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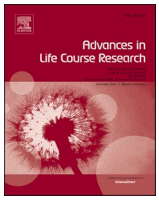

# Relationship quality and family formation in Europe

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ABSTRACT

The increase in cohabitation and nonmarital childbearing across Europe has raised questions about who still marries either before or after having a child. Although prior studies have addressed the sequence of marriage and childbearing, few have examined the role of relationship quality in these transitions. Here we employ a cross-national perspective to study the association between relationship quality and marriage and/or first birth within cohabitation. Using the Generations and Gender Survey and UK Household Longitudinal Study, we study seven European countries (Austria, France, Hungary, Netherlands, Norway, Sweden, and UK). We employ competing risk hazard models to follow respondents as they 1) transition from cohabitation into marriage or conception (or separation); 2) transition to marriage (or separation) after having a birth within cohabitation. Results show that cohabitors with higher relationship quality are more marriage prone than those in lower quality relationships in Austria, France, Hungary, and the UK, but not in the Netherlands, Norway and Sweden. Instead, higher relationship quality is associated with higher conception risks in cohabitation in Sweden. After childbearing, we find a positive association between relationship quality and marriage among cohabiting parents in the Netherlands, Norway, Sweden, and the United Kingdom. These results suggest that marriage is still important for couples with higher quality relationships; however, in countries where cohabitation is widespread, the timing of marriage may have shifted to after childbearing.

## 1. Introduction

Over the last few decades, the destandardization of the life course has led to fundamental changes in partnership formation across Europe. Marriage has declined and cohabitation has become more common, particularly as a way to start co-residential partnerships, but also as a setting for childbearing (Hiekel, Liefbroer, & Poortman, 2014; Perelli-Harris, Kreyenfeld et al., 2012). Yet, these changes have not been uniform across countries (Klüsener, Perelli-Harris, & Sánchez Gassen, 2013). The prevalence of cohabitation and social norms about marriage differ greatly across countries (Heuveline & Timberlake, 2004; Hiekel et al., 2014; Lappegård, Klüsener, & Vignoli, 2018; Perelli-Harris & Sánchez Gassen, 2012; Perelli-Harris, 2018; Perelli-Harris, Kreyenfeld et al., 2012). Although the majority of European couples now start living together without marrying, the rate at which they marry, especially before childbearing, varies substantially (Di Giulio, Impicciatore, & Sironi, 2019; Perelli-Harris et al., 2012). These differences raise questions as to why countries differ in the transition from cohabitation to marriage, or alternatively childbearing.

Although prior research has investigated how cohabitation, and childbearing within cohabitation, differs across countries with respect to education, attitudes, religion, and other socio-economic factors (Hiekel et al., 2014; Knoops, Liefbroer, & Gauthier, 2021; Perelli-Harris et al., 2010, see Sassler & Lichter, 2020 for a review), few studies have focused on the quality of the partner relationship. Relationship quality is a key indicator for understanding a couple's commitment to the partnership, relationship functioning and maintenance, and stability (Le & Agnew, 2003; Le, Dove, Agnew, Korn, & Mutso, 2010; Rusbult, Agnew, & Arriaga, 2012). Prior studies show that, on average, cohabiting couples have lower relationship quality across Europe than married couples (Wiik, Bernhardt, & Noack, 2009; Wiik, Keizer, & Lappegård, 2012). However, cohabitation is a heterogeneous type of relationship, with different meanings and outcomes (Perelli-Harris et al., 2014). Although some studies have found that cohabitors with higher quality relationships are more likely to marry (e.g. in the USA (Brown, 2000) and Sweden (Moors & Bernhardt, 2009), few studies have examined other

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transitions, such as having a child before marriage. Given the increase in childbearing within cohabitation in many parts of Europe, it is important to recognise that having a child is a way of signalling commitment to the relationship (Lillard & Waite, 1993; Perelli-Harris, 2018; Poortman & Mills, 2012), potentially even a larger commitment than marriage (Berrington, Perelli-Harris, & Trevena, 2015; Klärner, 2015; Lappegård & Noack, 2015). Therefore, we investigate whether cohabiting couples with higher relationship quality are more likely to marry, conceive a child, or separate.

Because countries have different trends and patterns of partnership formation, we expect these associations to differ across countries. Here we investigate family transitions in seven countries: Austria, France, Hungary, the Netherlands, Norway, Sweden, and the United Kingdom (UK). Our data comes from the Generations and Gender Surveys and UK Household Longitudinal Study and we selected the countries based on data availability and having sufficient statistical power. These countries represent different welfare states (Anxo, Bosch, & Rubery, 2010), systems of marriage and family law (Perelli-Harris and Sanchez Gassen, 2012) and social norms (Hiekel et al., 2014), which may shape whether more couples with higher relationship quality first marry or have a child. Exploiting the longitudinal design of the surveys, we follow cohabiting respondents as they 1) transition from cohabitation into marriage, pregnancy, or separation, and 2) for unmarried cohabitors who have had children, transition into marriage or separation. We focus on conception instead of births to avoid issues regarding "shot-gun marriages," in which couples marry in response to conception. Although not the focus of the paper, we note that the association between relationship quality and separation may also differ across countries. Taken together, this comparative perspective contributes to our understanding of the meaning of cohabitation or marriage across countries, as the destandardization of the family life course becomes more widespread across societies.

## 2. Theoretical framework

### 2.1. Relationship quality and transitions into marriage

In most Western industrialized countries, marriages have become increasingly deinstitutionalized. The meaning of marriage has shifted from an institutional marriage governed by strict societal norms, to a companionate marriage with clearly defined roles, and currently to an individualized marriage emphasising personal choice and self-development (Cherlin, 2004, 2020). Here the benefits to the individual have become even more important for the continuation and progression of the relationship along greater levels of commitment, for example towards marriage (Cherlin, 2004, 2020). This change may even have led to an increase of the symbolic importance of marriage (Cherlin, 2004), in which marriage may now be an expression of love and commitment, instead of a prerequisite for family formation (Lappegård & Noack, 2015; Perelli-Harris, 2018). Despite the increase in cohabitation, marriage continues to be the dominant relationship form for most adults in mid-life in many European countries, especially for childbearing (Holland, 2017; Perelli-Harris, Kreyenfeld et al., 2012; Vergauwen, Neels, & Wood, 2017). Focus group participants across European countries emphasized that most people marry for love, and marriage signals a stronger commitment to the partnership than cohabitation (Berghammer, Fliegenschnee, & Schmidt, 2014; Berrington et al., 2015; Hiekel & Keizer, 2015; Lappegård & Noack, 2015; Perelli-Harris, 2018). The wedding ceremony, especially, is a way to celebrate the couple's love and demonstrate commitment to friends and family (Berrington et al., 2015; Lappegård & Noack, 2015). In Norway and Sweden, cohabitors who were satisfied with and committed to the union more often planned to marry within two years than less satisfied or committed cohabitors (Wiik, Bernhardt, & Noack, 2010). In this view, for many couples cohabitation is a testing ground for the relationship, with the idea that when couples are happy with the relationship they marry, and if not they break up (Hiekel & Keizer, 2015; Hiekel et al., 2014). Thus, we expect that cohabitors with higher relationship quality are more likely to marry than those in relationships of lower quality.

