Introduction, theoretical background, and hypotheses

Previous studies attempting a sociological enquiry into the phenomenon of lifelong singlehood (Bellani et al., 2017; Dykstra and Poortman, 2010; Wiik and Dommermuth, 2014) have referred to lifelong singles as individuals who have not experienced a stable residential partnership (either cohabitation or marriage) by the age of 40. From a lifecourse perspective, singlehood can be understood as a failed transition to the status of 'partner' in the standard 'twentieth century' transition to adulthood. In this study, acknowledging the relevance of the interplay between the work and family domains (Aisenbrey and Fasang, 2016) and of between-cohorts comparisons, we focus on the gendered role of education and career investments for the occurrence of lifelong singlehood over cohorts of Italian men and women.

Specifically, our *research questions* are: (1) Are there gender differences in the role of education and career investments for lifelong singlehood? and (2) How has the role of such investments changed over birth cohorts for men and women? Two different theoretical frameworks can be useful in understanding the determinants of lifelong singlehood and their changing role over birth cohorts.

According to the New Home Economics (NHE) perspective (Becker, 1991), because the maximization of marriage gains is achieved through the specialization of partners in complementary activities (paid and unpaid work), the convergence of men's and women's market productivity through investments in education and career decreases the attractiveness of marriage for both sexes. This perspective may explain the higher shares of singles in contexts where the 'masculinization' of female trajectories in the labour market is more pronounced. Moreover, the literature on assortative mating in the marriage market has consistently reported a gender-specific effect of education and career investments on union formation (Blossfeld, 2009; Cantalini, 2017; Corti and Scherer, 2021; De Hauw, Grow and Van Bavel, 2017), with high-educated women and low-educated men facing the highest risks of being left out of the mating market. Given the traditional sex division of paid and unpaid work, union formation lacks attractiveness for highly educated women as it leads to an under-utilization of their human capital. Instead, low educational attainment signaling worse labour market and economic prospects hinders men's chances for partnering. These mechanisms are based on the assumption that individuals rationally choose whether to enter a stable union vis-a-vis the perceived related gains, that depend upon the specialization of the partner in complementary activities. Thus, focusing on Italy, overall we expect that i*nvestments in education and career are positively associated with the occurrence of singlehood for women* (**H 1a**) and *investments in education and career are negatively associated with the occurrence of singlehood for men* (**H 1b**).

While the NHE perspective might have been suited for analyzing societies up to the 1960s, scholars have raised concerns about its adequacy to account for historical change in the division of paid and unpaid labour between partners beyond the male breadwinner model (Oppenheimer, 1988, 1997). In contrast with the NHE theory, Oppenheimer's theory of marriage (Oppenheimer, 1997) argues that changes in men's and women's labour market position, together with increased levels of gender egalitarianism, have altered the dynamics of

marital bargaining. Contrary to the specialization model, Oppenheimer's theory of marriage suggests that individuals derive a greater advantage in marriage from a collaborative model in which both partners contribute financially to the sustenance of the household (Oppenheimer, 1994 in Jalovaara, 2012). More precisely, this perspective predicts that the erosion of the male-breadwinner model and the spread of the dual earner/dual career model have made the characteristics considered ideal in a potential partner more similar between men and women. Accordingly, signals of higher socioeconomic status and good future labour market prospects should represent valuable assets in the mating market for both genders (Sweeney, 2002). Following this perspective and focusing on between-cohorts change, we hypothesize that *the association between investments in education and career and the occurrence of lifelong singlehood has reversed (turned negative) over birth cohorts for Italian women* (**H 2a**) and *the negative association between investments in education and career and the occurrence of lifelong singlehood has weakened over birth cohorts for Italian men* (**H 2b**).

As argued by Liefbroer and Corijn (1999), gender differences in the effect of education and work investment on union formation are highly context-specific. In a familistic welfare state like the Italian one, where welfare provision for working women is low and the overall opportunity structure prevents them from pursuing an active role in the labour market, the interplay between work and family trajectories for women is such that investments in one of the two dimensions negatively impacts the chances to invest in the other. Conversely, for men, investing further in education and career positively affects their likelihood of forming partnerships, as it signals their ability to fulfill the role of main breadwinners. These contextual specificities should be taken into account when interpreting our empirical findings and comparing them with those for different countries.

