1.945	0.234***	-	-	
Disadvantaged	0.191	1.864	0.276***	0.068	0.211	0.008***

Notes:

1. Outcomes are controlled for an ongoing LAT relationship, the presence of long-term or chronic health problems, the economic resources of the family, the age, a binary covariate on parents' serious health problems without daily caregiver, the area of residence.
2. Fertility intentions are higher than the reference category when odds ratios are >1, lower when <1.
3. Predicted probabilities are referred to a person belonging to that cluster, who is 45, and who is in the reference category for all confounders.
4. *p<0.10, **p<0.05, ***p<0.01

5. Conclusions and discussion

This study explores different aspects of the variegated childless universe. First, it provides a comprehensive description of childless people's profiles according to gender, and to their partnership, employment and educational careers; second, it offers some insights on the fertility intentions of these

differentiated profiles, suggesting how some factors and events leading to childlessness could be related to reproductive choices.

Overall, the findings disclose the biographies of childless men and women, and suggest that childlessness is related to being single mostly, for both men and women but, beside this somewhat expected result, other pathways combining the three different life course careers emerge (see e.g. Mynarska et al., 2015). Both genders show a prolonged education, but a different attitude towards employment: childless women work more than mothers do, childless men work less than fathers do. Childless women's greater presence in the labor market and childless men's lower labor market participation place near their employment career, but the mechanism leading to childlessness is different. In one case, women's greater labor market participation could represent an obstacle towards maternity (especially in Italy, where structured family policies lack) for example; in the other one, men's lower attachment to employment could affect negatively fertility particularly in such a context where the male breadwinner model is still widespread (especially among the older generations). To sum up, for both genders singlehood appears as the main feature among life course of childless universe; then, higher education and work for women (which are closely connected: i.e. Scappini & Trentini, 2016), and work for men.

Looking jointly at the three-life course careers, it emerges clearly that childless people do not follow one pattern, but different trajectories, and some of them are common to both genders: childless men's and women's profiles are more similar than expected. Four out of six clusters correspond across genders: employed married; employed single; high educated, unstable work and union; disadvantaged. The other childless women specific profiles refer to self-employed women and to stay-at-home wives, whereas, the self-employed married men and the self-employed single men identify the two men-specific profiles.

In addition, this study adds a new perspective to the previous literature. Beside the identification of the variety of paths leading to childlessness, fertility intentions of nearly ultimate childless people were explored. Such an approach allowed detecting some new insights, namely similarities or differences in fertility expectations in terms of the identified profiles, in a gender perspective and in the light of each life course career. As for the female group, women who lived in union for long time have a lower desire for childbearing in the future, whereas higher intentions may be found in women who experimented late and unstable unions. A prolonged education too was associated with higher fertility intentions. In addition, my results show that, employment and singlehood do not affect childless women's late fertility intentions. As for men, late fertility intentions seem to be related to partnership and employment. In particular, as non-employment constitutes a well-recognized cause for childlessness, it plays a role not only in constraining male fertility behavior, but also in lowering male fertility intentions. Instead, as for women living unstable unions positively influences male childbearing intentions.

In conclusion, childless men and childless women have similar life course trajectories in terms of education, employment, and partnership. Instead, late fertility expectations are associated both with shared traits and with different characteristics. Many well-established causes that lead to childlessness - such as late entry into union and union interruption (Connidis & McMullin, 1996; Parr, 2010; Tanturri & Mencarini, 2008) - are also those associated with higher fertility intentions of the childless universe. Women's education, too, affects the desire for children in the same direction (Hoem, Neyer, & Andersson, 2006; Keizer, Dykstra, & Jansen, 2008; Sobotka, 2004). On the contrary, men's non-employment, a well-recognized cause for childlessness (see e.g. Keizer, Dykstra, & Poortman, 2010; Parr, 2010), is the only factor that is associated with lower fertility intentions, thus acting as the strongest detrimental factor for fertility during all life span.

