Family arrangements and children's educational outcomes: Heterogeneous penalties in upper-secondary school

DEMOGRAPHIC RESEARCH
A peer-reviewed, open-access journal of population sciences

DEMOGRAPHIC RESEARCH

VOLUME 40, ARTICLE 35, PAGES 1015–1046
PUBLISHED 18 APRIL 2019
https://www.demographic-research.org/Volumes/Vol40/35/
DOI: 10.4054/DemRes.2019.40.35

Research Article

Family arrangements and children's educational outcomes: Heterogeneous penalties in upper-secondary school

Raffaele Guetto

Nazareno Panichella

Contents

Demographic Research: Volume 40, Article 35
Research Article

Family arrangements and children's educational outcomes: Heterogeneous penalties in upper-secondary school

Raffaele Guetto[1]

Nazareno Panichella[2]

Abstract

BACKGROUND
This paper studies whether new family patterns fostered inequality of educational opportunities in upper-secondary education in Italy.

OBJECTIVE
To analyse the association between children's educational outcomes and a wide range of family arrangements, including the time of exposure to marriage (never married, married before or after the birth). Empirical analyses also consider whether these demographic characteristics of the origin family more strongly affect children from more or less well-off families, and whether these effects change when different educational outcomes are considered.

METHODS
Analyses are based on the Italian Labour Force Survey (2005–2014) and apply Linear Probability Models on a sample of 123,045 children aged 15 and 16.

RESULTS
Children living in single-parent households or with two cohabiting biological parents have worse educational outcomes compared to children of two married biological parents. Children of highly educated parents are more penalized if access to the most prestigious academic track is considered, whereas the penalty is stronger among children of low-educated parents if the risk of not being enrolled in upper-secondary schools that give access to university is analysed. Finally, the analysis of the exposure to marriage suggests that social selectivity may drive the negative effects of cohabitation.

[1] Department of Statistics, Informatics, Applications "G. Parenti," University of Florence, Italy.
Email: raffaele.guetto@unifi.it.
[2] Panichella: Department of Social and Political Sciences, University of Milan, Italy.
Email: nazareno.panichella@unimi.it.

CONTRIBUTION
Results provide limited support to the argument that new family patterns increase social inequalities. Living in 'nonstandard' family arrangements does worsen children's educational outcomes, but substantial heterogeneity in their effects has been found, depending on the combination between social background and the educational outcome considered.

1. Introduction

Western societies have been involved in huge demographic changes and the analysis of the social consequences of new family arrangements (hereafter FAs) is therefore a cutting-edge topic of research in social science. This work studies the association between FAs and children's educational outcomes in the transition between lower- and upper-secondary education in Italy, both in terms of enrolment probabilities and choice of different school tracks. Empirical analyses have two aims. The first aim is to analyse whether and to what extent a broad range of FAs are associated with children's upper-secondary school choices, controlling for detailed information on parental education and social class of origin. The second aim is to describe the heterogeneity of these associations, i.e., their variation among social groups *and* among different educational outcomes characterized by different social desirability and opposite effects on individuals' life chances (university enrolment, occupational careers, etc.).

This article provides several contributions to the literature. First, whereas in most cases the family structure is measured by a dummy indicating whether respondents lived with both parents up to a certain age (Amato and Anthony 2104; Bernardi and Boertien 2017a), this study distinguishes between different FAs, such as cohabitation, single-parent households (divorced or widowed), and presence of step-parents. Second, most of the literature concerning European countries, and especially Italy, has focused on children's attainment of a university degree, which often occurs when children are 25 years old or older, hence probably several years after a family breakup. This work instead focuses on the educational outcomes of respondents aged 15 and 16 years, using detailed and reliable information on household structure and educational condition measured at the time of the interview. Third, empirical studies have not yielded consistent results about the association between parental cohabitation and educational achievement of their descendants. This work fills this gap with a detailed comparison between married and cohabiting families based on the time in which children are 'exposed' to marriage (never married, married before the birth, or married after the birth).

The focus on upper-secondary education is important because, despite the educational expansion and the consequential reduction of inequality of educational opportunities (IEO) in the enrolment at this level in Italy, social inequality is 'effectively maintained' (Lucas 2001) via the association between socioeconomic background and track choice (Panichella and Triventi 2014; Guetto and Vergolini 2017). Such a pattern has been documented in other countries (Erikson and Jonsson 1996; Breen and Jonsson 2000; van de Werfhorst and Mijs 2010), making the analysis of different curricula or tracks in secondary education a core topic of investigation in the literature on IEO (Ichou and Vallet 2011; Schneider and Tieben 2011). Although IEO in upper-secondary education in Italy has been extensively studied, it is not clear how the spread of 'nonstandard' FAs has affected IEO. The analysis of the Italian case is of particular interest because in this country, where the incidence of nonstandard families is among the lowest in Europe and the 'traditional' family is the major welfare provider, disrupted families and step-families may have harsher consequences on children in terms of educational inequalities compared to other countries.

The article is organized as follows: The next three sections discuss the importance of FAs for the research in social stratification and mobility (section 2), the mechanisms underpinning the relations between FAs and life chances (section 3), and the heterogeneity of their effects across social groups (section 4). The fifth section describes both the main findings on IEO in upper-secondary education in Italy and the empirical expectations of this work. The sixth section presents the data and the methods and the seventh the empirical evidence. Finally, the eighth section concludes.

2. Demographic changes and social stratification

Studies on social stratification and mobility analyse the intergenerational reproduction of inequality through the so-called origin-education-destination (${}_{O}{}^{E}{}_{D}$) triangle (Blau and Duncan 1967), which links three elements: the social origin (*O*), education (*E*), and social destination (*D*). In this scheme, the social background of origin, defined in terms of parental education and/or social class, affects the social destination of the individual (*OD*), in two ways: indirectly, namely via inequality of educational opportunities (i.e., through the *OE* association); and directly, net of the educational level achieved (*OD*|*E*).

The ${}_{O}{}^{E}{}_{D}$ triangle was developed in the late 1960s, when the family structure was based on the male breadwinner model and 'traditional' family and reproductive behaviours were prevalent. However, Western societies have recently experienced huge demographic changes and deep changes to family structures, along with transformations in values and preferences, as underlined by the Second Demographic Transition (SDT) thesis (Lesthaeghe 2010). These changes have obviously affected the

social and demographic characteristics of the families, which have become more heterogeneous than in the past (Esping-Andersen and Billari 2015). Such increasing variability of the first element of the triangle, the social origin (*O*), might have crucial implications on the intergenerational reproduction of social inequalities, over and above the effects of the cultural and economic resources of the family of origin.

Two main demographic changes can be mentioned in this regard: the increasing incidence of divorce and the spreading of cohabitation. These changes have involved – albeit with some delays and consistent regional differences (Guetto and Panichella 2013) – even the Italian society (Guetto et al. 2016), which is the object of this study. According to Eurostat data, in Italy divorces were virtually nonexistent in 1980, when the crude divorce rate was 0.2, but the diffusion of divorces increased substantially. The crude divorce rate in 2014 rose to 0.9, compared to an average of 2.0 for the EU-28 in the same year. Also the diffusion of cohabitation – measured with the incidence of extramarital births – has lagged until the beginning of the 2000s in the Italian society, when the average share of children born outside marriage was 27.3 in the EU-28 and 9.7 in Italy. However, in 2014 the same figures were 42.0 and 28.8, thus signaling that Italy is also bridging the gap with Western Europe with respect to the diffusion of cohabitation (Castiglioni and Dalla Zuanna 2009).

How do these changes in FAs modify the intergenerational reproduction of inequality in the Italian society? According to the 'Diverging Destinies Thesis' (DDT, McLanahan 2004), the diffusion of nonintact families contributes to an increase in social inequality as: a) new FAs would be more widespread among the lowest strata of the social hierarchy; b) would have an overall negative effect on children's life chances, net of social origin; c) such negative effect would be more pronounced among less-educated and poorer families, i.e., interaction effects occur between *FA* and *O*. This last point can be interpreted as an instance of the so-called 'compensatory advantage' mechanism (Bernardi 2014), according to which advantaged families use their socioeconomic resources to cushion their children from the detrimental consequences of critical life events such as parental divorce.

The empirical evidence in support of the three constituting pillars of the DDT is inconsistent. Regarding the first pillar there is, however, growing consensus around the hypothesis that the diffusion of new behaviours is ignited by a 'social vanguard' made by highly educated individuals whereas, as time goes by and the new behaviours become more widespread, societies would experience a reversal of the educational gradient (Esping-Andersen and Billari 2015; for divorce see Härkönen and Dronkers 2006; for the diffusion of cohabitation, see Ní Bhrolcháin and Beaujouan 2013). This reversal entails that in countries with a higher prevalence of children ever living in nonintact families, such as the United Kingdom and United States, nonstandard FAs tend to be more common at lower levels of parental education, whereas in a country

like Italy the educational gradient of intact families is (still) negative (Bernardi and Boertien 2017a). Regarding the spreading of cohabitation, research focusing on Italy showed that highly educated women ignited the diffusion at its early stages, but the educational gradient is becoming null or even negative among the younger cohorts that are increasingly more likely to enter cohabitation as a first union (Guetto et al. 2016).

