Employment trajectories and fertility in Italy

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Introduction

Many studies have been devoted to study the relationship between fertility and occupational status with the assumption that the lack of income or the economic uncertainty related to some occupational statuses are crucial factors in interpreting the constraints driving fertility decisions in industrialized countries. Empirical analyses on this point is however not consistent: while the macro-perspective suggests that a fertility decline may be associated with periods of economic hardship (see, for example, Billari and Kohler, 2004), the micro-evidence presents more mixed results (Cazzola et al., 2016). Studies focusing on unemployment report no effect on the reproductive behaviours of women (for Germany, see Kreyenfeld, 2010), while others show a detrimental effect of job loss and atypical employment on the transitions to motherhood (Barbieri et al., 2015); a positive impact of unemployment among lower educated women is found as well (Kreyenfeld, 2010). Similarly, results for men are contradictory too (Özcan et al., 2010; Vignoli et al., 2012).

According to literature, such results may be partially explained assuming that the role of employment conditions may vary by country and gender. Basically, in male-breadwinner societies with weaker welfare systems male partner's economic situation has been found to be more influential than the female one (Kreyenfeld, 2010). Nevertheless, most of these studies are affected by some limitations that may have contributed to make empirical results on the relationship between employment status and fertility behaviour less consistent. Using an Event-History Approach, they focus, indeed, on individual work statuses, which are static measures of work episodes. However, perceptions of economic vulnerability or instability are likely be influenced not only by current situation but also by future scenarios/prospects, which in turn are defined by past employment experience. Moreover, such studies mainly address the single transitions from a parity to another (often that to first child), thus timing and quantum effects are mixed and the effect of individual's employment insecurity on completed fertility (considering also some "catch up" effect) are difficult to examine. Only recently, indeed, researchers have tried to study the role of employment histories (see, for example, Ciganda, 2015), but, again, mixed results emerge.

The current paper is inserted in this line of research, with the aim of analyse the relationship between individual employment/education carrier and cumulated fertility for individuals born between 1956 and 1971. More specifically, we are interested in examining whether and how the characteristics of the entire employment/education biography by age 30: a) impacts on the cumulated fertility at the age of 30; b) has even consequences on the completed fertility (at age 45). To do this, we consider sequence analysis to describe the work/education histories of individuals, with the aim to account for complex time-related interdependencies among employment episodes (Piccarreta and Studer, 2019). The analyses are conducted separately for men and women.

Italian context and research questions

The focus is on Italy, a country that is worthwhile to be examined from a demographic and socio-economic point of view. Demographically, Italy is a country with one of the lowest fertility in Europe (Cazzola et al., 2016). Italy is also a country with a delayed transition to adulthood: the process become evident in the early '90s of the past century, when the progressive rise of the age at first marriage - in absence of alternative forms of living arrangements - generated a postponement of all other events of the transition. Age at motherhood of Italian women is indeed sharply increased over the time passing from 24,7 in 1975 to 28,6 in 2000, to 30,8 in 2015 (in 2021 it equals 31,5). From a socio-economic perspective, Italy experienced a strong process of labour market flexibilization in the last decades, which strongly hit the country (Barbieri and Scherer, 2009). The result was a diffusion of different forms of flexible and

temporary contracts, characterized by lower wages and social protection. This process placed temporary employed and unemployed individuals - especially women and young people - in a vulnerable position that the relatively little generous welfare and social security systems were not able to adequately protect. The subsequent economic crises of the new century have further exacerbated the situation. From a gender perspective, Italy is a conservative society where societal arrangements and welfare provisions have not enough evolved to facilitate women in their conciliation of work and family care. Thus, not surprising women present a labour force participation relatively lower in comparison with other European countries (https://data.oecd.org/emp/employment-rate.htm#indicator-chart) and they are still the main caregivers in the household (Aassve et al., 2015). However, the role of women is rapidly changing: their educational attainment increased continuously (more than among men), pushing them to a greater participation to labour force and couples of more recent generations – at least in some areas of the country - show a more egalitarian division of family care.

In this study we are interested in examining whether the employment/education history experienced by Italian young adults (up to the age of 30) has an impact on the fertility achieved at age 30 and at age 45. Our main focus is on generations born between the 1956-1971, thus individuals living in a still relatively stable and traditional societal and economic context. For those, we aim to answer the following questions:

1) Has the type of economic conditions related to the employment/education trajectories till the age of 30 an impact on the cumulated fertility at age 30? 1a) Is this a direct effect on fertility? or is it mediated by marriage status? 1b) Are these effects differentiated according to gender?