This paper does have implications for future research. Possible extensions would need to take into account fecundity problems of the individual or of the couple. Of course, this factor could be crucial at the individual level to explain other differences among clusters. However, more useful information to explain childless people's behavior towards childbearing would be if the person has never attempted to have children in the past. Then, another important issue would be to take into account fertility intentions at different points in time. This temporal information could enhance the comprehension of voluntary or involuntary factors leading to childlessness, and provide some more insights on how childbearing expectations are intertwined with other life course careers and if and how fertility expectations vary over time in this selected group. Moreover, information about LAT relationships over the life course could help to better distinguish the different profiles according to the partnership condition; unfortunately, this information was available only at the interview date. Data such as LAT relationships, fecundity problems and prospective fertility intentions are not collected in many large-scale, representative surveys; furthermore, fecundity problems are usually asked to women only. An important challenge in the years to come is to overwhelm these data limitations, if we wish to deeply investigate the emergence of the childless universe. Furthermore, a greater attention should be devoted to singleness. As being childless is often associated with being single, focusing on this latter population segment could give some useful insights for the comprehension of childless people.

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Appendix

Table A1 – Childless men's and women's sample and parents' sample

	Childless women		Mothers	
Cohort	abs. value	%	abs. value	%
1907-1929	232	13.8	1,346	12.9
1930-1939	299	17.7	2,017	19.3
1940-1949	283	16.8	2,178	20.9
1950-1959	327	19.4	2,381	22.8
1960-1969	546	32.4	2,507	24.0
Total	1,687	100.0	10,429	100.0

Source: Own elaborations on 2009 FSS data.