For sake of brevity, the empirical analysis of this work does not directly address the selection into FAs, the first pillar of the DDT argument. In other words, although empirical analyses shown in the following sections control for the socioeconomic composition of the different FAs (see section 6.3), the focus of this article is on the net association between FAs and children's educational attainment (*E*), controlling for detailed information on social origin (*O*). Moreover, analyses also study the heterogeneity of this association, namely its variation among different social groups (*FA*O*). The following two subsections address these two issues.

3. Family arrangements and educational outcomes

Regarding the implications of nonstandard FAs for children's educational outcomes, the effects of parental divorce have been the object of particular attention (Amato 2000, 2010; for Italy: Albertini and Dronkers 2009). Empirical evidence on this aspect is consistent and suggests that growing up in a nonintact family penalizes educational performances, notwithstanding important cross-country heterogeneity in the effects that seems unrelated to the degree of diffusion of divorce (Bernardi and Radl 2014).

Reduced financial means in the household is the most relevant mechanism underpinning the negative effect of divorce (Amato 2010; Bernardi and Boertien 2016). However, even after controlling for parental social class or income, and therefore for the economic well-being of the family of origin, negative effects of family disruption on children's educational outcomes can be expected through other mechanisms. For instance, separation and divorce are stressful events for children, which may worsen their school achievements due to parental conflict and reduced quality of parenting (Amato 2000, 2010). Moreover, it is usually the father that serves as the figure of authority, setting the child-rearing norms and ensuring compliance with them. This may be particularly true in a country like Italy that is still characterized by rather traditional attitudes toward gender roles (Guetto, Luijkx, and Scherer 2015). After divorce or separation children typically live without their biological father and, thus, are likely to experience reduced parental control (Booth and Amato 1994).

The role of step-families for children's well-being after family disruption is theoretically ambiguous, and results are not well established. Although step-parents may indeed provide additional economic resources compared to single-parent

households, evidence suggests that children in step-families fare worse than children living with two married biological parents (Amato 2000; Martin 2012). The effects of having less parental monitoring and control should extend to children in step-families similarly to children living with a single divorced parent. Step-fathers tend indeed to have a 'laid back' approach to discipline (Amato 1987) and to be less involved with nonbiological children (Sweeney 2010). Moreover, it has been recently argued that, to the extent that the number of family transitions affects children's well-being rather than the divorce itself (Amato 2010), step-families may influence even worse educational outcomes compared to other single-parent households. In fact, although parental split-up may at least represent a relief for children confronted with intense parental conflict, subsequent repartnering may represent a double disruption, making children's adjustment to divorce even more difficult (Martinez and Forgatch 2002).[3]

Also the children of never-married lone parents may have experienced reduced parental control and support (Addo, Sassler, and Williams 2016) but they avoided parental conflicts. Other disruptive events, e.g., moving and changing school, might be experienced by the children of never-married lone parents, but these events are probably more common for children living with lone parents following separation or divorce and for children in step-families (Amato 2000). Widowed parents should be further differentiated, since there are no reasons to think of reduced parental involvement and other sources of parenting deficits.

If there is consistent evidence supporting the idea that children living in nonintact families have lower educational outcomes, the evidence for cohabitation is less straightforward, since it depends, to a much larger extent compared to other family forms, on the type and degree of selectivity into this FA. On the one hand, the unobserved characteristics of parents who do not conform to the strong social pressures favouring marriage over cohabitation (Rosina and Fraboni 2004), combined with societal disapproval (Baranowska-Rataj, Mynarska, and Vignoli 2014), may be negatively associated to their children's educational outcomes. On the other hand, cohabitations, that do not involve either parental disruption or conflicts can be implemented by a 'social vanguard' (Guetto et al. 2016) whose selection may be positively associated with children's educational outcomes.

The effect of cohabitation on educational opportunities in Italy has not yet been studied. As a less bonding form of union compared to marriage, cohabitation deviates from the predominant social norms in the Italian context, especially for the cohorts of parents selected in this study, the large majority of them being born between 1950 and 1970 (Rosina and Fraboni 2004; Vignoli and Salvini 2014; Guetto et al. 2016).

[3] It should be said that results have been found to change based on the outcome considered, and some studies found that married step-parents are more involved in terms of both emotional support and economic investment on children (Manning and Lamb 2003; Sweeney 2010).

Cohabitation has been found to be preferred by young Italian adults confronted with temporary employment and labour market uncertainty (Vignoli, Tocchioni, and Salvini 2016), consistent with the 'pattern of disadvantage' hypothesis (Perelli-Harris and Gerber 2011). For this reason, it is possible that this FA is associated with worse school results.

4. Heterogeneity in the effects of family arrangements

The effects of the above-mentioned demographic characteristics of the family of origin on children's educational outcomes are likely to vary, depending on the socioeconomic resources and the set of opportunities and constraints in which different social groups are embedded. Several studies analysed such heterogeneity focusing on the effect of divorce. In analytical terms, these studies analyse O–FA–E three-way interactions, asking whether the effect of a certain FA (divorce) on children's education is stronger for children with lower or higher social origins. The aim is similar, mutatis mutandis, to that of social stratification research studying whether the direct effect of social origin ($OD|E$) is stronger for children with lower (compensation effect, see Bernardi 2014) or higher educational attainment (boosting effect, see Bernardi and Ballarino 2016).

In line with the DDT argument, research focusing on the United States found that children living with parents of lower socioeconomic status experience more detrimental consequences on their school achievement as an effect of parental split-up, whereas children with better social origin experience lower or no decline in school achievement, consistent with compensatory mechanisms (Amato and Anthony 2014). Nevertheless, recent European studies stand in open contradiction to the DDT and the compensatory advantage hypothesis, questioning the idea that the negative effects of living in certain FAs (step-families, divorced parents, and so on) are stronger among children with lower social background. Children of more well-off families have been found, indeed, to be more likely to experience negative consequences of parental separation (Bernardi and Radl 2014; Bernardi and Boertien 2017a), especially because of parental income loss (Bernardi and Boertien 2016).

In social stratification research, empirical support for boosting and compensatory effects depends on the measure of occupational attainment selected for consideration – income or social class, respectively (Bernardi and Ballarino 2016). Similarly in this case, the outcome selected for consideration matters. For instance, if the probability of obtaining a university degree is considered, then children with better socioeconomic background may be more negatively affected by parental split-up because the chances of university enrolment are much lower for children with low socioeconomic background, potentially leaving limited 'room' for strong divorce effects (floor effect, Bernardi and Boertien 2016). On the contrary, studies that select school grades and achievement tests for consideration find stronger negative effects for less well-off families (Amato and Anthony 2014). It is suggestive that Martin (2012), who focused on the United States as Amato and Anthony did, found stronger negative effects for children of highly educated parents on the probability of college attendance but not on the probability of high school completion. To sum up, it could be generalized that studies find stronger negative effects of family disruptions for children of advantaged background, especially when focusing on 'good' outcomes, such as the attainment of a tertiary degree rather than high school completion. On the contrary, studies that consider school grades and achievement tests find stronger negative effects for less well-off families.

Empirical results are also likely to depend on the specific national context analysed and on other methodological choices. The negative effects of parental separation in the United Kingdom were found to be stronger for children from higher social background irrespective of the educational outcome considered (Bernardi and Boertien 2017b), but only when estimated through absolute differences in terms of probabilities. In Germany, compensatory effects have been confirmed both when focusing on grades in German and Mathematics and on attendance of the Gymnasium, but only after taking unobserved heterogeneity into account through family fixed effects in a sample of siblings (Grätz 2015). Both of these empirical analyses stressed the importance of separately considering maternal and paternal socioeconomic characteristics, finding paternal resources to be more important. In fact, results for the United Kingdom showed that even if higher maternal education has a compensatory effect, higher paternal education increases the detrimental consequences of parental divorce for children's education (Bernardi and Boertien 2017b). In Germany, both parents' education attenuates the negative effects of family disruption, but the father's education has a stronger effect.

This paper contributes to this debate by focusing on the Italian case, extending the array of demographic factors that are considered beyond children's experience of divorce and parental split-up. The focus is on inequality in upper-secondary education, a crucial educational transition that Italian children have to make at the age of 14,

which is strongly affected by socioeconomic background (Panichella and Triventi 2014; Guetto and Vergolini 2017). The next section describes the main empirical findings on IEO at the upper-secondary level in Italy and the empirical expectations of this work.