Data and methods

We rely on data from the ISTAT (Italian National Statistics Institute) Multipurpose Survey (2016), which provides retrospective information on individual and family life courses as well as work histories. The analytical sample includes Italian men and women born between 1913 and 1998 (N=18,996), who have been grouped in three birth cohorts.

In accordance with existing research (Bellani et al., 2017; Dykstra and Poortman, 2010; Wiik and Dommermuth, 2014), we define lifelong singles those individuals who have not experienced significant cohabitation (i.e., lasting at least 2 years) or marriage episodes by age 40.

To provide a descriptive overview of the phenomenon, we perform Kaplan-Meier failure curves illustrating the proportion of men and women experiencing a significant partnering event from age 18 to age 40, for the different birth cohorts. We then turn to logistic regressions with the dependent variable indicating whether the individual is a lifelong single (value 1) or not (value 0). The main explanatory variables are the individual educational attainment (measured via a categorical variable ranging from 1 "Low" to 3 "High"), the proportion of time spent in employment over the observed span from the conclusion of education, individual occupational class and time spent in atypical duration over the observed

span. We further control for age, age squared, macroregion of residence and whether respondent's parents are divorced or not. All estimates are population-weighted.

Results

Our preliminary results indicate that the proportion of lifelong singles has increased over time, moving from 9% in the birth cohort of individuals born previous to 1960 to 60% in the youngest birth cohort of individuals born from 1975 onwards (Figure 1). Interestingly, the proportion of women remaining single is lower than the one of men. If gender differences disappeared around age 32 in the cohort <1960 (as by this age both single men and women remained at a stable level), they remained visible for later birth cohorts. Focusing on the one >=1975, men who remained single by age 40 are the 67%, while women are the 54%.
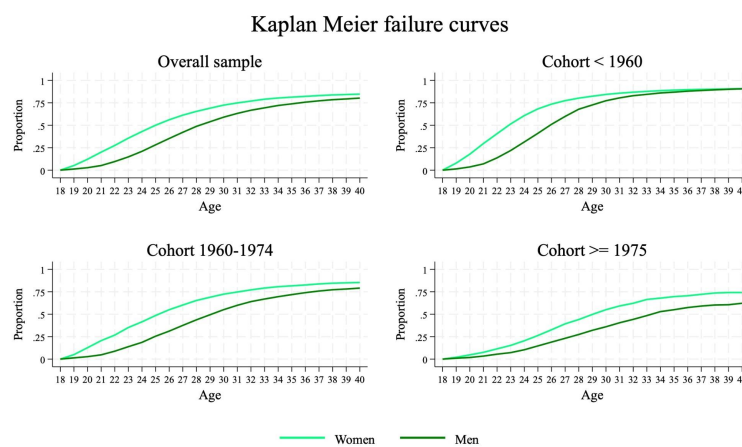

Figure 1. Kaplan-Meier failure function of the time to the first significant partnering event.
Data: FSS (2016), weighted.

Moving to the determinants of lifelong singlehood and their differential role by gender, Figure 2 illustrates average marginal effects (AME) derived from logistic regressions, separately for men and women. For both genders, the higher the educational level, the higher the chances of being single by the age of 40. However, the higher the proportion of time spent in employment, the higher the likelihood to remain single for women and the lower the one for men. Educational level and time spent in employment confirm the NHE-related expectation that investments in education/career lead to a higher likelihood of remaining single for women (H1a), while only employment time confirms the expectation of a negative association for men (H1b).
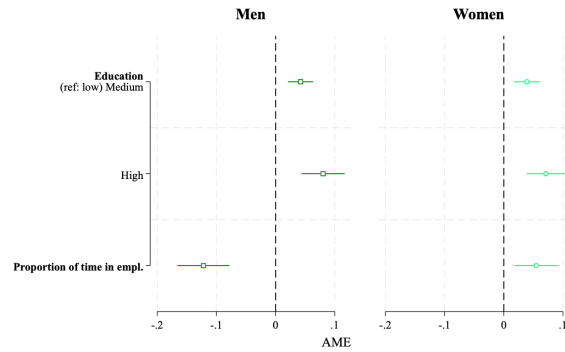
Figure 2. Average Marginal Effects from logistic regressions of the likelihood of being lifelong single. Control variables: occupational class, atypical employment duration, birth cohort, age, age squared, whether parents are divorced, macroregion of residence.
Data: FSS (2016), weighted.