Figure A1 – State distribution by age. Childless women and mothers

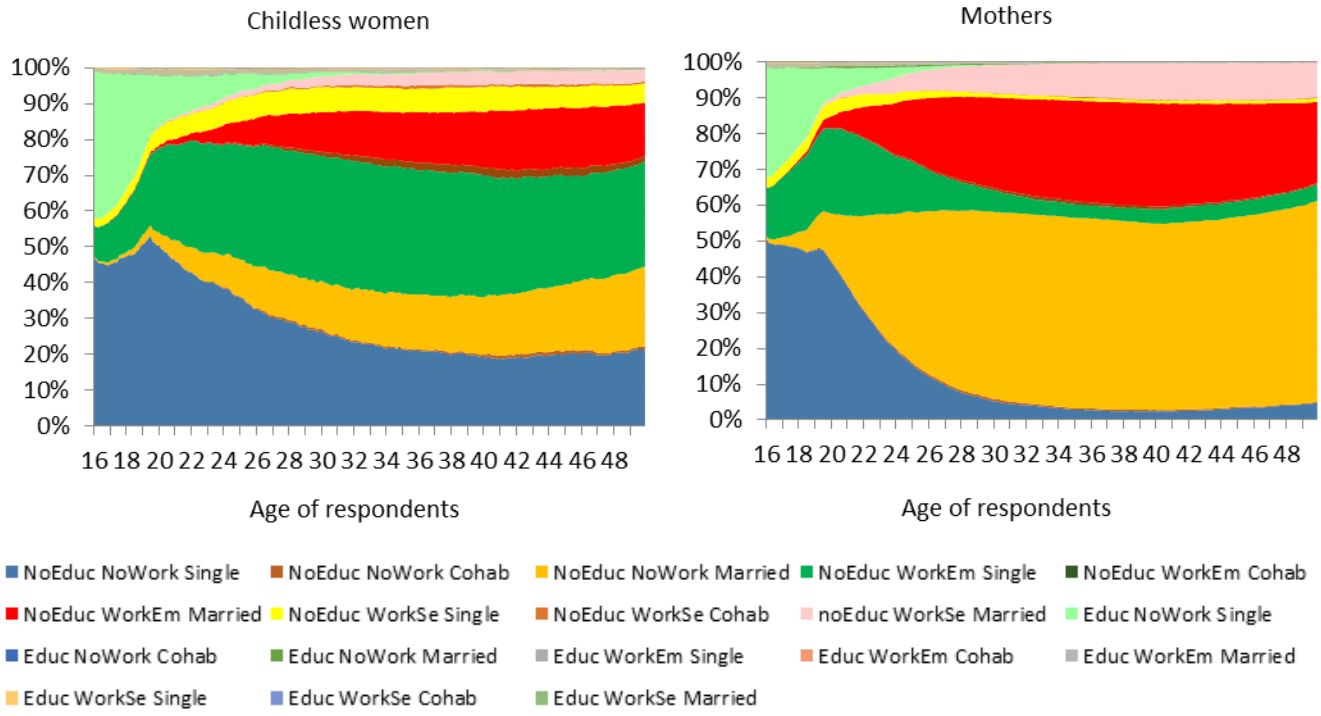

Figure A2 – State distribution by age. Childless men and fathers

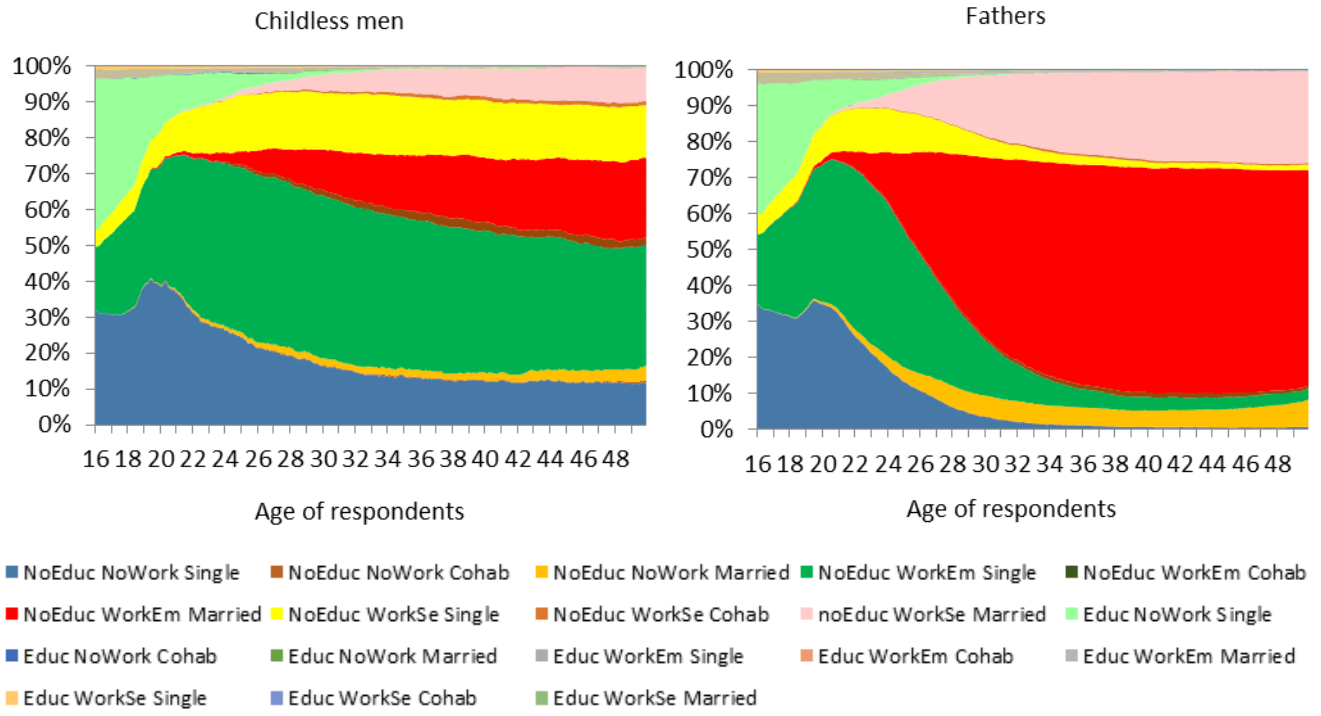

Table A2 - Average number of years spent in each state. Observation period: from 16 to 40. Childless women and mothers

	CHILDLESS WOMEN									
	1907-1929		1930-1939		1940-1949		1950-1959		1960-1969	
States	mean	std dev.	mean	std dev.	mean	std dev.	mean	std dev.	mean	std dev.
Education										
In education	0.6	2.3	0.9	2.3	1.6	3.1	3.1	4.1	3.4	4.5
Not in education	23.4	2.3	23.1	2.3	22.4	3.1	20.9	4.1	20.6	4.5
Employment										
Not working	13.4	9.9	13.6	9.3	11.8	9.1	11.4	8.4	11.8	8.1
Working as employed	7.2	9.0	8.4	9.0	10.4	9.1	11.2	8.6	10.3	8.2
Working as self-employed	3.4	7.7	2.1	5.7	1.8	5.2	1.4	4.3	1.9	5.0
Partnership										
Single	18.5	7.5	18.1	7.8	16.8	0.0	18.6	7.3	19.7	6.3
Cohabitation	0.1	1.1	0.1	0.7	0.3	0.0	0.7	2.5	0.7	2.2
Marriage	5.4	7.5	5.9	7.8	6.9	0.0	4.7	7.1	3.6	6.0