5. Family arrangements and IEO at the upper-secondary level in Italy: Empirical expectations

In the Italian educational system, parents usually decide whether to enroll their children to upper-secondary school when the children are aged 14, at the end of lower-secondary school. Starting from 2007, education in Italy has become compulsory up to 16 years of age; so that virtually all children should now make the transition to upper-secondary school and attend a certain track up to 16 years of age.

The Italian upper-secondary school is stratified into three five-year tracks characterized by different institutional purposes, subjects, academic standards, and prestige. The academic track includes the more prestigious and demanding *liceo classico* and *liceo scientifico*. Although teaching and training schools (*liceo psico-socio pedagogico* and *liceo delle scienze umane*) and curricula that focus on foreign languages (*liceo linguistico*), arts (*liceo artistico*), and music (*liceo musicale e coreutico*) provide general education, they are less prestigious than *liceo classico* and *liceo scientifico*. The technical track (*istituti tecnici*) provides theoretical and vocational education in the economic and technological fields. The vocational track (*istituti professionali*) supplies vocational training in areas of the service, industry, and craft sectors.

In Italy, however, dropout rates before the age that marks the end of compulsory schooling are very high. Data from the Ministry of Education for the school year 2013/2014 shows a dropout rate at all grades of lower-secondary school of 2.3%, and a dropout rate of 4.4% at the upper-secondary level. Dropout rates are particularly high during the first year of upper-secondary school (approximately 7%). Grade repetitions also contribute to this issue, as in the first and second years of upper-secondary school 16.3% and 10.5% of pupils, respectively, were not admitted to the following grade. Moreover, at the end of lower-secondary school, children may opt for vocational courses lasting less than five years that do not give access to university. In 2013, approximately 6% of the students who completed lower-secondary school chose this option.[4]

[4] As of 2011, students enrolled in shorter vocational courses can still switch to the five-year vocational track, which allows access to university.

In the school year 2013/2014, 28.8% of the pupils who enrolled in five-year tracks chose *liceo classico* (6.1%) and *liceo scientifico* (22.7%), 20.1% enrolled in the remaining curricula of the academic track, 31.2% opted for the technical track, and 19.9% chose the vocational track. Starting from the cohorts born in the 1970s, the proportion of students enrolled in the technical and vocational tracks has slightly but constantly decreased over time, whereas educational expansion at the upper-secondary level has gone hand-in-hand with an expansion of the academic track, with the exception of *liceo classico* (Guetto and Vergolini 2017).

Unlike other highly stratified educational systems (e.g., the German one), in Italy's system the family of origin plays a crucial role in the choice of the type of secondary school. There is indeed no formal system of teachers' recommendations and, although better school performances in lower-secondary school make students more likely to enroll in the academic track (Contini and Scagni 2011), students can enroll in any type of upper-secondary school irrespective of their previous school performance. For these reasons, comparative studies showed that the relationship between socioeconomic background and track choice in Italy is stronger than in other European countries (Checchi and Flabbi 2013; Contini and Scagni 2011).

After the complete liberalization of access to university in Italy in 1969, all five-year upper-secondary tracks allow university enrolment, provided that students have passed a final exam known as *esame di maturità*. However, in 2015 more than 90% of graduates from *liceo classico* and *liceo scientifico* enrolled in university within three years after the completion of upper-secondary school, whereas the figures were approximately 40% and 20% for graduates from technical and vocational tracks, respectively (Italian National Institute of Statistics, Istat 2016). The attendance of the *liceo classico* and *liceo scientifico* is therefore crucial for the enrolment in tertiary education; hence, it is an important factor mediating the association between social origin and access to higher education (Ballarino and Panichella 2014, 2016).

As mentioned in the introduction, this study fills a gap in the literature by considering how nonstandard FAs affect both the vertical dimension (i.e., the enrolment in a five-year upper-secondary school) and the horizontal dimension (i.e., the access to *liceo classico* and *scientifico*) of IEO at this educational level. These two dimensions are very different: The vertical dimension affects the probability of (not) being in a particularly vulnerable condition, whereas the horizontal dimension affects the probability of entering in the most prestigious educational pathway. Since these outcomes have opposite effects on future life chances, their analysis is useful to highlight the possible heterogeneity in the effects of FAs among social groups described in the previous section.

Following the above-mentioned studies, we expect a negative association between nonintact families and educational outcomes (*nonintact penalty hypothesis*). Given the

ambiguous theoretical expectations and the role of selectivity, it is difficult to make predictions about the effects of cohabitation. However, since in Italy cohabitation is often driven by economic necessity and unstable relationships, it can be hypothesized that living with cohabiting parents – who may have faced a prolonged period of economic and life uncertainty – may be a cause of parenting deficits resulting in children's worse educational outcomes. If this is the case, we expect that such penalization strongly diminishes – or even disappears – when socioeconomic resources of the family of origin are controlled for (*pattern of disadvantage hypothesis*).

We also expect that penalties related to both nonintact and cohabiting families change among social groups, depending on the educational outcome considered. When the enrolment in the academic track – our 'good' outcome – is analysed, the penalty should be stronger among children from advantaged background. Whereas, if the probability of (not) being enrolled in any five-year upper-secondary school is considered – our 'bad' outcome – then the penalties should be higher among children from less well-off families (*heterogeneity hypothesis*).

6. Data and methods

6.1 Data

Empirical analyses are based on pooled quarterly data from the Italian Labour Force Survey (ILFS) for the years from 2005 to 2014. The ILFS is a nationally representative survey of Italian households carried out by Istat. Participation to the survey is compulsory, and all household members aged at least 15 are interviewed. This survey allows studying upper-secondary school choices and combining this information with a rich and detailed set of household characteristics, including its structure and the educational attainment and occupational condition of their members. After listwise deletion of missing cases on the dependent, independent, and control variables (1.3% of the original sample), the analytical sample is composed of 123,045 individuals aged 15–16.

The ILFS allows us to reconstruct FAs in a reliable and detailed way and to analyse their associations with different children's educational outcomes at the upper-secondary level. Moreover, thanks to its sample size, it is also useful for a detailed analysis of different types of FAs, which in the Italian context are less common than in other Western countries. However, this survey does not allow us to consider other age groups and, therefore, other educational transitions, as it does not contain information about either the family of origin or respondents' family situations during childhood or adolescence. Information concerning coresident parents has thus been linked to their

children, assuming that all individuals aged 15 and 16 are still living with (at least one of) their parents. Of course, this assumption would not be straightforward if children of older ages are selected.[5]

6.2 Variables

The dependent variables are two measures of educational attainment: the probability of being enrolled in a five-year upper-secondary school, and the probability of being enrolled in the two most prestigious curricula of the academic track (*liceo classico* and *liceo scientifico*).[6] When this latter dependent variable is considered, both 'unconditional' and 'conditional' models have been estimated: The unconditional model includes all individuals eligible to access a five-year upper-secondary school, whereas the conditional model considers only those who made such a transition. This article presents only the results of the unconditional model, which is less affected by sample selection bias and its change over time (Cameron and Heckman 1998) and allows us to rely on a larger sample size. The main results of the conditional model (available upon request) are substantially similar to those presented in the article.

There are two independent variables. The first divides children included in the sample into six different FAs: (a) two married biological parents; (b) two cohabiting biological parents; (c) one biological parent who never married; (d) one biological parent separated or divorced; (e) one biological parent married or cohabiting with a step-parent; (f) a single, widowed biological parent.

The second independent variable concerns the time of exposure to marriage. As discussed above, the expectations concerning the effect of cohabitation on children's educational attainment are not clear. Therefore, a specific part of the empirical strategy will be devoted to its analysis. The time of exposure to marriage contrasts never-married cohabiting parents with different categories of the households that include two married parents, divided according to the difference between the year of marriage and

[5] We performed several robustness checks using different age selections. First, we selected only children aged 15 to reduce the risk of including respondents who experienced family disruption after choosing the type of upper-secondary school. Also, we tried to include children aged 17 to 19 years to account for children's possibility to switch from the academic to the vocational track (and vice versa) at older ages. In both cases, results (available upon request) remained virtually identical to those presented in the following sections.

