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Re-partnering and fertility

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Abstract

European divorce rates have been rising since the 1970s. Concurrently, as more couples choose cohabitation over marriage, there has also been an increase in separations among cohabiting partners. Nearly 50% of separated individuals form new relationships within five years. These trends may have important implications for fertility research. Are re-partnered women more likely to continue having children than women who have never separated? Do re-partnered women approach fertility decisions differently? Does re-partnering help recover the births 'lost' due to separation? To address these questions, we utilise longitudinal data from 2004 to 2018 across 32 European countries, employing probit models for our analysis. We find that women in higher-order unions are, on average, more likely to have an additional child compared to those who already have children with their current partner. The former group appears less burdened by having more or older children and is less influenced by family income. Predictions from our models indicate that births lost due to union dissolution can only be recovered when re-partnering occurs relatively quickly.

Keywords: Separation, Divorce, Re-partnering, Fertility, Europe

Introduction

In the wake of the sweeping social changes of the 1960s, the "partnering revolution" has had a deep and lasting impact on the way individuals establish and re-establish families and households in the western world. As described within the Second Demographic Transition framework (Lesthaeghe, 1983; Lesthaeghe & van de Kaa, 1986 and van de Kaa, 1987), unions became less stable and less frequently formalised through marriage, while childbearing was less associated with being in a stable married couple (see Lesthaeghe, 2014).

Meanwhile, re-partnering after a union dissolution has become more common, bringing new family scenarios in which fertility can be realised. When a relationship ends at younger ages, if a new partner enters the household during the fertile years (additional) children may be conceived. Indeed, there is abundant evidence that many women re-partner—starting a new cohabitation or marriage—during their fertile age (Beaujouan, 2012; Perelli-Harris & Lyons-Amos, 2015; Vanassche et al., 2015 and Fisher & Zhu, 2019).

The question of childbearing in re-partnered couples is particularly relevant in the context of low and declining fertility rates, which are often observed in high-income

countries where also unions tend to be less stable. Understanding whether and under which conditions, the experience of union dissolution is associated with lower fertility could provide insights into an increasingly significant proportion of fertility patterns. The phenomenon of childbearing in re-partnered couples, in fact, is quantitatively relevant. Thomson et al. (2020) show that multi-partner fertility contributes about 9% of total births in 14 European countries and the phenomenon has been persistent for decades. Moreover, the present literature does not fully provide a systematic comparison between fertility behaviours among people in same-partnered couples and those who have re-partnered.

Hence, we argue that exploring which individual factors increase or decrease the likelihood of having a (new) child among re-partnered women allows to glance into fertility mechanisms within a non-traditional (even increasingly common) pattern of family formation.

In this study, we specifically examine whether the likelihood of having a child differs for mothers who have separated and formed a new cohabiting relationship compared to those who remained with the father of their children. According to the "value of children" framework (Friedman et al., 1994), parents' decisions regarding childbearing are influenced by the perceived benefits and costs of having children, including emotional and social factors. The hypothesis here is that for re-partnered couple having (another) child serves an emotional and social function of solidifying and officializing the new family. Thus, the size of the effect of factors that commonly reduced the probability to have an additional child is reduced in case of re-partnered individuals.

Analytically, this means that after identifying any difference, we seek to understand the underlying reasons: what factors do re-partnered women prioritise more or less than those who remain with the same partner when deciding to have another child?

The empirical analyses presented in this paper are based on data from the longitudinal version of the European Survey of Income and Living Conditions (EU-SILC), covering 32 countries and spanning the years 2004–2018. We use probit and bivariate probit regression models for the analysis. The study focuses exclusively on women: we exclude men as the number of re-partnered fathers with co-resident children in the dataset is too small for meaningful analysis. Although the dataset covers a large number of countries and observations, it is not possible to conduct country-specific analyses. This is due to the small percentage of single women who form a new relationship within the observed time frame, necessitating the pooling of data across all countries. However, the detailed information available in the dataset about the woman, her partner and her family, offers interesting insights into the fertility decisions of re-partnered women.

The article is organised as follows: Sect. "Literature review" presents the literature review, Sect. "Data" describes the data while Sect. "Methods" the methodology used; the results are presented in Sect. "Empirical findings", while Sect. "Discussion and conclusions" concludes.

Literature review

Why could re-partnered couples wish to have more children than stable couples?