### 2.2. Relationship quality and transitions to parenthood before marriage

Nonetheless, despite the continued strong emphasis on marriage across Europe, the increase in childbearing within cohabitation raises questions about whether couples with higher relationship quality celebrate their commitment to each other by deciding to have a child instead of marrying (Berrington et al., 2015; Klärner, 2015; Lappegård & Noack, 2015). As marriage becomes more deinstitutionalized, it becomes less of a social requirement for raising children (Cherlin, 2004, 2020). In focus group research, children were often mentioned as signifying a stronger commitment to the relationship than marriage; even if the partnership ends, the partners remain connected via their child (Berrington et al., 2015; Klärner, 2015; Lappegård & Noack, 2015). Therefore, couples may aim to minimize the risk of partnership dissolution by having children only if they have a strong relationship (Lillard & Waite, 1993; Rijken & Liefbroer, 2009; Rijken & Thomson, 2011). For example, Germans who were more satisfied with their relationship were more likely to intend to have a child with their partner (Berninger, Weiß, & Wagner, 2011). Hence, in countries where the diffusion of cohabitation has become more widespread, cohabitors with higher relationship quality could be more likely to progress their relationship by deciding to have a child.

Combining our expectations regarding marriage and conceptions, we hypothesize that among childless cohabiting couples, higher relationship quality is associated with transition to marriage (H1a) or conception (H1b) (no transition and separation are competing risks).

However, some couples with high relationship quality might be wary of what a young child might do to the couple's relationship dynamics. A Dutch study found that women with a medium level of relationship quality were more likely to have a birth than women with low or high relationship quality (Rijken & Thomson, 2011). Furthermore, not all couples discuss having a birth extensively (Rijken, Knijn et al., 2009), some may 'slide' into pregnancy (Sassler & Miller, 2017) which is not always intended (Musick, 2002), and many other factors influence the decision to have a child with the partner, such as the age of the partners and their labour market attachment (Berninger et al., 2011). Therefore, relationship quality might not always be the deciding factor for childbearing.

### 2.3. Relationship quality and transitions to marriage after birth

As cohabitation becomes a normative setting for conception and birth, the sequence of marriage and childbearing may matter less; couples with high relationship quality may happen to have the birth first, and marry afterwards (Buchmann & Kriesi, 2011). The two transitions may have been jointly planned, indicating that the relationship is committed and long-lasting (Musick, 2007; Steele, Kallis, Goldstein, & Joshi, 2005). Researchers have also found that a substantial proportion of couples marry after having children, as a "reinforcement" or "capstone" to their family formation process (Holland, 2013, 2017). Marriage may be deinstitutionalized, but still has symbolic value. This would imply that individuals with higher relationship quality are more likely to marry after having children, as found in studies on expectations to marry (Waller & McLanahan, 2005).

On the other hand, marriages may occur due to social pressure or expectations to marry, regardless of relationship quality (Bernardi & Klärner, 2014; Perelli-Harris, Kreyenfeld et al., 2012). Considering marriage is still the normative setting for childbearing in some countries, parents may choose to marry shortly after the birth to adhere to this ideal (Holland, 2013, 2017). Couples may feel pressure from family and friends to express their commitment with a wedding (Bernardi & Klärner, 2014; Berrington et al., 2015). Cohabiting parents may also

marry to ensure parental rights and ease access to bureaucratic procedures (Perelli-Harris & Sánchez Gassen, 2012). Therefore, parents may decide to marry irrespective of their relationship quality when they are subject to social pressure, especially in countries where childrearing within cohabitation is less accepted. Furthermore, couples who do not marry after a birth may view cohabitation as an alternative to marriage (Steele et al., 2005), especially if they think their relationship is strong and they do not need "a piece of paper" to prove it (Berrington et al., 2015).

Combining our expectations based on the capstone or reinforcement idea of marriage and other pressures to marry among parents, we hypothesise that among cohabiting parents, higher relationship quality is associated with transition to marriage (H2a) or no transition (H2b) (separation is a competing risk).

### 2.4. Variation between countries in cohabitation and marriage

Countries differ in the diffusion of cohabitation and the deinstitutionalization of marriage. In some countries cohabitation is similar to marriage, while in others it is more of a trial or a prelude to marriage (Heuveline & Timberlake, 2004; Hiekel et al., 2014). Social norms differ by country context, varying according to acceptance of cohabitation, childbearing outside of marriage, and attitudes towards marriage (Treas, Lui, & Gubernskaya, 2014). This diffusion influences the relationship stability of cohabitors, as cohabitation is a more stable union type in countries where the union type is widespread (Liefbroer & Dourleijn, 2006). Depending on social context, relationship quality may also be differentially related to the risk of marriage and the risk of a first birth.

Beyond social norms, partnerships are regulated through law. While marriage has become more deinstitutionalized as a social and cultural concept, cohabitation has become more institutionalized as a legal institution, although this varies by country (Perelli-Harris & Sánchez Gassen, 2012). Although cohabitors' rights have expanded in most Western industrialized countries, generally cohabitors continue to have fewer rights and obligations than married couples, especially when no children are involved. For instance, cohabitors may not have to go through the court system when dissolving their unions (Perelli-Harris & Sánchez Gassen, 2012). The latter is sometimes mentioned as a reason not to get married because there is less hassle when dissolving a union (Hiekel & Keizer, 2015). On the other hand, couples may marry to gain legal rights, especially parental rights. Differences in rights and responsibilities between cohabitation and marriage can vary considerably across contexts (Perelli-Harris & Sánchez Gassen, 2012).