[6] In our analytical sample, the share of children not enrolled in a five-year upper-secondary track has declined only slightly between 2005 and 2014, shifting from 14% to 12%. However, the composition of this group changed substantially: The share of those not enrolled at all during the years of compulsory schooling strongly decreased, shifting from 56% in 2005 to 39% in 2014, whereas the share of those enrolled in short vocational courses has almost monotonically increased from 29% in 2005 to 46% in 2014. The share of those still enrolled in lower grades due to repetitions and/or interruptions fluctuated across the years between 15% and 24%.

the year of birth of the child. The variable consists of 14 categories, including cohabiting parents; parents married nine or more years after the birth of the child; parents married between one and eight years after the birth of the child; parents married in the same year as the birth of the child; and finally, a set of categories including those married from one to ten or more years before the birth of the child.[7]

The main control variables regard the social background of origin, which has been measured with two indicators. The first is the social class of origin of both parents (if present) at the time of the interview, measured by a reduced version of the EGP class scheme (Erikson, Goldthorpe, and Portocarero 1979) that includes five categories: (a) bourgeoisie (I–II); (b) white collars (IIIa); (c) petite bourgeoisie (IVa, IVb, IVc); (d) working class (IIIb, V, VI, VIIa, VIIb); (e) unemployed or inactive.[8] The second is the educational level of both parents (if present), operationalized with the highest level of detail available: (a) elementary or no title, (b) lower-secondary, (c) vocational upper-secondary (two to three years), (d) upper-secondary (five years), and (e) tertiary. Some models, for reasons of parsimony, include a three-category variable: up to vocational upper-secondary (two to three years), upper-secondary (five years), and tertiary.

Models also control for dummies for region of residence (NUTS-2), dummies for each trimester of interviews (from the first trimester of 2005 to the fourth trimester of 2014), birth order (only child, first-born, second-born, third-born or more), family size (fewer than three children; three children or more), birth abroad (yes or no); age (15 or 16 years of age), and sex. In the first step of empirical analysis, models also control for the age of the mother (or the father if the mother is absent or dead) at interview in four categories (<40, 41–45, 46–50, >51), whereas in the second step both the age at motherhood and fatherhood are controlled for (<20, 21–25, 26–30, 31–35, 36–40, >41).

Descriptive statistics concerning the main independent and control variables are shown in Table A-1 in the Appendix.

6.3 Empirical strategy

The empirical strategy is divided into two parts that make use of Linear Probability Models (LPMs) estimated by applying the weights provided by the ILFS and with robust standard errors. The coefficients of the LPMs can be directly interpreted as marginal effects, and we checked that the results of all models shown in the following

[7] It should be noted that the group composed of cohabiting parents is 'right censored,' in the sense that its members may get married in the future.

[8] Using more detailed controls for parental social class produced virtually the same results as the ones shown in the paper.

section are virtually identical to the average marginal effects obtained after multinomial logistic regressions (results available upon request).

The first part considers the overall sample (N = 123,045) and aims to describe the associations between FAs and children's educational outcomes in upper-secondary school.

Three models are estimated:

$$\text{M1: } Y = \alpha + \beta FA + \varepsilon$$
$$\text{M2: } Y = \alpha + \beta FA + \lambda(CL \times EDU) + \varepsilon$$
$$\text{M3: } Y = \alpha + \beta FA + \lambda(CL \times EDU) + \theta Z + \varepsilon$$

Model 1 estimates the gross effect of family arrangements (*FA*), the first independent variable, on the two educational outcomes considered. Model 2 controls for the social background of origin, with an interaction between the social class (*CL*) and the educational level (*EDU*) of the parents. By including this interaction, we control for the most detailed available information concerning parental socioeconomic background, thus coping with the lack of more detailed information on households' economic resources. For instance, the 'white collar' social class may include occupations entailing very different economic rewards. By considering the educational stratification within this class we are better able to distinguish between higher- and lower-grade nonmanual workers.[9] Finally, Model 3 adds a vector (*Z*) for the additional sociodemographic controls described above.

The same model specification and stepwise strategy have been applied in the second part of the analysis, where the time of exposure to marriage is included as an independent variable. This part analyses only children living with both biological parents (N = 106,235),[10] hence both parents' education (three-category version) and social class have been included in the model and interacted.[11] The aims of this second step of the empirical strategy is to dig deeper into differences between married and cohabiting couples by studying how the time of 'exposure' to marriage influences children's educational outcomes. In this way, it is possible to explore the role of selectivity into cohabitation, which may be crucial to account for the educational outcomes of the children of cohabitation, which will be discussed further.

[9] Given that this first part compares intact and nonintact families, parental education and social class in case of two-parent households have been included considering the highest of both parents' educational attainment and social class. If the child is living in nonintact families, these variables are built based on the information concerning the only parent living in the household.

[10] 387 children of two married biological parents (0.4%) have been excluded due to missing information on the year of marriage.

[11] Four-way interactions between both parents' education and social class have not been included as these would produce too many cells with few cases.

Finally, in order to understand how the effects of different FAs vary among social groups, in both steps Model 3 is augmented with an interaction between parental education (three-category version) and household characteristics (*FA*×*EDU*). We opted for interaction effects between FA and parental education, rather than social class, for two reasons. First, education can be aggregated in three levels without losing relevant information. This is important because the number of children living in each FA is not large enough to allow for interaction effects across more groups, as would be the case with social class. Second, parental education is a much stronger predictor of children's educational outcomes than parental social class, as was already found for Italy in other studies (e.g., Ballarino and Schadee 2010; Guetto and Vergolini 2017).

7. Empirical results

7.1 Family arrangements and children's educational outcomes

Table 1 shows the main results concerning the first step of empirical analysis (coefficients and standard errors for control variables are included in Table A-2 in the Appendix). As estimates derive from LPMs, each beta coefficient represents a probability difference between children living in each family type and those living with two married biological parents (reference category). In Italy households consisting of two married biological parents represent the great majority of FAs (see Table A-1 in the Appendix); consequently, this category is considered as a 'benchmark.' Therefore, the concepts of disadvantage/penalty of a certain group are always to be understood relative to the reference category of the two married biological parents.

Results of Model 1 show that living in nonstandard families is associated with substantially lower probabilities of both enrolments in a five-year upper-secondary school (ranging from –4 p.p. to –10 p.p.) and enrolment in the academic track (ranging from –3 p.p. to –11 p.p.).

Controlling for social origins – hence for the selection into different FAs based on social background – does not substantially alter the main results (Model 2), although some important consequences are visible. First, the penalty associated with living with a widowed parent on both outcomes considered disappears, which is different from what was found in a previous study on the Italian case (Albertini and Dronkers 2009). Second, the disadvantage associated with living with a single separated/divorced or lone parent reduces and, as far as the latter, disappears when looking at enrolments in the academic track. Finally, the penalty associated with living in a step-family, which was the strongest among nonintact families in Model 1, is not at all affected by the inclusion of parental education and social class. These results show the existence of a

ranking between FAs in terms of children's educational outcomes, with children living with one biological parent following divorce faring worse, especially those living with a repartnered separated/divorced parent.

Table 1: Beta coefficients (with robust standard errors) from linear probability models on the probability of being enrolled in a five-year upper-secondary school and in the academic track

	Enrollment					
	Model 1		Model 2		Model 3	
Family structure [ref: two bio married]	**β**	**σ(β)**	**β**	**σ(β)**	**β**	**σ(β)**
Two biological cohabiting	–0.10***	(0.01)	–0.09***	(0.01)	–0.08***	(0.01)
One biological with a step-parent	–0.10***	(0.01)	–0.10***	(0.01)	–0.06***	(0.01)
One biological lone	–0.08***	(0.01)	–0.05***	(0.01)	–0.04***	(0.01)
One biological separated/divorced	–0.04***	(0.01)	–0.03***	(0.01)	–0.03***	(0.01)
One biological widow	–0.05***	(0.01)	0.00	(0.01)	–0.00	(0.01)
Constant	0.88***	(0.01)	0.98***	(0.01)	0.89***	(0.01)
Observations	123,045		123,045		123,045	
	Academic track					
	Model 1		Model 2		Model 3	
Family structure [ref: two bio married]	**β**	**σ(β)**	**β**	**σ(β)**	**β**	**σ(β)**
Two biological cohabiting	–0.10***	(0.01)	–0.09***	(0.01)	–0.07***	(0.01)
One biological with a step-parent	–0.11***	(0.01)	–0.11***	(0.01)	–0.08***	(0.01)
One biological lone	–0.03***	(0.01)	0.00	(0.01)	0.02*	(0.01)
One biological separated/divorced	–0.06***	(0.01)	–0.04***	(0.01)	–0.03***	(0.01)
One biological widow	–0.04***	(0.01)	0.01	(0.01)	0.01	(0.01)
Constant	0.31***	(0.01)	0.75***	(0.01)	0.68***	(0.01)
Observations	123,045		123,045		123,045	

Note: *** p<0.01, ** p<0.05, * p<0.1. Controls for interaction effects between parental education and social class in Model 2 not shown. Additional controls for region of residence (NUTS-2), trimester of interview, birth order, family size, birth abroad, age, sex, and age of the mother/father at interview in Model 3 not shown. Weights applied.