There are not mere economic costs and rewards of having children, who are, therefore, not just the outcome of a rational decision based on economic convenience. The desire

to have children is related to the wider set of values they serve (e.g. Hoffman & Hoffman, 1973). Consequently, the social (e.g. conformity with prevalent social norms and expectations) or emotional (e.g. the joy of spending time with them) rewards can surpass their economic costs. Ivanova et al. (2014), for example, show that after re-partnering, men and women seek to have children with the new partner for two main reasons: the desire for parenthood and commitment. In the literature on fertility among re-partnered couples, authors usually refer to the "value-of-children perspective" (Friedman et al., 1994) as a framework through which partners' fertility choices can be interpreted (Ivanova et al., 2014 and Guzzo, 2017). Among these couples, in particular, the shared child (ren) would represent a symbol of their commitment (Stewart, 2002) and a signal to the community (Coleman, 1988 and Astone et al., 1999). Thus, we can expect that, although the emotional and social rewards of having children are relevant for all couples, the non-economic "value of children" for re-partnered couples weighs more than the economic costs associated with childbearing on fertility decisions. More specifically, given the same number of children (and only in cases where other children are already present), the value associated with a (new) child for re-partnered couples may offset the (economic) cost that other couples see.

The effect of demographic and individual socio-economic factors

Having reached the desired fertility and the family socio-economic conditions are among the most potentially impacting factors on fertility behaviours. However, these factors could play different roles when considering re-partnered and same-partnered women, as establishing a new union is associated with new needs, desires, and difficulties for the partners.

In many cases, children from previous unions may cohabit with one of their parents and her or his new partner. The literature provides contrasting evidence. Some authors (e.g., Vikat et al., 2004, using Austrian and Finnish data) find that the presence of stepchildren reduces the probability of a birth in the new union, while others (e.g. Hohmann-Marriott, 2015, analysing the UK) find that co-resident stepchildren increase re-partnered couples' desire for childbearing, when compared to analogous couples without co-resident offspring from previous unions. Using Swedish data from the 1970s and 1980s, Vikat et al. (1999), show that re-partnered women desire children with the new partner, independently of already having child (ren) from previous unions. Guzzo (2017), for the US, finds that women in stepfamilies are more likely to have a shared child with the new partner than women in unions where both partners are childless.

Re-partnered couples living in disadvantaged economic conditions are more likely to have children than those in affluent households formed after re-partnering. Indeed, US women living in fragile economic conditions are more prone to multi-partnered fertility than women in affluent conditions, as the former view children as a form of support in case they fall on hard times (Harknett & Knab, 2007). Analogous evidence for both genders, again in the US, has been found more recently by Monte (2019), who also highlights that the phenomenon of multi-partnered fertility is widespread among disadvantaged minorities (i.e. blacks and Latin-Americans). These results are consistent with the faster pace of re-partnering by economically fragile women (Fisher & Zhu, 2019). In some cases, this phenomenon may depend on the aid and support provided by generous

welfare systems (Fernández-Soto et al., 2020), but the evidence from the US suggests that this cannot be the only explanation.

Selection in and timing of separation

Union dissolution may lead to lower fertility, because either re-partnering may never occur or take time (Jefferies et al., 2000), or re-partnered couples may not live in the same household, making childbearing less likely (Bernardi et al., 2018). Kulu and Mikolai (2017) show that people who are separated experience more residential instability than those living in unions; consequently, the authors argue that such a pattern may result in deterioration of the psychological and socio-economic conditions of the separated individual, indirectly affecting future re-partnering and childbearing. Increasing divorce rates may therefore partially account for the decline in fertility rates in many countries since the 1960s (Van Bavel et al., 2012 and Madsen et al., 2018).

The literature finds that re-partnered women have higher fertility rates than the same-partnered (Meggiolaro & Ongaro, 2010). However, other studies found that differences between re-partnered and stable couples depend on the timing in the partnership history and the woman's age. Holland and Thomson (2014) show that, when compared to same-partnered couples, the higher fertility of those re-partnered disappears about two years after the formation of stepfamilies and then reverses. Focusing on Germany, Henz (2002) found small differences, which, however, diminish as the duration of unions increases. About the age effect, Thomson et al. (2012) present a simulation based on French data, which compares the fertility trajectories of women in stable unions with those of women who re-partner. The results show that, although fertility is lower in the latter than in the former group, the differences are small and such distance decreases with age at first pregnancy. The evidence is in fact mixed, with some studies not confirming these outcomes: Beaujouan and Solaz (2008), in an empirical inquiry on French data, found that women who re-partnered and those whose unions did not dissolve have statistically equal fertility rates.

Hypotheses

Based on existing literature, our expectation in conducting this research is to find a positive association between re-partnering and fertility. This may be explained by the value-of-children perspective that, for re-partnered couples, having a child can serve as a symbol of commitment. Additionally, certain observable characteristics may influence the fertility choices of re-partnered women differently. For example, a low household income may rise the cost of the decision to have an additional child, but this cost might be lower in case of re-partnered couples if the value of children hypothesis holds. Lastly, the time interval between the dissolution of the previous relationship and the formation of a new one could play a significant role in whether or not births lost due to separation are recovered. Longer is the time required, shorter is the time-frame in which births can be realized.