2) To what extent the employment/education trajectory up to age 30 has an impact on fertility at age 45? 2a) Is this effect differentiated by gender and type of employment/education trajectories? 2b) to what extent the employment carrier experienced between age 30-45 mediates the effect of previous employment/education carriers (these results are not presented here)? Future analyses on cumulated fertility at 45 which consider also the employment histories between 30 and 45 will try to answer even an additional question: Is the subsequent employment carrier relevant to modify the impact of previous employment/education history on fertility at 45?

Finally, further analyses will be conducted on more recent generations in order to explore whether and how employment/education trajectories by the age of 30 impact in the same way as that observed for the cohorts of the current analysis.

Data and method

The current study uses data from the survey "Families and Social Subjects", conducted by the Italian National Institute of Statistics (Istat) in 2016. The survey is based on a representative sample at the national level of 24,753 people over the age of 18. Besides information on reproductive history of the interviewees, the survey provides retrospective data on each employment episode, from the first job to the eleventh one, allowing the construction of the complete employment histories of individuals. In this paper, we analyse 3525 men and 3700 women aged 45-60 at the time of interview born between 1956 and 1971. Sequence analysis techniques are applied to describe employment trajectories from age 15 to 30, a life stage in which youths typically establish themselves in the labour market and experience the transition to adulthood.

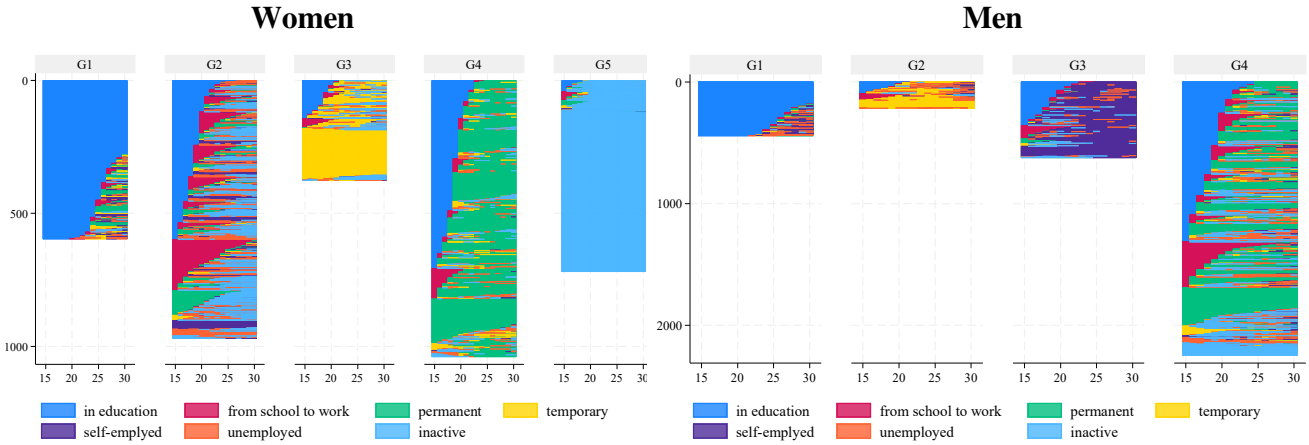
Our approach consists in distinguishing between 7 life-course states: *in education* (based on the year of completed education, plus additional years spent in the educational system); *from school to work* (the time spent between leaving education and starting the first job); *permanent job*; *temporary job* (or fixed-term contracts); *self-employment*; *inactivity* (leaving a job for family reasons or never worked); and *unemployment*. We analyse these sequences by using Optimal Matching to compare each sequence with the others and calculate a matrix of distances and similarities between sequences. The employment/education trajectroies were, then, clustered in groups on the basis of their distances and similarities. The derived typology was used as an independent variable to predict fertility at age 30 and fertility at age 45 in a Poisson regression model (similar results were found using multinomial logistic regression). Control variables included in the models are: number of siblings (0-4+); parental education

(up to lower secondary; secondary; tertiary); mother's and father's employment status at age 14; cohort (1956-61; 1962-66; 1967-71), and Italian macro-region (North; Centre; South). In addition, whether the individual is married at age 30 is taken into account in some models.