The stronger penalty experienced by children of step-families can be partially attributed to compositional differences in terms of additional sociodemographic characteristics. As shown in Model 3, the coefficients associated with this FA are reduced substantially because children of step-families are more likely to be born abroad and living with a parent aged less than 40 at interview, factors that are negatively associated with children's educational outcomes (see Table A-2). Nevertheless, the 6 p.p. and 8 p.p. lower probability of enrolment in a five-year upper-secondary school and in the academic track, respectively, remain the strongest penalties among nonintact families.[12]

[12] As mentioned above, since 2011, being enrolled in short vocational programs does not necessarily imply exclusion from university. However, we verified that children with low socioeconomic background are still those opting for short vocational courses, with apparently no differences before and after the 2011 reform. Moreover, Model 3 (Table 1), estimated when considering only the 2005–2010 period, produced an overall

What was relatively unexpected is the strong penalty experienced across all models by children living with cohabiting parents, who are, *ceteris paribus*, almost as likely to be enrolled in a five-year upper-secondary school or in the academic track as children living in step-families. As mentioned, few studies have analysed the educational consequences of this FA, especially for the Italian case. However, the negative association between cohabitation and children's educational outcomes is likely to depend on a peculiar pattern of selectivity, which is captured neither by the interaction between parental class and education (Model 2), as expected by our pattern of disadvantage hypothesis, nor by other sociodemographic characteristics of the family (Model 3). The difference between married and cohabiting families is the object of a specific analysis presented in the next subsection.

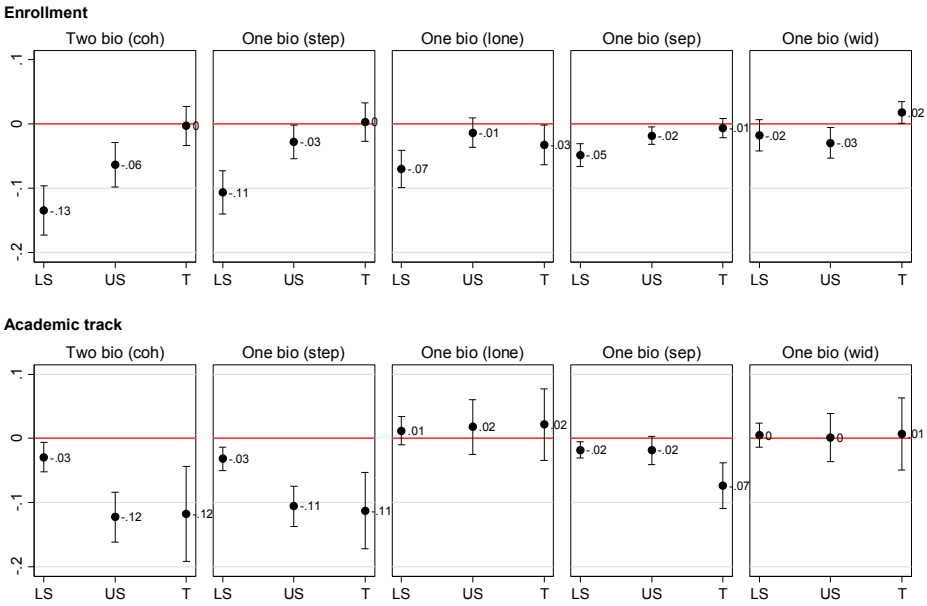
Figure 1 shows that the negative effects of living within a nonstandard family interact with social origins, measured here in terms of parental education. As expected, a consistent heterogeneity of penalties among social groups *and* between the two different educational outcomes considered emerges from the analysis.

When it comes to the probability of (not) being enrolled in a five-year upper-secondary school (upper panel), the negative consequences are much stronger among children of low-educated parents. This is not surprising, considering that the absolute chances that the child of a tertiary-educated parent experiences such a vulnerable condition are very low (approximately 3%, see Table A-1 in the Appendix). Differences between FAs are both statistically and substantially significant. For instance, the effect of living in a step-family, rather than with two married biological parents, on the enrolment in a five-year upper-secondary school for children of low-educated parents (–11 p.p.) is the same as having both parents with lower-secondary education at best rather than at least one tertiary-educated parent, as from estimates of Model 3.

On the contrary, children of tertiary and (to a lesser extent) upper-secondary educated parents are more at risk of not enrolling in the academic track if they live in nonstandard families. The penalty for children of tertiary educated parents is higher when they are cohabiting (–12 p.p.), living in step-families (–11 p.p.), or when the family includes a single separated/divorced parent (–7 p.p.). Differences with respect to families that include two married biological parents with the same educational level are not statistically significant for children living with one biological lone or widowed parent. Results are similar if upper-secondary educated families are considered. However, in this case, the disadvantage associated with living with one biological separated/divorced parent is lower if the parent achieved an upper-secondary diploma instead of a tertiary degree.

pattern of effects of FAs very similar to the one obtained when using the entire 2005–2014 period (results available upon request).

Figure 1: Beta coefficients (with 95% confidence intervals) concerning interaction effects between family arrangements and parental education on the probability of being enrolled in a five-year upper-secondary school and in the academic track; linear probability models with robust standard errors



Note: LS=lower-secondary; US=upper-secondary; T=tertiary. The reference category for family arrangements is two married biological parents. Models control for interaction effects between parental education and social class, region of residence (NUTS-2), trimester-year of interview, birth order, family size, birth abroad, age, sex, and age of the mother/father at interview.

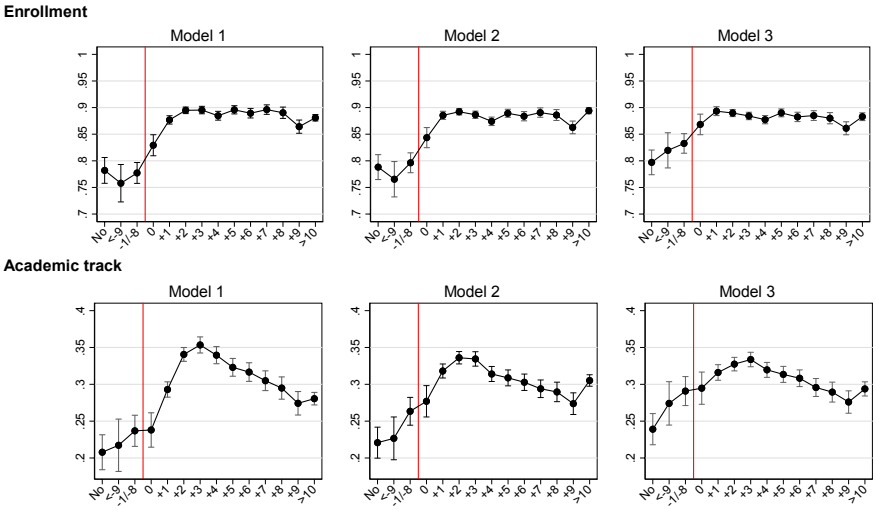
7.2 Exposure to marriage

The last empirical analysis focuses on children living with two biological parents and studies the exposure to marriage, with the aim of shedding some light on the strong negative association between parental cohabitation (vs. marriage) and children's educational outcomes shown in the previous subsection.

Figure 2 shows the association between exposure and educational outcomes, using the same model specifications described above (Table 1). The horizontal axis reported in the figure represents the timing of exposure to marriage, which compares the time of birth of the child with the time of marriage. The red line (value 0) indicates cases when the child and the marriage occurred in the same year. To the left of this line are families

who got married after the birth of the child and those who never married (i.e., cohabiting couples, value 'No'). To the right of the 0 are couples who have had their child after marriage.

Figure 2: Average linear predictions (with 95% confidence intervals) of being enrolled in a five-year upper-secondary school and in the academic track by years of exposure to marriage; linear probability models with robust standard errors



Note: Model 2 controls for both parents' education and social class. Model 3 includes additional controls for region of residence (NUTS-2), trimester-year of interview, birth order, family size, birth abroad, age, sex, age at motherhood, and age at fatherhood.