### 2.5. Group 1: Countries where cohabitation is less widespread

In the first group of countries (Austria, the UK, the Netherlands, and Hungary), marriage is more common and remains a relatively strong institution (Perelli-Harris, Kreyenfeld et al., 2012). In these countries cohabitation is often a stage in the marriage process instead of a long-term relationship state (Heuveline & Timberlake, 2004; Perelli-Harris, Kreyenfeld et al., 2012). Focus group research in Austria, the Netherlands, and the UK stressed that married couples were perceived to be more committed to the relationship, whereas cohabitation was framed as a way to maintain freedom (Berghammer et al., 2014; Berrington et al., 2015; Hiekel & Keizer, 2015). Austrians mentioned that marriage was important when children were involved (Berghammer et al., 2014), whereas some Dutch and British focus group participants viewed children as a larger commitment than marriage (Berrington et al., 2015; Hiekel & Keizer, 2015; Perelli-Harris, 2018). Nonetheless, more Austrian, Dutch, and British couples marry before having children compared to their French, Norwegian, and Swedish counterparts (Perelli-Harris, Kreyenfeld et al., 2012). Of all births of cohabiting or married couples, 25 % were in cohabiting unions in the Netherlands, 39 % in Austria, and 34 % in the UK (Knoops et al., 2021, see also Eurostat, 2018). Those who have children while cohabiting, are more likely to be economically disadvantaged in the UK, but not in Austria and the Netherlands (Mikolai, Berrington, & Perelli-Harris, 2018; Perelli-Harris et al., 2010). When no children are involved, cohabitors have far fewer rights and obligations than married couples in Austria and especially the UK (Perelli-Harris & Sánchez Gassen, 2012). In the Netherlands very few legal differences exist between married and registered cohabitors, but unregistered cohabitors enjoy far fewer rights and obligations (Perelli-Harris & Sánchez Gassen, 2012).

In Hungary, cohabitation has increased in more recent cohorts (Perelli-Harris, Kreyenfeld et al., 2012), but marriage and early family formation has remained common (Holland, 2017). Whereas cohabitation used to be a short prelude to marriage, recently it has become a more durable stage before marriage (Hoem, Kostova, Jasilioniene, & Mureşan, 2009). Although the country has a strong tradition of marriage, many Hungarian cohabitors did not have a favourable view of marriage despite plans to marry (Hiekel et al., 2014). Nonetheless, even those who disliked marriage still planned to get married, dubbed 'conformists' (Hiekel et al., 2014). Marriage is generally the context for childbearing (Mikolai, 2012; Perelli-Harris, Kreyenfeld et al., 2012), where 16 % of births of couples where within cohabiting union (Knoops et al., 2021, see also Eurostat, 2018). Also, Hungarian cohabitors have fewer rights and obligations than married couples (Szeibert, 2015).

Based on these contextual factors, we expect that in Austria, Hungary, the Netherlands, and the UK, childless cohabitors with higher relationship quality are more likely to marry than those in relationships of lower quality (relative to conceiving a child, separating, or not making a transition), thus we expect hypothesis H1a to be applicable in these contexts. If couples do have children while cohabiting, parents may decide to marry at a later stage, especially those with higher relationship quality. Therefore, we expect that cohabiting parents with higher relationship quality in Austria, Hungary, the Netherlands, and the UK will be more likely to marry than those in relationships of lower quality (relative to separating, or not making any transition), in line with hypothesis H2a.

### 2.6. Group 2: Countries with widespread cohabitation

In the second group of countries (France, Norway, and Sweden), cohabitation is widespread and marriage has largely been deinstitutionalized. In Norway and Sweden, cohabiting unions have been considered indistinguishable from marriage (Heuveline & Timberlake, 2004). More than nine in ten first unions start with cohabitation (Noack, Bernhardt, & Wiik, 2014; Wiik, 2022), and the majority of first births are within cohabitation (Perelli-Harris, Kreyenfeld et al., 2012); about 58 % and 61 % for Norway and Sweden respectively of all births within couples were within cohabitation (Knoops et al., 2021, see also Eurostat, 2018). Marriage has been considered a 'capstone' of the relationship, where people often marry after they have finished their reproductive career (Holland, 2013, 2017; Lappegård & Noack, 2015). In Sweden, there was a 'marriage revival' with rising marriage rates among 30- to 50-year-olds after 2000 (Ohlsson-Wijk, 2011). About half of the cohabiting couples in a Norwegian survey were classified as refusing marriage or seeing it as irrelevant; however, slightly less than half were in unions similar to a precursor to marriage or a trial marriage (Hiekel et al., 2014). Nonetheless, even in these countries, married people have on average higher relationship quality than cohabitors (Wiik et al., 2009). Cohabitors have many similar rights and obligations to married couples in Norway and Sweden, although some differences remain, especially with regards to inheritance (Perelli-Harris & Sánchez Gassen, 2012). Given that marriage provides fewer legal benefits compared to cohabitation, especially for parents, couples may have fewer incentives to marry before a first birth (Hiekel & Keizer, 2015; Perelli-Harris & Sánchez Gassen, 2012).

As in the Scandinavian countries, cohabitation in France is common and seen as an alternative to marriage (Heuveline & Timberlake, 2004).