Concerning how the role of these investments has changed over cohorts, the positive AME related to educational level for women does not turn negative over birth cohorts (as predicted by H2a). On the contrary, a stronger effect can be observed in the youngest birth cohort. Time in employment presents a pattern in line with H2a, as its role turns null for women over cohorts. For men, the role of both education and career investment has not changed much over cohorts and, if ever, has strengthened towards positive values (for education) or towards negative ones (for time in employment), thus not allowing us to confirm H2b.
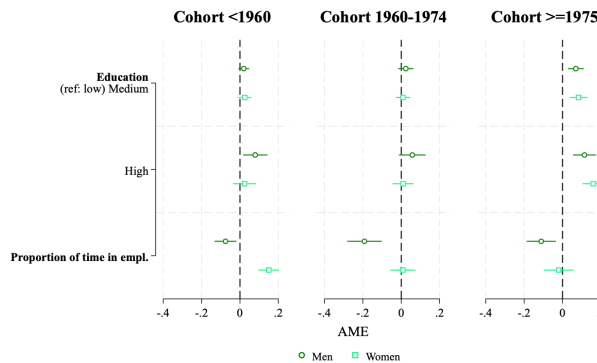
Figure 3. Average Marginal Effects from logistic regressions of the likelihood of being lifelong single. Control variables: occupational class, atypical employment duration, age, age squared, whether parents are divorced, macroregion of residence.
Data: FSS (2016), weighted.

In sum, results confirm that the interplay between education and (partly) career investments works in a gendered manner for what the dynamics of union formation are concerned. Regarding the between-cohorts change, over cohorts the trade-off between work and family investments seem to have disappeared for work-oriented women making them less likely to remain single than work-oriented women of previous birth cohorts.

References

Aisenbrey, S., & Fasang, A. (2017). The interplay of work and family trajectories over the life course: Germany and the United States in comparison. *American Journal of Sociology*, *122*(5), 1448-1484.

Becker, G. S. (1991). *A treatise on the family: Enlarged edition*. Harvard university press.

Bellani, D., Esping-Andersen, G., & Nedoluzhko, L. (2017). Never partnered: A multilevel analysis of lifelong singlehood. *Demographic Research*, *37*, 53-100.

Blossfeld, H. P. (2009). Educational assortative marriage in comparative perspective. *Annual review of sociology*, *35*, 513-530.

Cantalini, S. (2017). Does education affect the timing or probability of family formation?: An analysis of educational attainment and first union in Italy. *Research in Social Stratification and Mobility*, *49*, 1-10.

Corti, G., & Scherer, S. (2021). Mating Market and Dynamics of Union Formation. *European Journal of Population*, *37*, 851-876.

De Hauw, Y., Grow, A., & Van Bavel, J. (2017). The reversed gender gap in education and assortative mating in Europe. *European Journal of Population*, *33*, 445-474.

Dykstra, P. A., & Poortman, A. R. (2010). Economic resources and remaining single: Trends over time. *European Sociological Review*, *26*(3), 277-290.

Jalovaara, M. (2012). Socio-economic resources and first-union formation in Finland, cohorts born 1969–81. *Population studies*, *66*(1), 69-85.

Liefbroer, A. C., & Corijn, M. (1999). Who, what, where, and when? Specifying the impact of educational attainment and labour force participation on family formation. *European Journal of Population/Revue Européenne de Démographie*, *15*, 45-75.

Oppenheimer, V. K. (1988). A theory of marriage timing. *American journal of sociology*, *94*(3), 563-591.

Oppenheimer, V. K. (1997). Women's employment and the gain to marriage: The specialization and trading model. *Annual review of sociology*, *23*(1), 431-453.

Sweeney, M. M. (2002). Two decades of family change: The shifting economic foundations of marriage. *American Sociological Review*, 132-147.

Wiik, K. A., & Dommermuth, L. (2014). Who remains unpartnered by mid-life in Norway? Differentials by gender and education. *Journal of Comparative Family Studies*, *45*(3), 405-424.