Results show that the exposure to marriage has a nonlinear association with both educational outcomes, and the probabilities are at their highest when the child is born few years after parents got married, regardless of the control variables included in the stepwise models. However, important differences concerning the shape of the association between the two educational outcomes emerge. Looking at the bivariate association between exposure and probability of enrolment (Model 1, upper panel of Figure 2), there is a clear difference between cohabiting families and those who married after the birth of the child ($\overline{pr}$ = 78%) compared to those families who have followed a more traditional path, where the birth of the child occurred after marriage. The predicted probability reaches its peak ($\overline{pr}$ = 89%) when the child is born three years after marriage and then remains stable over time. For the enrolment in the academic track an inverted U-shaped bivariate association between exposure and probability of

enrolment is found (Model 1, lower panel of Figure 2). The predicted probability of academic enrolment is the lowest ($\overline{pr}$ = 20%) if the biological parents never got married, and it increases and reaches a peak ($\overline{pr}$ = 35%) if the child was born three years after marriage. After that point, the probability starts to decrease, up to 28%. This pattern, although slightly smoothed, is still evident even after controlling for both parents' education and social class (Model 2), as well as parity, family size, and both parents' age when the child was born (Model 3).[13]

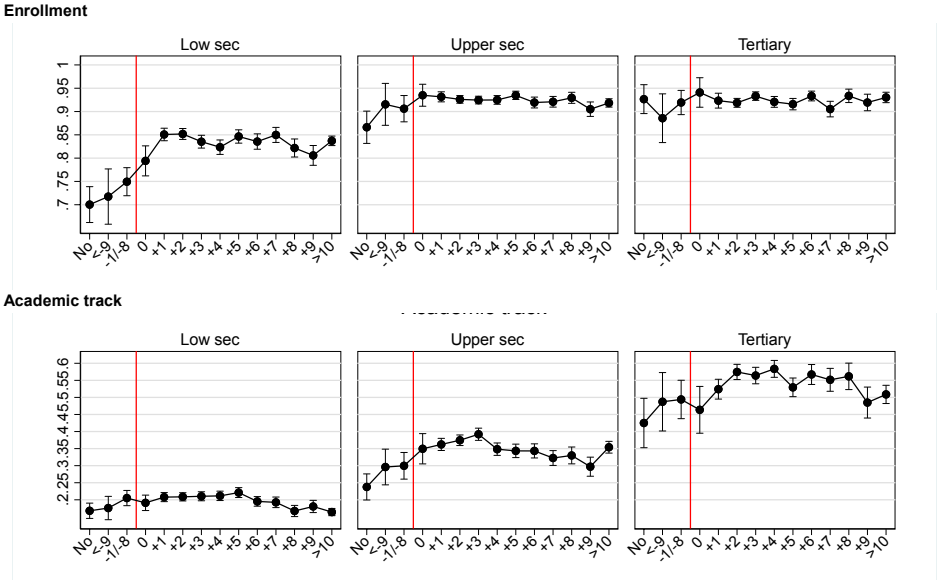
Selectivity into cohabitation therefore seems to be a crucial factor to understand how this FA affects educational outcomes, although with some differences based on the outcome considered. Regarding the probability of enrolment in a five-year upper-secondary school, there is a clear difference between families that cohabit and those that married, whereas to maximize the chances of entering in the academic track, marriage is not enough per se because it is also necessary for the child to be born a few years after marriage. In other words, to maximize the probability of entering in the best educational pathway, family behaviours must be even closer to the most common social behaviour. However, these patterns are also moderated by parental education (Figure 3).

For children of tertiary educated parents the risk of not being enrolled in a five-year upper-secondary school is extremely low, so whether and when the parents got married makes no difference. For children of parents with a medium level of education the difference between cohabiting and married families is relatively small, whereas among families with lower levels of education the chance of enrolment is the highest if the child was born one or two years after marriage.

Results are different if access to the academic track is considered. In this case, children of tertiary educated parents are strongly affected: those who were born two years after the marriage have an advantage of 15 p.p. compared to the children of parents who did not get married. Moreover, among the tertiary educated the inverted U-shaped pattern shown in Figure 2 is muted, whereas it is more evident among families with a medium level of education. These are the families that maximize the probability of enrolling their children in the best track when their family and reproductive behaviours are closer to the social norms. Finally, adaptation to social norms is less relevant among children of parents with the lowest level of education because they have little chance of being enrolled in the academic track, regardless of whether their parents cohabit or are married.

[13] Results are confirmed if separate models for only and first-born children, as well as predicted probabilities after logistic regressions, are estimated (results available upon request).

Figure 3: Predicted probabilities (with 95% confidence intervals) of being enrolled in a five-year upper-secondary school and in the academic track by years of exposure to marriage and parental education; linear probability models with robust standard errors



Note: Models control for both parents' social class, region of residence (NUTS-2), trimester-year of interview, birth order, family size, birth abroad, age, sex, age at motherhood, and age at fatherhood.

8. Conclusions

This paper analysed whether new family arrangements (FAs) fostered inequality in upper-secondary education in Italy, a latecomer of the Second Demographic Transition (SDT). The aim is to describe the associations between a wide range of FAs and two educational outcomes, which consider both the vertical and the horizontal dimensions of inequality, i.e., the probability of being enrolled in a five-year upper-secondary school and the (unconditional) probability of entering in the academic track (*liceo classico* and *liceo scientifico*), which is the most important and prestigious school in the Italian educational system. The analysis of these two opposite educational outcomes, namely a bad and a good outcome, allowed us to highlight the heterogeneity of the 'penalties' associated with 'nonstandard' FAs.

Results showed that living in nonstandard families, including cohabiting parents, is associated with lower educational outcomes, and this penalty remains statistically significant and substantially relevant even after controlling for parental education, social class, and other demographic features of the family of origin. The strongest penalty is experienced by children of step-families that, unlike children living in other single-parent households, suffered a double disruption. First, they experienced the separation/divorce of the biological parents, and then they had to integrate into a new family structure, which may also imply cohabiting with the children of the step-parent.

What are the implications of these results from a social stratification point of view? Results shown in this paper are in partial contradiction with the Diverging Destinies Thesis (DDT), according to which changes in FAs brought about by the SDT increase social inequalities as children of lower socioeconomic background are more at risk of living in nonintact households and are more negatively affected by them. Results showed that living in nonstandard FAs worsens children's educational outcomes, but this penalty is only partially explained by differences in the socioeconomic composition of the FA, and the evidence concerning the posited action of compensatory mechanisms linked to high socioeconomic background is mixed.

The interaction between FAs and social origin (measured with parental education) shows substantial heterogeneity in the effects of FAs, depending on the combination between the social background of origin and the educational outcome considered, which is different from the findings of Bernardi and Boertien (2017b) for the United Kingdom. If the risk of being in the worst condition is considered, namely if the chances of not being enrolled in a five-year upper-secondary school are analysed, then the negative association between nonstandard FAs and educational attainment is stronger for children of low-educated parents. On the contrary, if the chances of entering the academic track are analysed, our best condition, then children of tertiary educated parents are those with the higher risk of failure when living in nonstandard FAs.

This heterogeneity makes it difficult to evaluate whether and how new family behaviours affect educational inequalities, which is something that future studies should consider when assessing empirically the DDT (Bernardi and Boertien 2017b). Possible negative effects of nonstandard FAs are embedded in the social structure because they interact with the actual risks, possibilities, and constraints that characterize different positions in the social hierarchy.

Empirical analyses also aimed at digging deeper into the negative association between cohabitation and children's educational attainment, analysing the time of 'exposure' to marriage. Results showed that educational opportunities are higher if children are born a few years after parental marriage. Indeed, when the two biological parents never married (cohabiting), the opportunities of enrolling in a five-year upper-

secondary school are at their minimum. Opportunities increase, reaching a peak if the child was born a few years after marriage, and remain stable afterwards. If the chances of entering the academic track are considered, an inverted U-shaped relation is found. In this case, the probabilities are higher when the parents are married and the child is born three years after the marriage, and then decline again. Also in this case, the patterns are confirmed when sociodemographic characteristics of the families are controlled for and vary among social groups based on the combination between social origin and the educational outcome considered.

Although the analysis of the exposure to marriage has a descriptive aim that does not allow us to identify causal effects, it is useful for shedding some light on the possible mechanisms underpinning the negative association between cohabitation and children's educational attainment. The negative effects of cohabitation could stem either from its being part of a 'pattern of disadvantage' (Perelli-Harris and Gerber 2011; Vignoli, Tocchioni, and Salvini 2016) – according to which cohabitations are driven by economic necessity and unstable relationships and are more subject to family dissatisfaction – or from social selectivity into a normatively deviant FA. Results presented in this article support the latter, for two reasons. First, even children born from cohabiting parents that would have gotten married fare worse than children of parents who were married since childbirth. Second, children of married parents reach their highest enrolment probabilities if they were born few years after marriage rather than around the timing of marriage. That is, better educational outcomes are associated with the most prevalent and normatively accepted setting for childbearing in the Italian context, and the proximity to the social norm must be even stronger to enhance children's chances of enrolment in the academic track.

9. Acknowledgements

A preliminary version of this paper has been presented at the 2018 SISEC conference, Università Cattolica (Milan), January 25–27. Authors would like to thank all participants, and in particular Marco Albertini, Gabriele Ballarino, Paolo Barbieri, Stefano Cantalini, Stefani Scherer, and Daniele Vignoli. Raffaele Guetto acknowledges the financial support provided by the European Union's Horizon 2020 research and innovation programme/ERC Grant Agreement No 725961 (EU-FER project "Economic Uncertainty and Fertility in Europe", PI: Daniele Vignoli).

References

Addo, F.R., Sassler, S., and Williams, K. (2016). Reexamining the association of maternal age and marital status at first birth with youth educational attainment. *Journal of Marriage and Family* 78(5): 1252–1268. doi:10.1111/jomf.12360.