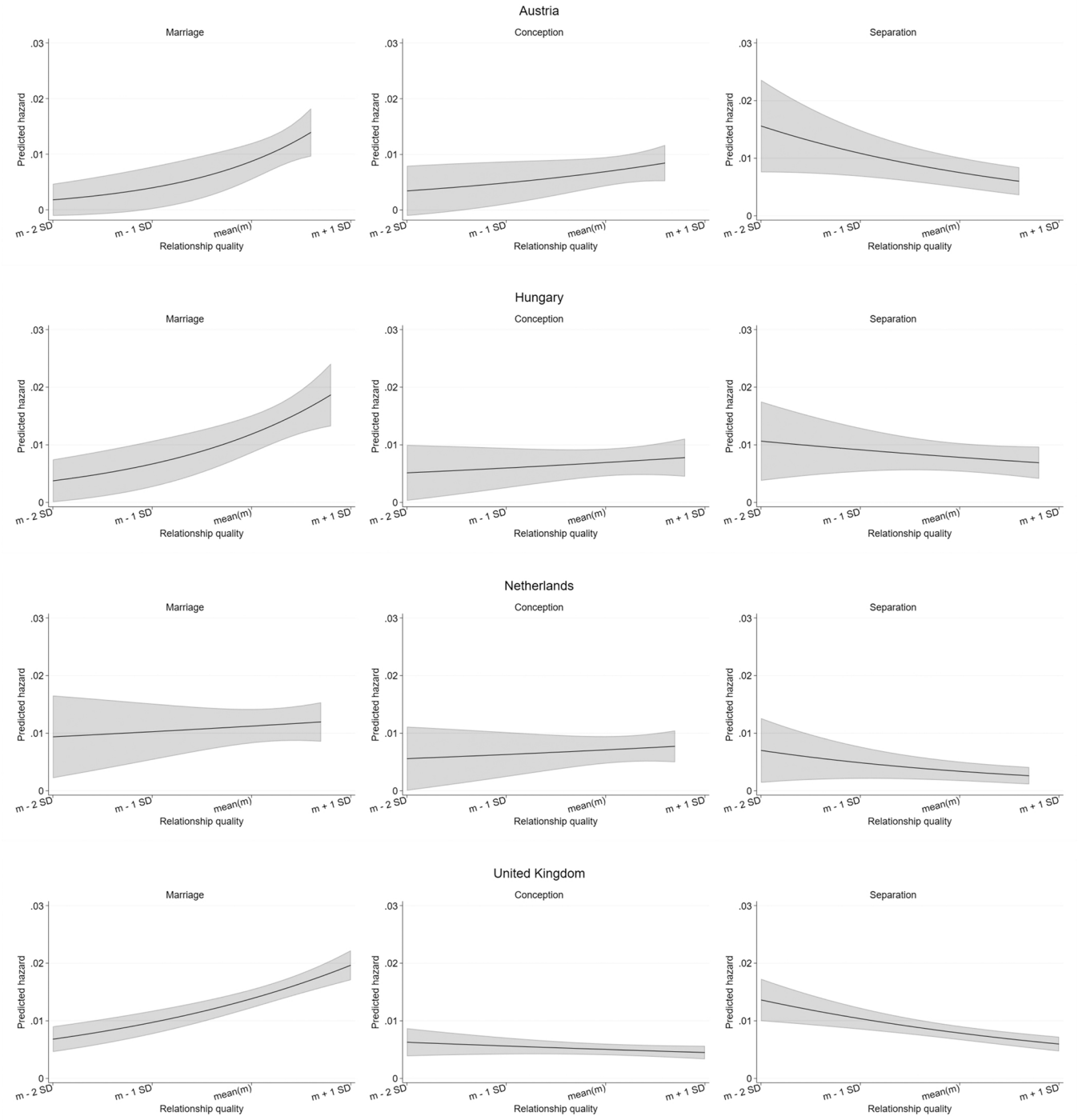


**Fig. 1.** Analysis 1, transitions from childless cohabitation to marriage, non-marital conception, and separation for countries where cohabitation is slightly less normative. Marginal effects at the means, competing risk hazard models per country (see Appendix Table A1 and A2).

The majority of couples begin their co-residential unions without marrying (Perelli-Harris, Kreyenfeld et al., 2012), and 46 % of all births within couples occurred in cohabitation (Eurostat, 2018), especially among the lower educated (Mikolai et al., 2018; Perelli-Harris et al., 2010). Similar to Nordic cohabitors, many French cohabitors were classified as being in a prelude or trial marriage (Di Giulio et al., 2019), but more French cohabitors thought marriage was still relevant compared to Norwegian cohabitors (Hiekel et al., 2014). Furthermore, cohabitors in France tended to have lower quality relationships than their married counterparts (Wiik et al., 2012). In France, registered cohabitation (PACS) has become more popular, and PACS partners have very similar rights and obligations as married couples, but PACs are not able to inherit in the same way as married couples (Perelli-Harris & Sánchez Gassen, 2012).

Based on these contextual factors, we expect that childless cohabitors with higher relationship quality in France, Norway, and Sweden are more likely to conceiving a child than those in relationships of lower quality (relative to marrying, separating, or not making a transition), thus accordance with hypothesis H1b. For cohabiting parents, we have no specific expectation regarding the association between relationship quality and marriage in these countries. On the one hand, after couples have a birth outside of marriage, we would expect couples with higher