Table 1 Descriptive statistics. Source: European Survey on Income and Living Conditions, panel datasets, years 2007–2018

	Re-partnered	Same partner	Single	Separating
Wave 1				
Number of children	1,75	1,97	1,71	1,93
Age of the youngest child	6,77	6,72	8,52	6,65
Age of the woman	34,3	36,6	36,8	35,7
Woman with tertiary education	0,261	0,329	0,248	0,281
Woman with secondary education	0,494	0,475	0,517	0,485
Woman with less than secondary education	0,245	0,196	0,235	0,235
Waves 2–3-4				
Newborn	0,224	0,137	0,051	0,092
Observations	2259	97943	13397	4434
Sample composition (%)	1,9	83,0	11,4	3,8

Women 20–45 years old with children younger than 18 in wave 1, observed for four waves, all countries

Data

We use data from the European Survey on Income and Living Conditions (EU-SILC), covering 32 countries over the period 2007–2018. The EU-SILC is one of the primary data sources for the European Union's periodic reports on the social and economic conditions in member countries. The survey collects information on all family members: for those aged 16 and older, questions focus on education, employment and all forms of income. For those under 16, demographic data, information about care arrangements and school attendance are recorded. The family structure can be reconstructed by analysing the relationships between members: for each individual, the survey reports the identifier numbers of their partner, mother and father, if they all live in the same household.

There are two versions of the survey: cross-sectional and longitudinal. In the longitudinal data, a sub-sample of individuals from the cross-sectional sample are interviewed for three additional years, creating a four-wave panel. For example, the 2018 dataset includes individuals first surveyed in 2015 (wave 1) and then re-interviewed in 2016, 2017 and 2018 (waves 2–4). Similarly, the 2007 dataset includes individuals interviewed across four waves from 2004 to 2007. Of the 12 panel datasets available (from 2007 to 2018), each country is present in an average of 10 datasets, as European countries gradually entered the survey program. In 2007, there were only 15 countries, but by the following year, the number had already reached 25. Our analysis focuses on the longitudinal data, specifically on women observed over four waves who, in wave 1, were between 20 and 45 years old and had at least one child under the age of 18.[1] We observe 118,033 women who meet these criteria: the country with the most observations is France (approximately 14,000), while Serbia has the fewest (around 1,000). These mothers, of childbearing age, are categorised into four groups: (1) "women with the same partner" (same partner in her household in all waves); (2) "single women" (no partner in any

[1] The probability of being interviewed four times is approximately 60%, as shown in Table A1 (Appendix), which is not particularly high. However, the women included in our sample (Table A1, right column, interviewed four times) are similar – in terms of personal characteristics—to the women in the total sample (Table A1, left column).

wave); (3) "re-partnered women" (e.g., no partner in waves 1 and 2, but a new partner in her household in waves 3 and 4); and (4) "separating women" (e.g., partner in her household in waves 1 and 2, no partner in waves 3 and 4, or other more complex sequences). Depending on the analysis, we use different subgroups from this classification. Table 1 shows their socio-demographic characteristics and distribution in the sample. Out of 118,033 mothers with minor children observed over four years, our category of interest represents only 1.9%. The majority (83%) of these mothers are observed with the same partner across all waves. Single women account for 11.4% and the remaining 3.8% are women who separated or followed more complex relationship sequences. Although the re-partnered group is the smallest, its size—2,259 women—allows for statistically robust analyses.

Regarding socio-demographic characteristics, re-partnered women tend to be younger and have fewer children. The education levels of re-partnered, single and separating women are comparable, whereas women who remain with the same partner generally have higher educational attainment. The "new-born" variable is a dummy indicating the birth of a child in waves 2–4. For re-partnered women, this variable is equal 1 if the birth occurred while the new partner was already residing with her. On average, re-partnered women lived with their new partner for 2.09 out of the three observed years. The probability of having a child is significantly higher for re-partnered women, consistently with our hypothesis: 22.4% compared to 13.7% for women with the same partner, 9.2% for separating women and 5.1% for single women. This is partly due to re-partnered women being younger and having fewer children—factors we account for in our regression models.

In the analysis, we focus on women who transitioned from singleness to a new partnership within a four-year window, which means we are more likely to observe women who form new co-residing relationships relatively quickly. If there are unobservable characteristics that influence both the timing of new couple formation and fertility propensity, then the estimates from our models may be biased. Accounting for the selection into 're-partnering' (though unfortunately not the timing) may help mitigate this issue.

In the analyses that will follow, we also consider the age and education level of the partner (whether "new" or "the same") and a variable indicating household income levels.