Albertini, M. and Dronkers, J. (2009). Effects of divorce on children's educational attainment in a Mediterranean and Catholic society. *European Societies* 11(1): 137–159. doi:10.1080/14616690802248042.

Amato, P.R. (1987). Family processes in one-parent, stepparent, and intact families: The child's point of view. *Journal of Marriage and Family* 49(2): 327–337. doi:10.2307/352303.

Amato, P.R. (2000). The consequences of divorce for adults and children. *Journal of Marriage and Family* 62(4): 1269–1287. doi:10.1111/j.1741-3737.2000.01269.x.

Amato, P.R. (2010). Research on divorce: Continuing trends and new developments. *Journal of Marriage and Family* 72(3): 650–666. doi:10.1111/j.1741-3737.2010.00723.x.

Amato, P.R. and Anthony, C.J. (2014). Estimating the effects of parental divorce and death with fixed effects models. *Journal of Marriage and Family* 76(2): 370–386. doi:10.1111/jomf.12100.

Ballarino, G. and Panichella, N. (2014). Origini familiari, scuola secondaria e accesso all'università dei diplomati italiani, 1995–2007. *Scuola democratica* 2: 365–392.

Ballarino, G. and Panichella, N. (2016). Social stratification, secondary school tracking and university enrolment in Italy. *Contemporary Social Science* 11(2–3): 169–182. doi:10.1080/21582041.2016.1186823.

Ballarino, G. and Schadee, H. (2010). Allocation and distribution: A discussion of the educational transition model, with reference to the Italian case. *Research in Social Stratification and Mobility* 28(1): 45–58. doi:10.1016/j.rssm.2009.12.005.

Baranowska-Rataj, A., Mynarska, M., and Vignoli, D. (2014). A dirty look from the neighbors. Does living in a religious neighborhood prevent cohabitation? Warsaw: Warsaw School of Economics (Institute of Statistics and Demography Working Papers 41/2014)

Bernardi, F. (2014). Compensatory advantage as a mechanism of educational inequality: A regression discontinuity based on month of birth. *Sociology of Education* 87(2): 74–88. doi:10.1177/0038040714524258.

Bernardi, F. and Ballarino, G. (2016). *Education, occupation and social origin: A comparative analysis of the transmission of socio-economic inequalities*. Cheltenham: Edward Elgar.

Bernardi, F. and Boertien, D. (2016). Understanding heterogeneity in the effects of parental separation on educational attainment in Britain: Do children from lower educational backgrounds have less to lose? *European Sociological Review* 32(6): 807–819. doi:10.1093/esr/jcw036.

Bernardi, F. and Boertien, D. (2017a). Non-intact families and diverging educational destinies: A decomposition analysis for Germany, Italy, the United Kingdom and the United States. *Social Science Research* 63: 181–191. doi:10.1016/j.ssresearch.2016.09.004.

Bernardi, F. and Boertien, D. (2017b). Explaining conflicting results in research on the heterogeneous effects of parental separation on children's educational attainment according to social background. *European Journal of Population* 33(2): 243–266. doi:10.1007/s10680-017-9417-5.

Bernardi, F. and Radl, J. (2014). The long-term consequences of parental divorce for children's educational attainment. *Demographic Research* 30(61): 1653−1680. doi:10.4054/DemRes.2014.30.61.

Blau, P. and Duncan, O.T. (1967). *The American occupational structure*. New York: Wiley.

Booth, A. and Amato, P.R. (1994). Parental marital quality, parental divorce, and relations with parents. *Journal of Marriage and Family* 56(1): 21–34. doi:10.2307/352698.

Breen, R. and Jonsson, J. (2000). Analyzing educational careers: A multinomial transition model. *American Sociological Review* 65(5): 754–772. doi:10.2307/2657545.

Cameron, S.V. and Heckman, J.J. (1998). Life cycle schooling and dynamic selection bias: Models and evidence for five cohorts of American males. *Journal of Political Economy* 106(2): 262–333. doi:10.1086/250010.

Castiglioni, M. and Dalla Zuanna, G. (2009). Marital and reproductive behavior in Italy after 1995: Bridging the gap with western Europe? *European Journal of Population* 25(1): 1–26. doi:10.1007/s10680-008-9155-9.

Checchi, D. and Flabbi, L. (2013). Intergenerational mobility and schooling decisions in Germany and Italy: The impact of secondary school tracks. *Rivista di Politica Economica* 3: 7–57.

Contini, D. and Scagni, A. (2011). Inequality of opportunity in secondary school enrolment in Italy, Germany and the Netherlands. *Quality and Quantity* 45(2): 441–464. doi:10.1007/s11135-009-9307-y.

Erikson, R. and Jonsson, J.O. (1996). Explaining class inequality in education: The Swedish test case. In: Erikson, R. and Jonsson, J.O. (ed.). *Can education be equalized? The Swedish case in comparative perspective*. Boulder: Westview: 1–63.

Erikson, R., Goldthorpe, J.H., and Portocarero, L. (1979). Intergenerational class mobility in three western European societies: England, France and Sweden. *The British Journal of Sociology* 30(4): 415–441. doi:10.2307/589632.

Esping-Andersen, G. and Billari, F. (2015). Re-theorizing family demographics. *Population and Development Review* 41(1): 1–31. doi:10.1111/j.1728-4457.2015.00024.x.

Grätz, M. (2015). When growing up without a parent does not hurt: Parental separation and the compensatory effect of social origin. *European Sociological Review* 31(5): 546–557. doi:10.1093/esr/jcv057.

Guetto, R. and Panichella, N. (2013). Geographical mobility and reproductive choices of Italian men. *European Sociological Review* 29(2): 302–315. doi:10.1093/esr/jcr068.

Guetto, R. and Vergolini, L. (2017). Educational expansion without equalization: A reappraisal of the 'effectively maintained inequality' hypothesis in children's choice of the upper secondary track. *European Societies* 19(1): 1–27. doi:10.1080/14616696.2016.1236283.

Guetto, R., Luijkx, R., and Scherer, S. (2015). Religiosity, gender attitudes and women's labour market participation and fertility decisions in Europe. *Acta Sociologica* 58(2): 155–172. doi:10.1177/0001699315573335.

Guetto, R., Mancosu, M., Scherer, S., and Torricelli, G. (2016). The spreading of cohabitation as a diffusion process: Evidence from Italy. *European Journal of Population* 32(5): 661–686. doi:10.1007/s10680-016-9380-6.

Härkönen, J. and Dronkers, J. (2006). Stability and change in the educational gradient of divorce: A comparison of seventeen countries. *European Sociological Review* 22(5): 501–517. doi:10.1093/esr/jcl011.

Ichou, M. and Vallet, L.-A. (2011). Do all roads lead to inequality? Trends in French upper secondary school analysed with four longitudinal surveys. *Oxford Review of Education* 37(2): 167–194. doi:10.1080/03054985.2011.559350.

Italian Institute of Statistics (Istat) (2016). I percorsi di studio e lavoro dei diplomati e dei laureate: Statistiche report. Rome: Istat.

Lesthaeghe, R. (2010). The unfolding story of the second demographic transition. *Population and Development Review* 36(2): 211–251. doi:10.1111/j.1728-4457.2010.00328.x.

Lucas, S.R. (2001). Effectively maintained inequality: Educational transitions and social background. *American Journal of Sociology* 106(6): 1642–1690. doi:10.1086/321300.

Manning, W.D. and Lamb, K.A. (2003). Adolescent well-being in cohabiting, married, and single-parent families. *Journal of Marriage and Family* 65(4): 876–893. doi:10.1111/j.1741-3737.2003.00876.x.

Martin, M.A. (2012). Family structure and the intergenerational transmission of educational advantage. *Social Science Research* 41(1): 33–47. doi:10.1016/j.ssresearch.2011.07.005.

Martinez, C.R. and Forgatch, M.S. (2002). Adjusting to family change: Linking family structure transitions with parenting and boys' adjustment. *Journal of Family Psychology* 16(2): 107–117. doi:10.1037/0893-3200.16.2.107.

McLanahan, S. (2004). Diverging destinies: How children are faring under the second demographic transition. *Demography* 41(4): 607–627. doi:10.1353/dem.2004.0033.

Ní Bhrolcháin, M. and Beaujouan, É. (2013). Education and cohabitation in Britain: A return to traditional patterns? *Population and Development Review* 39(3): 441–458. doi:10.1111/j.1728-4457.2013.00611.x.

Panichella, N. and Triventi, M. (2014). Social inequalities in the choice of secondary school: Long-term trends during educational expansion and reforms in Italy. *European Societies* 16(5): 666–693. doi:10.1080/14616696.2014.939685.