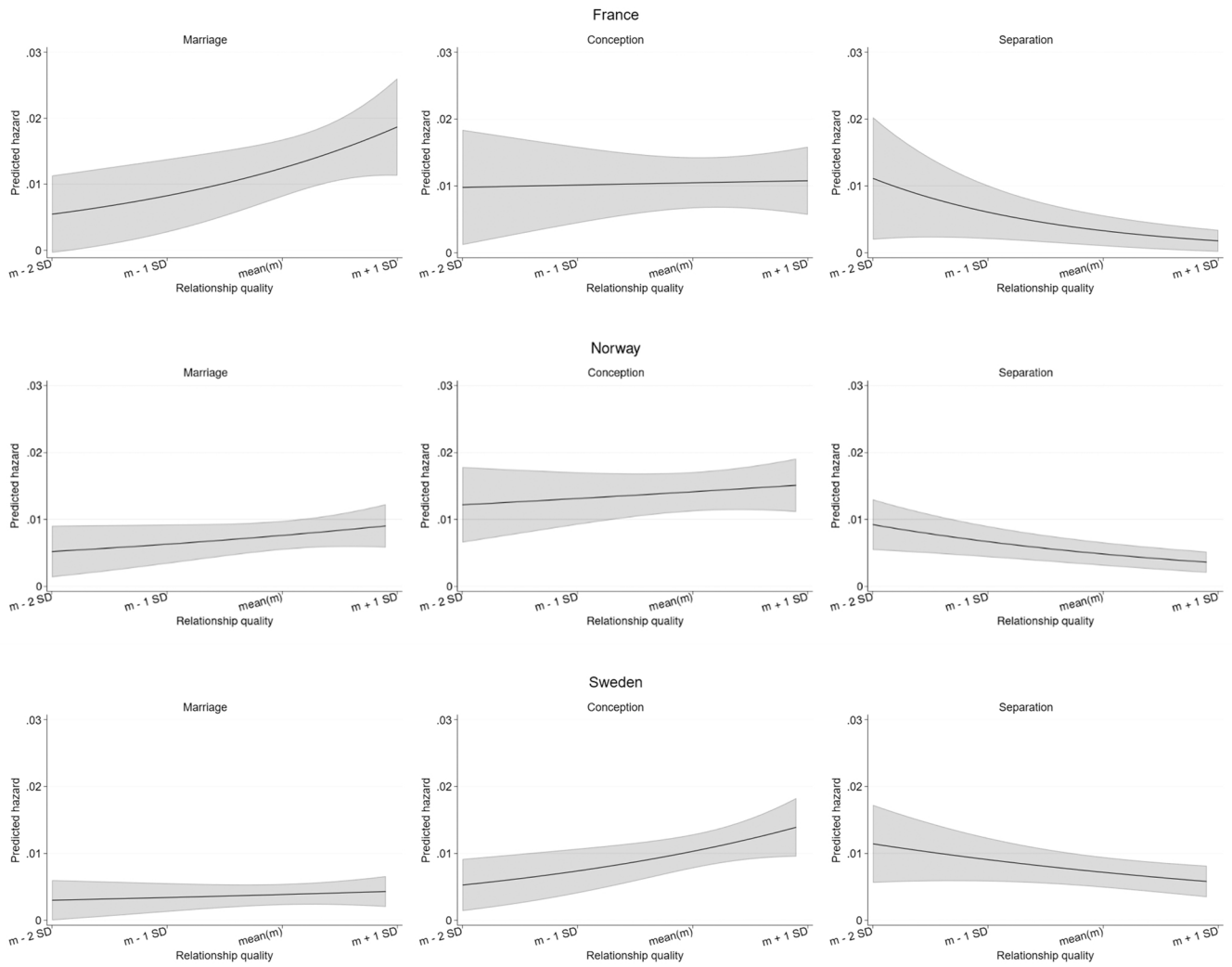


**Fig. 2.** Analysis 1, transitions from childless cohabitation to marriage, non-marital conception, and separation for countries where cohabitation is more normative. Marginal effects at the means, competing risk hazard models per country (see Appendix Table A1 and A2).

relationship quality to marry (in line with the idea of a 'capstone' marriage and hypothesis H2a). On the other hand, if couples view cohabitation as an alternative to marriage, they may forgo marrying altogether (in accordance with hypothesis H2b).

## 3. Data and method

To investigate the association between relationship quality and family transitions, we employed the Generations and Gender Surveys (GGS) and the British Understanding Society survey (also known as the UK Household Longitudinal Study or UKHLS). The GGSs (www.ggp-i.org) were comprised of nationally representative samples of people aged 18–79 (18–45 for Austria) in 17 countries. Here, we selected six: Austria, France, Hungary, Netherlands, Norway and Sweden. The other countries either did not include necessary measurements or sample sizes were insufficient to study family transitions (see methods and measurement sections). The first surveys were held in Austria in 2008/2009, France in 2005, Hungary in 2004/2005, Netherlands in 2002/2004, Norway in 2007/2008, and Sweden 2012/2013. Second waves were collected about three to four years after the original interviews and two countries were followed up using register data (Norway and Sweden). We study the relationship transitions between waves 1 and 2 for the countries that have two waves (lowest average number of months between waves is 36 months for France, highest is 48 months for Austria and Hungary), and for up to 50 months after the survey was taken for those that have register data.

The UKHLS (www.understandingsociety.ac.uk) is a UK nationally representative household-based longitudinal survey (University of Essex: Institute for Economic & Social Research, 2019) which began in 2009. Later waves were collected annually for a total of 11 waves. The UKHLS started with approximately 40,000 households (51,000 individuals). We studied respondents from the first waves they were asked about their relationship quality (waves 1, 3, and 5) and followed them for a maximum of 50 months after the first interview they answered relationship quality questions. Using the relationship histories file (University of Essex: Institute for Social & Research, NatCen Social Research, & Kantar Public, 2019) and information on the children born in between waves, we study which transitions (marriage, conception, separation) happen.

We selected men and women in different-sex relationships who answered the relationship quality questions. To test our hypotheses, we studied two samples for each country. With the first sample, we investigated how relationship quality was associated with the risk of marriage or having a first birth within cohabitation (hypotheses H1a and H1b), focusing on cohabiting respondents aged 45 or younger who had not experienced a first birth and who had been living together for five years or less at time of the interview. We selected people who lived together for five years or less because the majority make the transition to

marriage or first birth within this period, and people who have not made this transition are increasingly selective the longer the observation period. Note that of the group of unmarried, childless cohabitors, between 66 (Austria) and 83 (France) percent was living together for 5 years or less.

To study transitions from these cohabiting unions, we used monthly data and competing risk hazard models, also known as discrete time event history models using multinomial logistic regression. Respondents were followed from the month of first interview to the month of marriage[1] (1), conception (2), separation (3) or censoring. Remaining cohabiting was the base category in these models. Conception was calculated by backdating births with nine months. Also, note that we control for the relationship duration prior to the first interview. Conclusions were similar when we selected people who lived together for three years or less, and results became weaker when no selection on relationship duration before wave 1 was made, probably because couples who have lived together for longer, but have not made a transition to marriage or parenthood, are increasingly selective. People were censored when they turned 46 years old, after 50 months after the initial interview, or when they completed the second interview.

Second, we examined the transition to marriage for cohabitors who had already had a child together (hypotheses H2a and H2b). These samples were comprised of unmarried people who had children and were aged 45 or younger. Here we did not select on relationship duration prior to the initial interview but controlled for this factor. Selecting only parents whose youngest child was under 5 years old led to the same conclusions. In both sets of analyses, the duration dependence was time since interview in months, when relationship quality was measured. If the date of marriage, birth, or separation was missing, this date was randomly imputed while taking into account other relationship transitions. People were censored when they turned 46 years old, after 50 months after the initial interview, or when they completed the second interview. Again, we used discrete time event history models and analysed the risk of marriage (1) or separation (2) versus remaining cohabiting (base category). Given the nominal outcome, we again applied multinomial regression models on the person-month data.