The data used present some limitations. First, the analysis only includes women, as the number of re-partnered fathers with co-resident children in the dataset is too small. Second, it is not possible to determine whether the new partner already had non-resident children. This prevents us from distinguishing between a desire for fatherhood and the value of children perspective.

Methods

In this section, we outline the methods used to examine whether the likelihood of having a child differs for mothers who have separated and formed a new cohabiting relationship compared to those who remain with the same partner. Additionally, we explore which factors these women prioritise more or less when deciding to have another child, with respect to the others. Although the data from which we derive the information is longitudinal, the newborn outcome is defined only once for each

woman. It is assigned a value of 1 if she had a new child in waves 2, 3, or 4, and 0 otherwise. The data is then analyzed using cross-sectional regression models.

We begin with a simple probit regression model and gradually increase its complexity to better address our research questions. Our first model is as follows:

$$newborn = \alpha_1 + \beta_1\, repartnered + \gamma_1\, single + \delta_1\, children + \theta_1\, woman + \varepsilon_1 \tag{1}$$

The dependent variable is the likelihood of having a child during waves 2–4, captured by the "new-born" variable. Model [1] is estimated using sub-samples of re-partnered women, single women and women who remained with the same partner. This approach allows us to compare fertility outcomes, controlling for the characteristics of the women (age, education) and their children (number, age).

In model [2] instead, the comparison is limited to re-partnered women and those with the same partner, allowing us to include variables related to the partner:

$$newborn = \alpha_2 + \beta_2 repartnered + \delta_2 children + \theta_2 woman + \zeta_2 partner + \varepsilon_2 \tag{2}$$

Model [2] addresses the question: given the same family characteristics, do re-partnered women have more children compared to women with the same partner?

Progressively, model [3], allows each independent variable to have a different effect on the two sub-groups (re-partnered and women with the same partner). This helps determine whether factors, like the woman's age for example, have the same impact in both groups. To achieve this, we include interactions between the variable "re-partnered" and all individual and family variables:

$$newborn = \alpha_3 + \beta_3 repartnered + \kappa_3 X + \varphi_3 repartnered * X + \varepsilon_3 \tag{3}$$

where X includes individual and family characteristics.

Unlike other studies (e.g., Thomson 2012), we are unable to simultaneously study the process of separation and re-partnering because we lack complete family history data. It is possible that unobservable factors influence both the likelihood of finding a new partner and having a child. For instance, extroverted women may be more likely to re-partner and, as suggested in the literature, to have a child (Tavares, 2010). To explore this further, model [4] jointly estimates the probability of having a new child and the likelihood of being a re-partnered woman:

$$newborn = \alpha_4 + \beta_4 repartnered + \kappa_4 X + \varphi_4 repartnered * X + \varepsilon_4 \tag{4}$$

$$repartnered = \sigma_4 + \lambda_4 woman + \eta_4 Z + \mu_4 \tag{5}$$

To better identify the model, the probability of being re-partnered depends on two other factors, in addition to personal characteristics: living in a city and years of work experience. Higher population density eases social contacts, increasing the likelihood of finding a new partner. Furthermore, in urban areas, behaviours such as re-partnering may be more culturally accepted. Similarly, women who are more integrated into the workforce may have broader social networks and be less traditional, making them more likely to separate and re-partner.

Models [1], [2] and [3] are estimated using a probit model, while model [4] employs a bivariate probit model. In all models, we include time dummy variables. Additionally, we weight the observations by country. For example, in the sub-sample of re-partnered women, Italian women represent the 4.9%; in the sub-sample of women with the same partner, Italian women represent the 7.7%; in the sub-sample of single women, Italian women represent the 5.8%. Therefore, we reweight the samples of Italian single women (model [1]) and Italian women with the same partner (models [1–4]) to ensure that their overall weight is 4.9%. This ensures that differences in country composition do not affect the results.

Empirical findings

Table 2 comprise all results. The sample used in Model [1] includes re-partnered, single and same-partner women; the samples of Models [2–4] include both re-partnered women and those with the same partner; results from Model [4] are shown in two columns (one for the fertility outcome; the other for the selection outcome).

Model [1] reveals that single and re-partnered women have significantly different probabilities of having a child compared to women who remain with the same partner. The negative effect of being single is, in absolute terms, much larger than the positive effect associated with re-partnering: compared to women who stay with the same partner, re-partnered women are 3.8 percentage points more likely to have a child, while single women are 8.3 percentage points less likely. Again, this outcome confirms our hypothesis. As for other findings, there is a negative effect related to the number of children a woman already has, as expected, and a negative effect linked to the age of the youngest child, indicating that mothers tend not to space the births of their children too far apart. We also observe a positive effect of the woman's age, up to age 25, after which the probability declines. Women with an average level of education are the least likely to have a child, compared to those with higher or lower educational attainment.