Preliminary Results

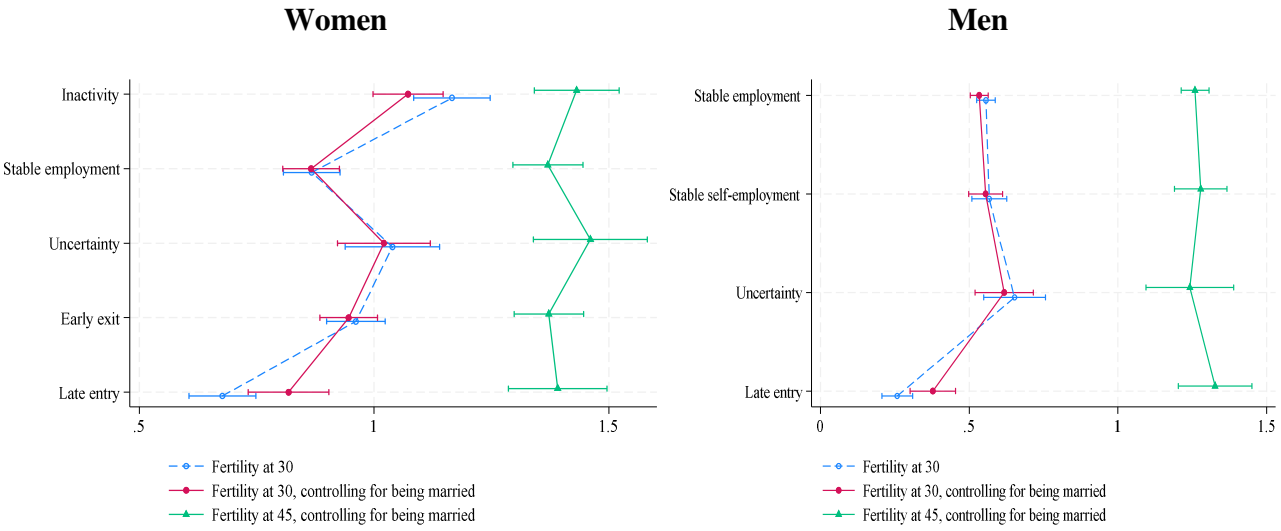
Figure 1 describes the clusters obtained for women's and men's employment histories.
Among women, five clusters were identified: G1 '*Late entry into the labour market'* (16.1%) is characterised by enrolment in higher education, and a postponement of paid work (47% of them are in education at age 30); G2 *'Early exit from the labour market'* (26.2%) is characterised by long periods of inactivity before entering the labour market and an early exit from the labour market; G3 *'Uncertainty'* (10%) is a group defined by fixed-term contracts and some interruptions of inactivity and unemployment; G4 '*Stable employment'* (28%) is characterised by permanent contracts; G5 '*inactivity'* (19.4%) is a group of women never entered in the labour market.
Among men, four clusters are identified: G1 '*Late entry into the labour market'* (12.5%) is characterised by enrolment in higher education and a delayed entry into employment; G2 *'Uncertainty'* (6.1%) is defined by individuals with fixed-term contracts and some interruptions due to unemployment; G3 '*stable self-employment'* (17.7%) are self-employed men (with also some episodes of unemployment); and finally, G4 '*stable employment'* (63.7%) are men in stable employment (with also some episodes of inactivity, unemployment and temporary employment at the very beginning).

Figure 1. Clusters of employment careers.



Poisson regression models were estimated on the parity achieved by individuals at age 30 and 45. In line with our first research question, the results (Figure 2) show that the type of employment/education history is associated with individual fertility at age 30. Both men and women belonging to the group *"late entry"* into the labour market have, on average, fewer children by age 30 than those of the other groups. This negative association becomes smaller when we control for being married at age 30 (research question 1a) and the impact is stronger for men (1b). Moreover, the negative association found at age 30 disappears when we analyse fertility at age 45 (research question 2), thus suggesting that individuals who postpone their entrance into the labor market are able to recover in the long run. The cluster *"uncertainty"* is not associated with lower fertility levels, as one can expect; instead, it seems to foster women's fertility in the first part of life (compared to the category *"stable employment"*). Women who never worked ("*inactivity*") tend to be caracterised by large families at age 30.

Figure 2. Fertility at age 30 and age 45 estimated from Poisson regression models



Concluding remarks and next steps

This study provides some preliminary evidence that the postponement of labour market entry has a short-term negative effect on fertility (partly mediated by marriage). In the future, we intend to analyse the employment histories of men and women between 30 and 45 and their mediating or moderating effect on completed fertility. In addition, we will examine more recent cohorts and their fertility behaviours in the first 30 years of life to compare the role of precarious jobs in older and younger generations.

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