The results of both sets of analyses are presented using marginal effects at the means in Figs. 1–4 where the predicted monthly hazard for the outcomes are shown from the mean relationship quality minus two standard deviations (SD) up to the mean plus one standard deviation[ii]. This roughly equates to a range of 5.9–10 out of 10 (with a mean of 8.8) on the relationship satisfaction scale that is used by five of the countries, covering about 90 % of the sample. All model estimates are presented in Appendix Table A1 and A3. We tested the difference in predicted monthly hazard for various points in the figures; the p-values are presented in Appendix tables A2 and A4. For each country, we estimated whether the difference in predicted marriage hazard for average relationship quality was significantly different from that predicted at mean relationship quality, minus two SD, minus 1 SD, and plus one SD.[2] Furthermore, we estimated for Analysis 1 whether the difference in predicted marriage hazard and predicted conception hazard was significant. We do not estimate the difference between predicted separation risk and the other outcomes, as separation is not the focus of this study.

### 3.1. Measurements

*Relationship quality* is our main explanatory variable. Relationship quality is a multidimensional concept encompassing positive and negative relationship evaluations, which have been measured in different ways (Di Giulio, Impicciatore, & Sironi, 2019; Funk & Rogge, 2007). Here, most countries measured general relationship satisfaction on a scale from 0 ("not at all") to 10 ("completely"). Dutch couples were asked to what extent they agree with the statement "we have a good relationship" on a reversed scale from 1 ("strongly agree") to 5 ("strongly disagree"). In the UK, relationship quality was asked as relationship happiness, on a scale of 1 ("extremely unhappy") to 7 ("perfect"). To allow comparison across the different countries, we standardized relationship quality per country based on the samples of partnered respondents aged 45 years or less, before any further selections were made. This was done by subtracting the sample mean from the value and dividing the new score by the standard deviation. Although a more extensive measurement might capture different dimensions of relationship quality, the single item measurement has been frequently used in the demographic and sociological literatures (e.g. Boertien & Härkönen, 2018; Brown, Manning, & Payne, 2017; Wiik et al., 2012). Descriptive statistics for all variables are presented in Table 1.

In the second set of analyses focusing on unmarried parents, we specified the *number of children* people had to control for different marriage rates over the fertility career (Holland, 2017). This measurement was time varying and updated if the respondent experienced a new birth. Controlling for age of the youngest child instead of number of children in additional analyses led to the same conclusions.

*Gender* was included since the association between relationship quality and family transitions might be gender specific (Brown, 2000). The association between relationship quality and family transitions were similar for men and women (results available upon request). *Previous relationship experience* was defined as whether or not the respondent lived with a partner previously before living with the current partner. *Relationship duration* in months before first wave was included because (for some) it is associated with relationship quality and family transitions. Finally, *age* at time of the interview and *month since first wave* were included. Including a quadratic term for either variable led to the same conclusions.

We control for only a few variables due to insufficient sample size in most countries and the risk of over specifying the analyses. In additional analyses we controlled for education (high or other) (available upon request). Including this variable led to the same conclusions.

## 4. Results

### 4.1. Marriage or childbearing within cohabitation

Descriptive statistics for the country samples are presented in Table 1, confirming some important differences across countries. First, looking at the sample of cohabiting childless respondents, we note that higher shares of French (27 %), Swedish (28 %) and especially Norwegian (37 %) respondents experienced a first birth within our follow-up timeframe compared with respondents from other countries. The share of childless couples who married during the follow-up period, on the other hand, was highest in Hungary (36 %), followed by the UK (33 %), France (33 %), the Netherlands (31 %), and Austria (29 %). Separation in the follow-up period was most prevalent in Sweden (24 %), Austria (22 %), and Hungary (22 %), followed by Norway (14 %), France (11 %), and the Netherlands (10 %).

Next, we investigated how relationship quality was associated with marriage or having a first birth within cohabitation for the first group of countries where cohabitation is less normative (Fig. 1 Group 1: Austria, Hungary, the Netherlands, and the UK) (see Appendix Table 1 for the full models). For these countries, we expected that higher relationship quality was associated with higher marriage risks, not with higher conception risks (H1a). Fig. 1 plots the marginal effects at the means based on competing risk hazard models, where the left side panels show

[1] For France, PACS are considered as a transition to marriage. Analysing the transition to PACS separate from transition to marriage revealed similar associations between relationship quality and these transitions.

[2] For Norway, Sweden, Austria, the Netherlands, and Hungary the upper limit of relationship quality was used as the maximum because the upper limit of relationship quality was slightly lower than the mean of relationship quality + 1 SD.