	MOTHERS									
	1907-1929		1930-1939		1940-1949		1950-1959		1960-1969	
States	mean	std dev.	mean	std dev.	mean	std dev.	mean	std dev.	mean	std dev.
Education										
In education	0.3	1.3	0.4	1.7	1.0	2.4	1.8	3.0	2.5	3.4
Not in education	23.7	1.3	23.6	1.7	23.0	2.4	22.2	3.0	21.5	3.4
Employment										
Not working	17.1	9.0	16.5	8.7	14.8	8.8	13.8	8.8	13.2	8.3
Working as employed	4.4	7.5	5.2	7.6	7.5	8.2	8.7	8.6	9.3	8.2
Working as self-employed	2.5	6.5	2.3	6.1	1.8	5.2	1.5	4.7	1.6	4.7
Partnership										
Single	8.8	5.2	8.3	4.6	7.9	4.7	7.7	5.0	9.7	5.4
Cohabitation	0.1	1.3	0.1	0.9	0.1	1.0	0.3	1.7	0.7	2.4
Marriage	15.2	5.3	15.6	4.7	16.0	4.8	16.0	5.3	13.7	5.9

Table A3 - Average number of years spent in each state. Observation period: from 16 to 40. Childless men and fathers

	CHILDLESS MEN									
	1907-1929		1930-1939		1940-1949		1950-1959		1960-1969	
States	mean	std dev.	mean	std dev.	mean	std dev.	mean	std dev.	mean	std dev.
Education										
In education	1.1	2.7	0.9	2.5	1.9	3.6	2.8	3.9	2.7	3.8
Not in education	22.9	2.7	23.1	2.5	22.1	3.6	21.2	3.9	21.3	3.8
Employment										
Not working	7.9	8.1	5.6	7.2	6.3	7.1	7.8	7.3	8.4	7.3
Working as employed	10.7	9.6	12.2	9.8	13.2	9.2	12.8	8.6	11.6	8.7
Working as self-employed	5.3	8.9	6.2	9.1	4.5	9.2	3.4	6.6	4.0	7.1
Partnership										
Single	17.7	7.0	19.5	6.0	19.3	6.4	20.7	5.5	21.2	4.7
Cohabitation	0.0	0.0	0.1	0.7	0.3	1.4	0.6	2.1	0.7	2.1
Marriage	6.3	7.0	4.4	6.1	4.5	6.4	2.7	5.2	2.1	4.3

	FATHERS									
	1907-1929		1930-1939		1940-1949		1950-1959		1960-1969	
States	mean	std dev.	mean	std dev.	mean	std dev.	mean	std dev.	mean	std dev.
Education										
In education	0.9	2.6	1.1	2.9	1.8	3.4	2.3	3.3	2.4	3.3
Not in education	23.1	2.6	23.0	2.9	22.2	3.4	21.7	3.3	21.6	3.3
Employment										
Not working	5.7	6.7	5.0	5.8	4.8	5.4	5.7	5.7	6.0	5.4
Working as employed	12.5	9.3	14.1	8.8	14.8	8.4	14.2	8.3	13.7	8.2
Working as self-employed	5.8	9.0	5.0	8.3	4.4	7.6	4.1	7.1	4.3	7.3
Partnership										
Single	12.5	4.9	11.6	4.2	11.0	4.3	11.3	4.8	12.5	4.9
Cohabitation	0.0	0.5	0.1	0.9	0.1	1.1	0.3	1.5	0.7	2.3
Marriage	11.5	4.9	12.3	4.3	12.9	4.4	12.4	5.0	10.8	5.3

Table A4 - Distribution of childless sample and parents by main socio-demographic information (derived from sequence analysis and from the FSS 2009 survey).

		Women		Men	
Sample		Childless women	Mothers	Childless men	Fathers
Number		1,687	10,429	1,727	8,688
Union	Never in a union (%)	792 (47.0%)	78 (0.8%)	942 (54.6%)	43 (0.5%)
	Average years spent in union (only women who have entered union)	16.9	23.8	14.0	20.7
	Mean number of union spells	0.6	1.2	0.5	1.1
Education	Women with primary education (%)	585 (34.7%)	4,834 (46.4%)	443 (25.7%)	2,872 (33.1%)
	Women with tertiary education (%)	174 (10.3%)	599 (5.7%)	152 (8.8%)	555 (6.4%)
	Mean number of education spells	0.5	0.4	0.6	0.5
Employment	Never worked (%)	414 (24.5%)	3,429 (32.9%)	123 (7.1%)	113 (1.3%)
	Average years spent working (only women who have worked)	22.2	19.4	24.7	27.1
	Mean number of employment spells	1.4	1.2	1.9	1.9

Table A5 - Childless women according to cluster and birth cohort.