In Model [2], we exclude single women from the sample and include partner-related variables and family income among the independent variables. For each couple, we determine their income quartile at the country level. Even after controlling for these factors, being a re-partnered woman continues having a strong positive effect on the likelihood of having a child. As for the newly introduced variables, we find a negative effect of the partner's age and a positive effect of income. The impact of education aligns with that of the woman's education: more educated parents have the highest probability of having a child, followed by those with lower levels of education, while those with medium education are the least likely.

After establishing the positive association between re-partnering and fertility, we turn to understand how the reproductive choices of re-partnered women differ from those who remain with the same partner. If certain interactions are found to be statistically significant, this suggests that observable variables affect the two groups differently. If the "re-partnered" variable itself is significant, it points to unobserved factors influencing the choices of these two groups of women. The results from Model [3] show that the coefficient of "Re-partnered woman" variable is not statistically significant on its own. However, interactions with the number of children, age of the youngest child and fourth income quartile are statistically significant. The number of children already present and

Table 2 Regression models

	Model 1	Model 2	Model 3	Model 4	
	Having a child	Having a child	Having a child	Having a child	Re-partnered
	Coeff (p-value)	Coeff (p-value)	Coeff (p-value)	Coeff (p-value)	Coeff (p-value)
Re-partnered woman (RW)	0,196 (0,000)	0,175 (0,000)	−0,058 (0,950)	−0,423 (0,624)	
Single woman	−0,600 (0,000)				
Number of children	−0,275 (0,000)	−0,268 (0,000)	−0,273 (0,000)	−0,271 (0,000)	−0,049 (0,000)
Number of children*RW			0,187 (0,000)	0,180 (0,000)	
Age of the youngest child	−0,057 (0,000)	−0,049 (0,000)	−0,051 (0,000)	−0,048 (0,000)	0,032 (0,000)
Age of the youngest child*RW			0,059 (0,000)	0,069 (0,000)	
Age of the woman	0,234 (0,000)	0,225 (0,000)	0,221 (0,000)	0,212 (0,000)	−0,070 (0,000)
Age of the woman*RW			−0,027 (0,642)	−0,059 (0,279)	
Age of the woman, squared	−0,005 (0,000)	−0,004 (0,000)	−0,004 (0,000)	−0,004 (0,000)	0,000 (0,226)
Age of the woman, squared*RW			0,000 (0,624)	0,001 (0,339)	
Age of the partner		−0,018 (0,000)	−0,018 (0,000)	−0,018 (0,000)	
Age of the partner*RW			0,001 (0,811)	0,002 (0,746)	
Woman with tertiary education	0,151 (0,000)	0,051 (0,007)	0,049 (0,012)	0,038 (0,049)	−0,173 (0,000)
Woman with tertiary education*RW			0,004 (0,968)	−0,041 (0,670)	
Partner with tertiary education		0,116 (0,000)	0,115 (0,000)	0,115 (0,000)	
Partner with tertiary education*RW			0,011 (0,916)	0,002 (0,983)	
Woman with secondary education	−0,111 (0,000)	−0,133 (0,000)	−0,138 (0,000)	−0,141 (0,000)	−0,103 (0,000)
Woman with secondary education*RW			0,096 (0,240)	0,079 (0,298)	
Partner with secondary education		−0,033 (0,043)	−0,034 (0,041)	−0,032 (0,049)	
Partner with secondary education*RW			0,060 (0,441)	0,060 (0,403)	
Income: second quartile		0,033 (0,060)	0,033 (0,060)	0,036 (0,040)	
Income: second quartile*RW			−0,002 (0,983)	0,003 (0,970)	
Income: third quartile		0,129 (0,000)	0,133 (0,000)	0,135 (0,000)	
Income: third quartile*RW			−0,136 (0,137)	−0,111 (0,187)	
Income: fourth quartile		0,212 (0,000)	0,220 (0,000)	0,223 (0,000)	
Income: fourth quartile*RW			−0,325 (0,002)	−0,282 (0,004)	
Living in a city					0,064 (0,001)
Years of working experience					0,014 (0,000)
Constant	−2,601 (0,000)	−2,014 (0,000)	−1,938 (0,000)	−1,744 (0,000)	−0,077 (0,776)
Rho				0,423 (0,000)	
Observations	113599	100202			

In Model [1], the sample is composed of re-partnered women, women with same partner, single women; only woman and children's characteristics are included (equation [1] in Sect. "Methods"); in Models [2]-[4], the sample is composed of re-partnered women and women with same partner; in Model [2] all control variables are included (equation [2] in Sect. "Methods"); in Model [3] all control variables are included with their interactions with being a "re-partnered woman" (equation [3] in Sect. "Methods"); in Model [4] the fertility equation is defined as in Model [3] but jointly estimated with the