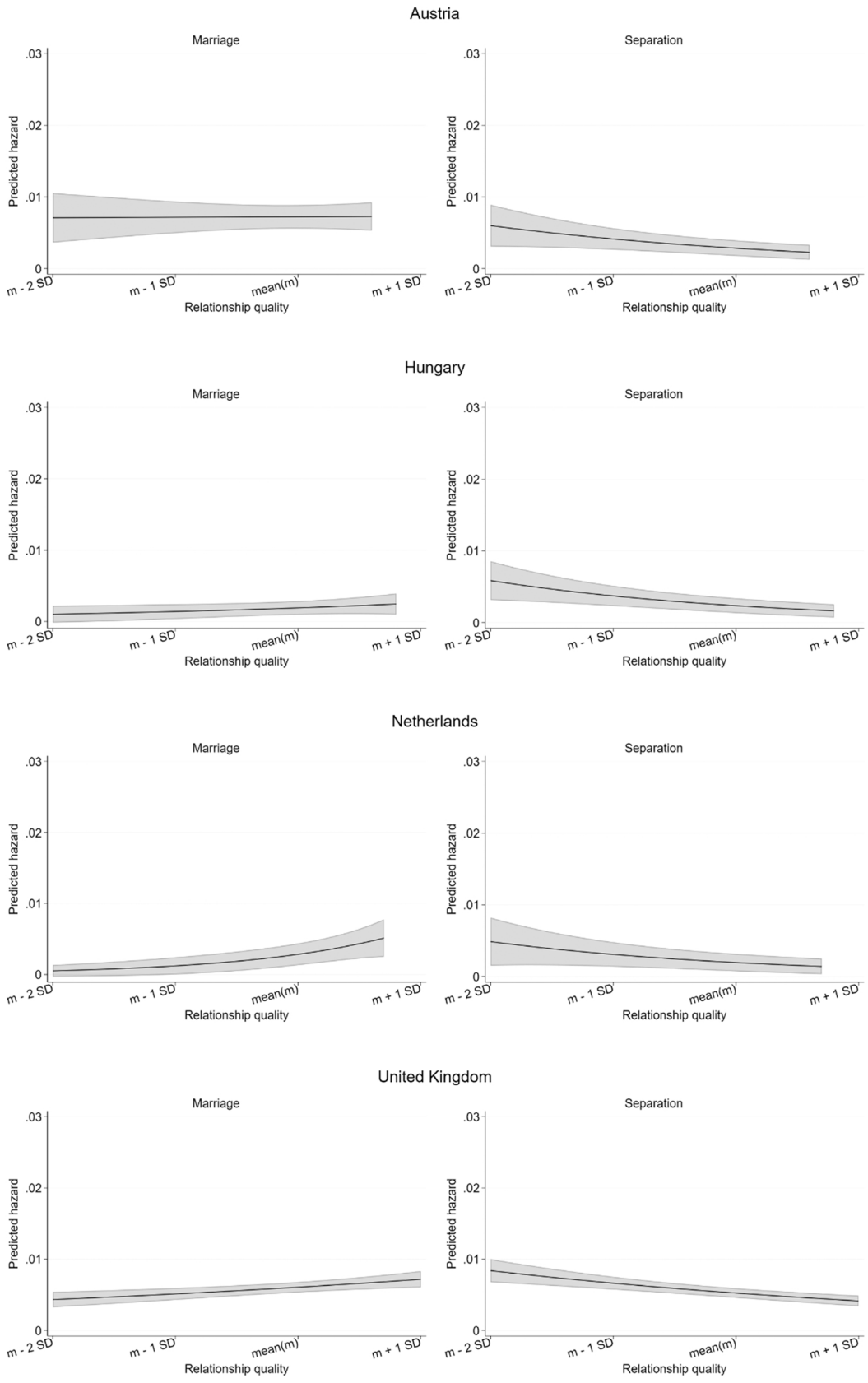


**Fig. 3.** Analysis 2, transitions from cohabitation of parents to marriage and separation, for countries where cohabitation is slightly less normative. Marginal effects at the means, competing risk hazard models per country (see Appendix table A2 and A4).

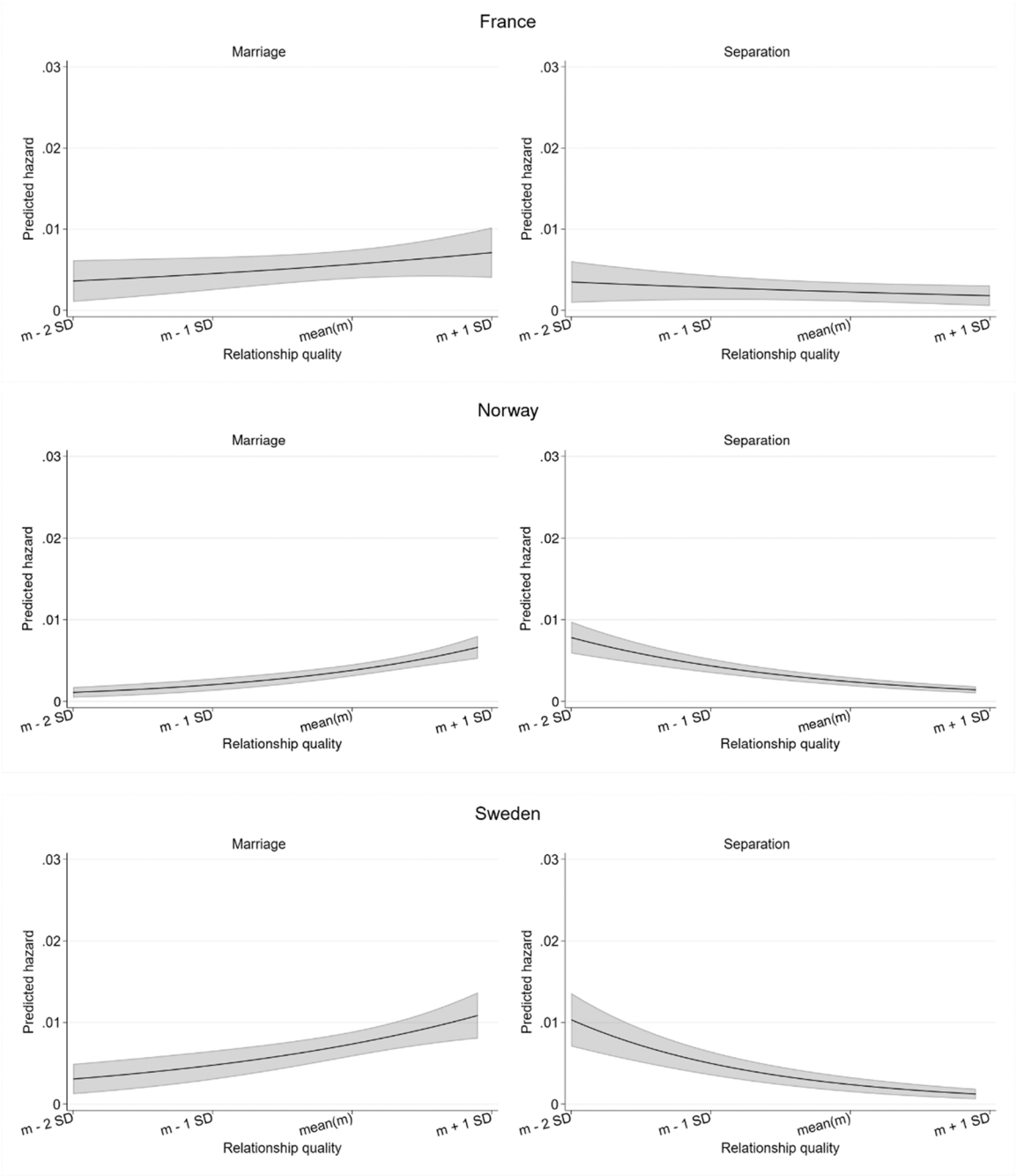


**Fig. 4.** Analysis 2, transitions from cohabitation of parents to marriage and separation, for countries where cohabitation is more normative. Marginal effects at the means, competing risk hazard models per country (see Appendix table A2 and A4).

marriage hazards, the middle panels show the conception hazards, and the right side show separation hazards. For Austria, Hungary, and the UK, the predicted marriage risk rises when relationship quality rises (as shown in the panels on the left side of Fig. 1). The marginal effects show that in these three countries cohabitors without children with the highest relationship quality have a significantly higher marriage risk than those with average relationship quality, who in turn have a significantly higher marriage risk than those with relationship quality one or two standard deviations below the mean (see also Appendix Table A2 for the significance level). This is not found for the Netherlands; the relatively flat line indicates that marriage risk in the Netherlands is not dependent on couples' relationship quality. Note however, that while relationship quality was not significantly related to marriage risks, marriage risks were significantly higher than conception risks for Dutch couples with average or higher relationship quality.