Perelli-Harris, B. and Gerber, T.P. (2011). Nonmarital childbearing in Russia: Second demographic transition or pattern of disadvantage? *Demography* 48(1): 317–342. doi:10.1007/s13524-010-0001-4.

Rosina, A. and Fraboni, R. (2004). Is marriage losing its centrality in Italy? *Demographic Research* 11(6): 149–172. doi:10.4054/DemRes.2004.11.6.

Schneider, S.L. and Tieben, N. (2011). A healthy sorting machine? Social inequality in the transition to upper secondary education in Germany. *Oxford Review of Education* 37(2): 139–166. doi:10.1080/03054985.2011.559349.

Sweeney, M.M. (2010). Remarriage and stepfamilies: Strategic sites for family scholarship in the 21st century. *Journal of Marriage and Family* 72(3): 667–684. doi:10.1111/j.1741-3737.2010.00724.x.

Van de Werfhorst, H. and Mijs, J.J.B. (2010). Achievement inequality and the institutional structure of educational systems: A comparative perspective. *Annual Review of Sociology* 36: 407–428. doi:10.1146/annurev.soc.012809.102538.

Vignoli, D. and Salvini, S. (2014). Religion and union formation in Italy: Catholic precepts, social pressure, and tradition. *Demographic Research* 31(35): 1079–1106. doi:10.4054/DemRes.2014.31.35.

Vignoli, D., Tocchioni, V., and Salvini, S. (2016). Uncertain lives: Insights into the role of job precariousness in union formation in Italy. *Demographic Research* 35(10): 253–282. doi:10.4054/DemRes.2016.35.10.

Appendix

Table A-1: Descriptive statistics

	N	%	% enr	% acad
Independent variable, first step of the analysis: Comparing different FAs (N = 123,045)				
Family arrangements				
Two biological married	104,851	85.2	88.3	31.0
Two biological cohabiting	1,771	1.4	79.1	21.1
One biological with a step-parent	2,590	2.1	78.4	19.0
One biological lone	2,656	2.2	80.8	25.8
One biological separated/divorced	7,845	6.4	84.2	23.8
One biological widow	3,332	2.7	84.7	28.0
Independent variable, second step of the analysis: Exploring the exposure to marriage (only two biological parents, N = 106,235)				
Exposure to marriage				
Never married (cohabiting)	1,771	1.7	79.1	21.1
<–9 (birth before marriage)	876	0.8	75.8	19.2
–1/–8 (birth before marriage)	2,581	2.4	77.4	22.4
0 (same year)	2,125	2.0	82.6	24.1
+1 (birth after marriage)	11,285	10.6	88.2	29.9
+2 (birth after marriage)	15,393	14.5	89.9	34.3
+3 (birth after marriage)	11,539	10.9	89.5	35.1
+4 (birth after marriage)	9,981	9.4	89.1	33.4
+5 (birth after marriage)	9,037	8.5	89.4	31.9
+6 (birth after marriage)	7,984	7.5	89.2	31.7
+7 (birth after marriage)	6,956	6.6	89.6	30.7
+8 (birth after marriage)	5,421	5.1	89.6	29.3
+9 (birth after marriage)	4,544	4.3	86.4	28.5
>10 (birth after marriage)	16,742	15.8	87.7	28.0
Main controls (Total sample, N = 123,045)				
Social class (dominance)				
Service class	20,133	16.4	96.7	60.2
White collar	30,442	24.7	94.0	37.5
Petite bourgeoisie	24,086	19.6	87.7	25.3
Working class	35,727	29.0	79.7	14.3
Unemployed or inactive	12,657	10.3	78.1	16.6
Parental education (dominance)				
Elementary or no title	6,009	4.9	58.2	5.1
Lower-secondary	40,864	33.2	80.6	13.4
Vocational upper-secondary (2–3 years)	11,312	9.2	85.2	17.2
Upper-secondary (5 years)	45,383	36.9	94.0	36.1
Tertiary	19,477	15.8	96.7	65.4
Sex				
Male	63,741	51.8	85.7	27.9
Female	59,304	48.2	89.3	32.1
Birth abroad				
No	114,216	92.8	88.9	31.3
Yes	8,829	7.2	67.9	12.6

Table A-1: (Continued)

	N	%	% enr	% acad
Main controls (Total sample, N = 123,045)				
Birth order				
Only child	22,971	18.7	89.3	32.2
First-born	45,308	36.8	88.5	32.4
Second-born	45,599	37.1	86.7	27.8
Third-born or more	9,167	7.5	81.3	22.5
Family size				
Fewer than 3 children	93,898	76.31	89.2	31.9
Three children or more	29,147	23.69	81.6	23.6

Table A-2: Beta coefficients (with robust standard errors) from linear probability models on the probability of being enrolled in a five-year upper-secondary school and in the academic track (Model 3 in Table 1 in the main text)

	Enrollment		Academic track	
	β	σ(β)	β	σ(β)
Family structure [ref: two biological married]				
Two biological cohabiting	–0.08***	(0.01)	–0.07***	(0.01)
One biological with a step-parent	–0.06***	(0.01)	–0.08***	(0.01)
One biological lone	–0.04***	(0.01)	0.02*	(0.01)
One biological separated/divorced	–0.03***	(0.01)	–0.03***	(0.01)
One biological widow	–0.00	(0.01)	0.01	(0.01)
Birth order [ref: only child]				
First-born	0.01***	(0.00)	0.02***	(0.00)
Second-born	–0.02***	(0.00)	–0.04***	(0.00)
Third-born or more	–0.03***	(0.01)	–0.06***	(0.01)
Family size [ref: less than three children]	–0.04***	(0.00)	–0.03***	(0.00)
Age [ref: 15 years of age]	–0.01***	(0.00)	–0.01***	(0.00)
Born abroad [ref: no]	–0.15***	(0.01)	–0.06***	(0.01)
Sex [ref: Male]	0.03***	(0.00)	0.04***	(0.00)
Age of parents at interview [ref: less than 40]				
41–45	0.05***	(0.00)	0.05***	(0.00)
46–50	0.06***	(0.00)	0.08***	(0.00)
>51	0.08***	(0.00)	0.10***	(0.01)
Social origin [ref: Service & tertiary]				
Service & elementary or no title	–0.09*	(0.06)	–0.60***	(0.04)
Service & lower-sec	–0.06***	(0.01)	–0.50***	(0.02)
Service & voc upper-sec (two to three years)	–0.06***	(0.02)	–0.50***	(0.02)
Service & upper-sec (5 years)	–0.00	(0.00)	–0.28***	(0.01)
White collar & elementary or no title	–0.35***	(0.06)	–0.67***	(0.03)
White collar & lower-sec	–0.07***	(0.01)	–0.54***	(0.01)
White collar & voc upper-sec (2–3 years)	–0.04***	(0.01)	–0.48***	(0.01)
White collar & upper-sec (5 years)	–0.01***	(0.00)	–0.33***	(0.01)
White collar & tertiary	–0.01*	(0.00)	–0.13***	(0.01)

Table A-2: (Continued)

	Enrollment		Academic track	
	β	σ(β)	β	σ(β)
Social origin [ref: Service & tertiary]				
Petty bourgeoisie & elementary or no title	–0.34***	(0.02)	–0.66***	(0.01)
Petty bourgeoisie & lower-sec	–0.12***	(0.01)	–0.56***	(0.01)
Petty bourgeoisie & voc upper-sec (2–3 yrs)	–0.07***	(0.01)	–0.51***	(0.01)
Petty bourgeoisie & upper-sec (5 years)	–0.02***	(0.00)	–0.35***	(0.01)
Petty bourgeoisie & tertiary	–0.01	(0.01)	–0.23***	(0.02)
Working class & elementary or no title	–0.37***	(0.01)	–0.66***	(0.01)
Working class & lower-sec	–0.15***	(0.00)	–0.59***	(0.01)
Working class & voc upper-sec (2–3 yrs)	–0.11***	(0.01)	–0.55***	(0.01)
Working class & upper-sec (5 years)	–0.05***	(0.01)	–0.47***	(0.01)
Working class & tertiary	–0.02	(0.01)	–0.43***	(0.02)
Unemp/inactive & elementary or no title	–0.37***	(0.01)	–0.69***	(0.01)
Unemp/inactive & lower-sec	–0.19***	(0.01)	–0.62***	(0.01)
Unemp/inactive & voc upper-sec (2–3 yrs)	–0.13***	(0.02)	–0.55***	(0.02)
Unemp/inactive & upper-sec (5 years)	–0.05***	(0.01)	–0.42***	(0.01)
Unemp/inactive & tertiary	–0.03*	(0.02)	–0.20***	(0.03)
Constant	0.89***		0.68***	(0.01)
Observations	123,045		123,045	

Note: *** p<0.01, ** p<0.05, * p<0.1. Coefficients for the region of residence (NUTS-2) and trimester of interview not shown. Weights applied.