Table 2 (continued)

probability of being a "re-partnered woman" (equations [4] in Sect. "Methods"). Probit models are employed for Models [1]-[3]; bivariate probit for Model [4]

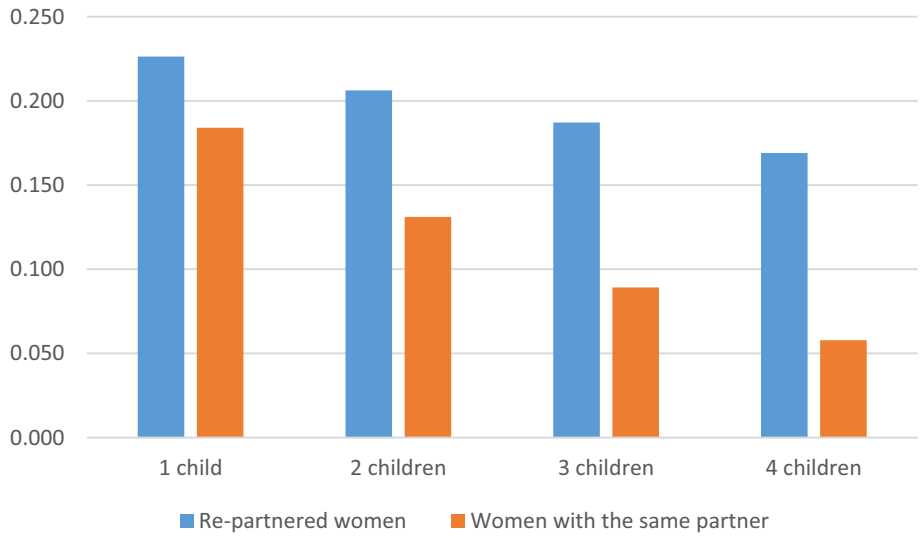

Fig. 1 Probability of having a child, by number of children she already has. Predicted probabilities for a woman with average characteristics, using the estimated coefficients from Model [3], Table 2

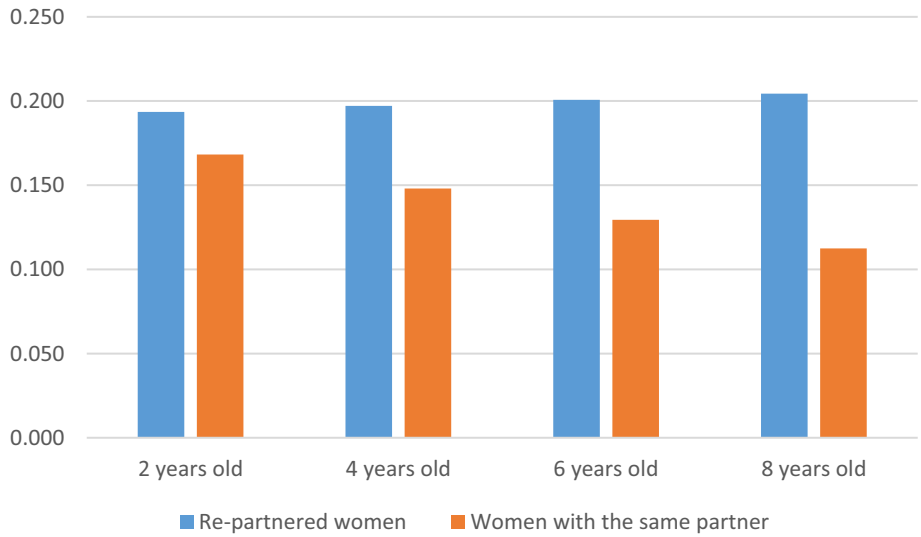

Fig. 2 Probability of having a child, by age of the youngest child. Predicted probabilities for a woman with average characteristics, using the estimated coefficients from Model [3], Table 2

the age of the youngest child have a less negative impact on fertility of re-partnered than of same-partnered women. Even when they already have other—and older—children, re-partnered women are more likely to have another child. Additionally, while income is an important determinant for women with the same partner, it is not for re-partnered women. The greater desire to have children among re-partnered women, as noted in existing literature, is reflected in these different impacts: re-partnered women place less

emphasis on the costs associated with their existing children and attribute less importance to income. Figures 1, 2, 3 visually represent these findings. The first set of bars in Fig. 1 illustrates how the probability of having a child changes for two women (one re-partnered, shown in blue and one with the same partner, shown in orange) as the number of children increases from 1 to 4. The probability of having additional children decreases for both groups, but much more sharply for women with the same partner. Figure 2 shows how the probability of having a child changes with the age of the youngest child. For re-partnered women, this probability remains relatively constant, while it decreases for women with the same partner as the youngest child grows older. From Fig. 3 income emerges as a strong determinant of fertility behaviour for women with the same partner, whose probability of having a child rises by the third income quartile. In contrast, income plays a much less important role for re-partnered women and for wealthier re-partnered women, the probability of having a child is significantly lower. In summary, re-partnered women's decision to have a child is less negatively affected by the presence of more and older children and less positively influenced by income compared to women who remain with the same partner. These factors may help explain similar results found by Thomson et al. (2012).