Cluster	1907-1929		1930-1939		1940-1949		1950-1959		1960-1969	
	abs.v.	%	abs.v	%	abs.v	%	abs.v	%	abs.v	%
Disadvantaged	45	19.4	57	19.1	41	14.5	49	15.0	100	18.3
More educated, unstable work and union	5	2.2	18	6.0	19	6.7	35	10.7	88	16.1
Stay-at-home wives	55	23.7	70	23.4	63	22.3	41	12.5	46	8.4
Employed married	23	9.9	30	10.0	53	18.7	52	15.9	53	9.7
Employed single	60	25.9	90	30.1	83	29.3	124	37.9	192	35.2
Self-employed women	44	19.0	34	11.4	24	8.5	26	8.0	67	12.3
Total	**232**	**100.0**	**299**	**100.0**	**283**	**100.0**	**327**	**100.0**	**546**	**100.0**

Table A6 - Childless men according to cluster and birth cohort.

Cluster	1907-1929		1930-1939		1940-1949		1950-1959		1960-1969	
	abs.v	%	abs.v	%	abs.v	%	abs.v	%	abs.v	%
Disadvantaged	5	6.2	14	6.9	22	7.8	39	9.6	73	9.7
More educated, unstable work and union	13	16.0	24	11.8	32	11.3	77	18.9	177	23.5
Employed married	28	34.6	51	25.1	64	22.7	73	17.9	97	12.9
Employed single	15	18.5	58	28.6	106	37.6	154	37.8	272	36.1
Self-employed married	10	12.3	23	11.3	31	11.0	23	5.7	43	5.7
Self-single single	10	12.3	33	16.3	27	9.6	41	10.1	92	12.2
Total	**81**	**100.0**	**203**	**100.0**	**282**	**100.0**	**407**	**100.0**	**754**	**100.0**

Table A7 - Distribution of childless women by cluster and main socio-demographic information (derived from sequence analysis and from the FSS 2009 survey).

Cluster		Disadvantaged	More educated, unstable work and union	Stay-at-home wives	Employed married	Employed single	Self-employed
Number of women		292	165	275	211	549	195
Union	Never in a union (%)	247 (84.6%)	24 (14.6%)	/	/	440 (80.2%)	81 (41.5%)
	Average years spent in union (only women who have entered union)	3.4	12.8	22.3	23.1	4.4	14.8
	Mean number of union spells (only women who have entered union)	1.1	1.4	1.1	1.1	1.2	1.3
Education	Women with primary education (%)	163 (55.8%)	17 (10.3%)	154 (56.0%)	63 (29.9%)	113 (20.6%)	75 (38.5%)
	Women with tertiary education (%)	8 (2.7%)	45 (27.3%)	5 (1.8%)	21 (10.0%)	72 (13.1%)	23 (11.8%)
	Average years spent studying (all women)	0.9	7.2	0.8	1.9	2.5	2.3
Employment	Never worked (%)	224 (76.7%)	4 (2.4%)	186 (67.6%)	/	/	/
	Average years spent working (only women who have worked)	6.0	20.1	8.0	26.6	24.4	24.9
	Mean number of employment spells (only women who have worked)	1.8	2.1	1.5	1.9	1.8	1.8
Other Information (at the interview date)	Women who have long-term health problems (%)	107 (36.6%)	26 (15.8%)	93 (33.8%)	53 (25.1%)	140 (25.5%)	56 (28.7%)
	Women who live in the South of Italy (%)	199 (68.2%)	46 (27.9%)	132 (48.0%)	38 (18.0%)	170 (31.0%)	55 (28.2%)
	Women whose families have low or insufficient economic resources during the previous year (%)	150 (51.4%)	39 (23.6%)	128 (46.6%)	54 (25.6%)	184 (33.5%)	82 (42.1%)

Table A8 - Distribution of childless men by cluster and main socio-demographic information (derived from sequence analysis and from the FSS 2009 survey).

Cluster		Disadvantaged	More educated, unstable work and union	Employed married	Employed single	Self-employed married	Self-employed single
Number of men		153	323	313	605	130	203
Union	Never in a union (%)	140 (91.5%)	134 (41.5%)	/	508 (84.0%)	/	160 (78.8%)
	Average years spent in union (only men who have entered union)	3.7	11.7	18.5	3.4	18.5	3.8
	Mean number of union spells (only men who have entered union)	1.2	1.4	1.1	1.2	1.1	1.2
Education	Men with primary education (%)	76 (49.7%)	54 (16.7%)	88 (28.1%)	123 (20.3%)	40 (30.8%)	62 (30.5%)
	Men with tertiary education (%)	1 (0.7%)	47 (14.6%)	20 (6.4%)	45 (7.4%)	14 (10.8%)	25 (12.3%)
	Average years spent studying (all men)	0.7	3.8	2.2	2.0	2.4	2.4
Employment	Never worked (%)	108 (70.6%)	15 (4.6%)	/	/	/	/
	Average years spent working (only men who have worked)	4.0	20.1	26.9	26.4	27.5	26.3
	Mean number of employment spells (only men who have worked)	2.3	2.4	2.0	2.1	2.0	1.5
Other information (at the interview date)	Men who have long-term health problems (%)	66 (43.1%)	82 (25.4%)	72 (23.0%)	118 (19.5%)	27 (20.8%)	30 (14.8%)
	Men who live in the South of Italy (%)	110 (71.9%)	89 (27.6%)	95 (30.4%)	181 (29.9%)	43 (33.1%)	72 (35.5%)
	Men whose families have low or insufficient economic resources during the previous year (%)	100 (65.4%)	124 (38.4%)	103 (32.9%)	211 (34.9%)	37 (28.5%)	73 (36.0%)

Table A9 – Logistic regression results on fertility intentions of childless men and women. Full model results.

Covariates	Childless women odds ratio	std error		Childless men odds ratio	std error	
Age (centered at 45)	0.719	0.019	***	0.836	0.023	***
Lat relationship (Ref. No)						
Yes	1.751	0.876		2.611	0.546	***
Long-term or chronic health problems (Ref. No)						
Yes	0.399	0.072	***	0.776	0.198	
Area of residence (Ref. Nord-Center of Italy)						
South of Italy	1.594	0.303	**	3.016	0.526	***
Parents' health problems (Ref. No)						
Yes	0.861	0.321		1.055	0.317	
Economic resources of the family (Ref. adequate/good)						
Low/insufficient	0.687	0.095	***	1.320	0.224	
Cluster (Ref. Employed married)						
Employed single	1.945	0.182	***	0.993	0.048	
More educated, unstable work and union	5.137	0.411	***	1.104	0.037	***
Self-employed women	3.304	0.267	***	-		
Self-employed married men	-			1.849	0.058	***
Self-employed single men	-			1.094	0.056	*
Stay-at-home wives	1.945	0.234	***	-		
Disadvantaged	1.864	0.276	***	0.211	0.008	***

Note:
Fertility intentions are higher than the reference category when odds ratios are >1, lower when <1.
* p-value<0.10, ** p-value<0.05, *** p-value<0.01

Table A10 – Logistic regression results on fertility intentions of childless men and women. Full model results (model with synthetic measures of SA).

	Childless women			Childless men		
Covariates	odds ratio	std error		odds ratio	std error	
Age (centered at 45)	0.705	0.022	***	0.849	0.019	***
Lat relationship (Ref. No)						
Yes	1.503	0.823		2.418	0.599	***
Long-term or chronic health problems (Ref. No)						
Yes	0.469	0.052	***	0.796	0.209	
Area of residence (Ref. Nord-Center of Italy)						
South of Italy	1.753	0.333	***	3.171	0.533	***
Parents' health problems (Ref. No)						
Yes	0.841	0.373		1.106	0.251	
Economic resources of the family (Ref. adequate/good)						
Low/insufficient	0.697	0.125	**	1.363	0.214	**
Time spent from 16 to 40						
In education	1.006	0.002	***	1.000	0.003	
As employed	1.000	0.001		1.004	0.001	***
As self-employed	1.000	0.001		1.003	0.003	
Cohabiting	0.991	0.009		1.005	0.003	*
Being married	0.991	0.001	***	0.991	0.003	***
Number of spells from 16 to 40						
In education	0.996	0.151		1.857	0.267	***
As employed	1.011	0.054		1.108	0.061	*
As self-employed	1.227	0.260		1.348	0.598	
Cohabiting	2.017	0.910		0.680	0.208	
Being married	2.627	0.878	***	2.604	0.897	***

Note:
Fertility intentions are higher than the reference category when odds ratios are >1, lower when <1.
* p-value<0.10, ** p-value<0.05, *** p-value<0.01.