Consider now Model [4]. As discussed in the methodology section, unobservable characteristics may influence decisions around separation, re-partnering and having children, potentially biasing our estimates. To address this, we use a bivariate probit regression to jointly estimate the probability of having a child and the probability of being re-partnered. While the likelihood of having a child depends on the variables previously discussed, we assume that the probability of being a re-partnered woman is determined by personal characteristics and two additional factors: living in a city and years of work experience. In the equation where being re-partnered is the dependent variable, we find a positive effect of both population density and work experience. As expected, having fewer and older children increases the likelihood of re-partnering as

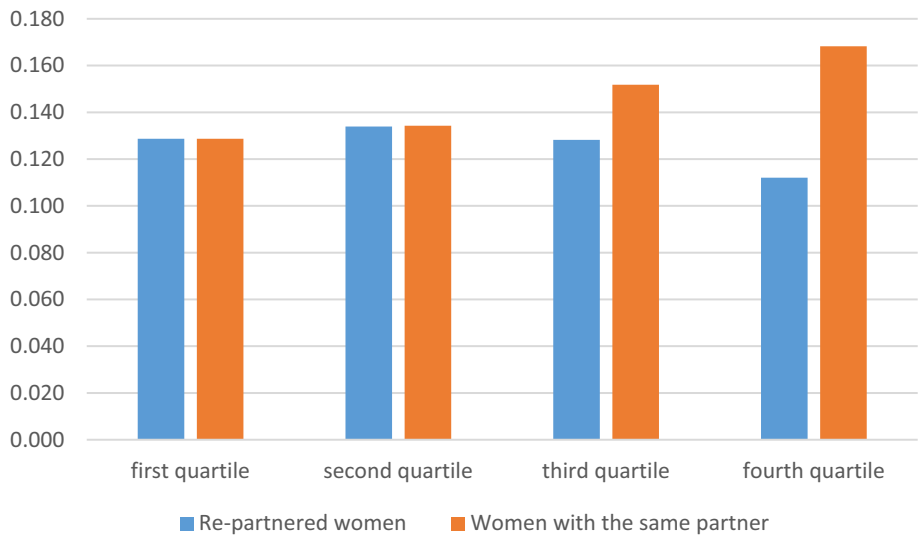

Fig. 3 Probability of having a child, by income quartiles. Predicted probabilities for a woman with average characteristics, using the estimated coefficients from Model [3], Table 2

Table 3 Fertility scenarios

	If she stays with the same partner	If she separates and finds a new partner in 2 years	If she separates and finds a new partner in 3 years	If she separates and finds a new partner in 4 years
Woman 1				
One child; youngest child: 3 years old				
33 years old, secondary education	1,50	1,58	1,46	1,36
Partner three years older, secondary ed				
Income: second quartile				
Woman 2				
As woman 1	2,32	2,50	2,40	2,31
but two children (instead of one)				
Woman 3				
As woman 1				
But the youngest child is 6 (instead of 3)	1,39	1,60	1,48	1,38
Woman 4				
As woman 1				
But both tertiary education (instead of sec)				
Income: fourth quartile (instead of sec)	2,02	1,63	1,51	1,41

Total fertility of different types of women, under different partnership scenarios, predicted using the estimated coefficients from Model [3], Table 2

well as being relatively young. Lower educated women are more likely to find a cohabiting partner. In the equation where fertility is the dependent variable, the main findings hold: significant interactions remain regarding the number and age of children, as well as higher income. Notably, the unobservable factors influencing both decisions (re-partnering and fertility) are strongly and positively correlated, but this correlation does not alter our main results.

We conclude with a simple simulation to illustrate the extent to which fertility lost due to separation can be recovered through re-partnering. Although fertility has been found higher for re-partnered women, these women may have fewer children simply because re-partnering requires time. Consider a 33-year-old woman with a three-year-old child, a partner who is three years older, both having secondary education and a household income in the second quartile. We simulate four scenarios: in the first, she remains with the same partner until the end of her reproductive life; in the second / third / fourth, she separates and finds a new partner after two / three / four years. Simulated fertility is derived from predictions made using estimates from our Model [3].[2] The results are presented in Table 3. Woman 2, 3 and 4 are slight variations of Woman 1, adjusting key variables that we identified as statistically significant. The fertility of re-partnered

[2] For each age of the woman, from 34 to 48, we predict the age-specific fertility rate when she is either with the same partner or re-partnered. We assume that fertility equals zero when the woman is single. Finally, we aggregate these probabilities based on the different trajectories.

women appears highly dependent on the time elapsed between separation and forming a new union. Generally, we find that fertility lost due to separation can be replaced if a new partner is found shortly after separation (within two, three years). The only exception occurs among wealthier couples, where fertility of re-partnered tends to be lower. If re-partnering occurs in or after four years, the lost fertility is not fully recovered. This supports the hypothesis that separations, particularly those followed by long periods of singleness, reduce the total fertility rate. A possible limitation of these simulations is that they are based on the early years of the re-partnered women's relationships. In this sense, the predictions could be overestimated, if we hypothesise that most fertility in re-partnered couples occurs within the initial years of the new relationship.

Discussion and conclusions

The increased "partner turnover" observed in Western societies over the past 50 years serves as the starting point of this study. We wondered whether women's re-partnering behaviour is somehow associated with a higher probability of having further children when compared to women in stable unions. We theoretically base our approach on the "value of children" framework (Friedman et al., 1994): a new childbearing brings emotional and social returns that are functional to cementing the new union, thus increasing the likelihood of higher fertility in re-partnered women than in women who stay with the same partner. The value of children hypothesis is confirmed if the fertility of the re-partnered women is less sensitive to the costs of having (additional) children than that of women in stable unions.

In line with these expectations, our findings show that re-partnered women are more likely to bear additional children than women who remain in the same union. We moved further and show that certain individual's socio-demographic characteristics—that can potentially hinder fertility behaviours—have not the same effect of re-partnered and same-partnered women. In particular, the economic and non-economic costs of an additional child matter less for the fertility of re-partnered women than for those staying with the same partner. This evidence also confirms that the spread of new family forms is not associated with a low value provided to children, as suggested by the Second Demographic Transition, while childbearing still represents a family foundation.

It is important to emphasize that, although differences in fertility between re-partnered and same-partnered women are inherently tied to selection processes in both separation and forming new relationships, our main results remain robust even when accounting for the selection process.

An additional consideration is possible moving from our results. Western countries have been experiencing lowering fertility rates and increasing divorce rates since the 1980s; on the one hand, the second phenomenon may contribute to cause the first if the total fertility of re-partnered women is lower than that of the non-re-partnered. However, we show that, if re-partnering happens in a relatively short time, total fertility of these women may exceed that of the women who remained with the same partner. The fact that, in most traditional societies, re-partnering is still stigmatised, especially when it happens shortly after the dissolution of the previous couple (e.g., Pearce & Thornton, 2007; Meggiolaro & Ongaro, 2008 and Raymo et al., 2024), can either prevent or delay re-partnering, with negative effects on total fertility. Therefore,

from an institutional and social policy perspective, recognizing non-traditional forms of family models and their needs would favour their social acceptance and, indirectly, fostering their fertility. Longer panel data would be useful to confirm this result, which is now limited in its interpretation by the relatively short time-window.

Our study is further limited by the fact that the EU-SILC dataset does not provide information on relatives not living in woman's same household. We, therefore, do not know whether the partner—or the woman itself—has non-co-resident children. Children from a previous union can represent a deterrent for an additional child; on the contrary, for childless individuals, the desire for parenthood might sum with the value-of-children cementing mechanism driving the decision to have a child within the new union.

Our results contribute to the understanding of fertility behaviours in non-traditional families. As the traditional family model based on "indissoluble" union is no longer the dominant one, further studies should explore the effect of contextual factors in hindering or favouring all processes of family formation. This may help policy-makers anticipate and manage the present and future complexity of our society.

Appendix

See Table 4

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Author contributions
The three co-authors participated equally in the development of the paper: in particular, CP developed and wrote the empirical part, while FL and MM worked on the literature and writing the paper. The order of the authors is alphabetical.

Availability of data and materials
The data used (EU SILC) are available, upon request, from the Eurostat website (https://ec.europa.eu/eurostat/microdata/portal/rpp).

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Table 4 Attrition

	At least present in one wave	Present in all 4 waves
Wave 1		
Number of children	1,93	1,93
Age of the youngest child	6,81	6,93
Age of the woman	36,3	36,6
Woman with tertiary education	0,306	0,318
Woman with secondary education	0,473	0,480
Woman with less than secondary education	0,220	0,202
Observations	188086	113599
Probability to participate in all 4 waves		0.601

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