The middle panels of Fig. 1 show that although the predicted monthly hazard for conception risk may increase slightly based on relationship quality, this rise is not significant in any of the countries (see also Appendix Table A1 for the regression coefficients and the test of the differences between various points in Fig. 1 in Appendix Table A2). Additionally, Fig. 1 indicates that in all countries in this group, the highest quality cohabitors have a higher marriage than conception risk while these risks are the same among the lowest quality relationships (see Appendix Table A2). Finally, as depicted by the panels on the right side of Fig. 1, higher relationship quality is associated with lower separation risks in Austria, the Netherlands, and the UK, but not in Hungary. Overall, our findings largely support our expectations, namely that higher relationship quality was associated with higher marriage

**Table 1**
Percentages, means, and standard deviations for transitions and independent variables by country.

| | Analyses 1: Childless cohabiting couples | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Country group 1 | | | | | | | | Country group 2 | | | | | |
| | Austria | | Hungary | | Netherlands | | United Kingdom | | France | | Norway | | Sweden | |
| | %/M | SD | %/M | SD | %/M | SD | %/M | SD | %/M | SD | %/M | SD | %/M | SD |
| *Transition* | | | | | | | | | | | | | | |
| No transition | 28.4 | | 22.5 | | 37.6 | | 35.8 | | 29.8 | | 28.7 | | 37.4 | |
| Marriage | 29.0 | | 36.0 | | 31.2 | | 33.2 | | 32.6 | | 20.0 | | 11.1 | |
| Conception | 20.8 | | 20.0 | | 21.0 | | 12.4 | | 27.0 | | 37.1 | | 27.9 | |
| Separation | 21.9 | | 21.5 | | 10.2 | | 18.5 | | 10.6 | | 14.2 | | 23.7 | |
| Relationship Quality | 0.1 | 0.8 | 0.2 | 0.8 | 0.2 | 0.9 | 0.1 | 1.0 | 0.2 | 0.9 | 0.1 | 1.0 | 0.0 | 0.9 |
| *Gender* | | | | | | | | | | | | | | |
| Male | 41.5 | | 40.5 | | 40.5 | | 45.8 | | 29.8 | | 47.4 | | 42.4 | |
| Female | 58.5 | | 59.5 | | 59.5 | | 54.2 | | 70.2 | | 52.6 | | 57.6 | |
| *Age* | 28.0 | 5.0 | 27.1 | 3.8 | 29.3 | 4.9 | 28.2 | 5.9 | 26.8 | 4.6 | 30 | 6.3 | 26.6 | 4.9 |
| *Relationship history* | | | | | | | | | | | | | | |
| No previous relationship | 68.9 | | 86.5 | | 77.6 | | 70.5 | | 75.9 | | 53.9 | | 70.2 | |
| Had previous Relationship | 31.2 | | 13.5 | | 22.4 | | 29.5 | | 24.1 | | 46.1 | | 29.8 | |
| Relationship duration before wave (yrs) | 2.3 | 1.4 | 1.8 | 1.2 | 2.4 | 1.3 | 1.8 | 1.4 | 2.3 | 1.5 | 2.3 | 1.5 | 1.9 | 1.4 |
| Time to event or censoring in months | 26 | 17.4 | 25.8 | 16.4 | 26.6 | 15.4 | 21.7 | 15.6 | 22.2 | 12.3 | 22.2 | 16.5 | 25.3 | 15.6 |
| Number of respondents | 183 | | 200 | | 205 | | 1065 | | 141 | | 310 | | 262 | |
| Number of observations | 4750 | | 5161 | | 5445 | | 23,107 | | 3133 | | 7153 | | 6617 | |
| | Analyses 2: Cohabiting parents | | | | | | | | | | | | | |
| | Country group 1 | | | | | | | | Country group 2 | | | | | |
| | Austria | | Hungary | | Netherlands | | United Kingdom | | France | | Norway | | Sweden | |
| | %/M | SD | %/M | SD | %/M | SD | %/M | SD | %/M | SD | %/M | SD | %/M | SD |
| *Transition* | | | | | | | | | | | | | | |
| No transition | 60.8 | | 77.6 | | 75.6 | | 61.7 | | 73.1 | | 67.6 | | 63.9 | |
| Marriage | 26.5 | | 9.4 | | 13.3 | | 20.1 | | 18.0 | | 20.4 | | 23.9 | |
| Separation | 12.6 | | 13.1 | | 11.1 | | 18.2 | | 9.0 | | 12.0 | | 12.2 | |
| Relationship Quality | -0.1 | 1.1 | -0.2 | 1.2 | -0.2 | 1.1 | -0.1 | 1.1 | -0.2 | 1.0 | 0.0 | 1.0 | -0.2 | 1.1 |
| *Gender* | | | | | | | | | | | | | | |
| Male | 34.0 | | 46.9 | | 30.6 | | 39.9 | | 36.7 | | 46.0 | | 38.4 | |
| Female | 66.0 | | 53.1 | | 69.4 | | 60.1 | | 63.3 | | 54.0 | | 61.6 | |
| *Age* | 33.7 | 6.0 | 32.4 | 6.2 | 35.6 | 5.6 | 33.2 | 7.0 | 35.0 | 5.9 | 34.8 | 5.5 | 36.3 | 5.6 |
| Number of children [a] | 1.7 | 0.7 | 2.0 | 1.1 | 1.9 | 0.7 | 2.0 | 1.0 | 2.0 | 0.8 | 1.9 | 0.7 | 2.1 | 0.8 |
| *Relationship history* | | | | | | | | | | | | | | |
| No previous relationship | 62.8 | | 62.9 | | 62.2 | | 51.1 | | 68.4 | | 63.3 | | 52.4 | |
| Had previous Relationship | 37.2 | | 37.1 | | 37.8 | | 48.9 | | 31.6 | | 36.7 | | 47.6 | |
| Relationship duration before wave (yrs) | 7.8 | 5.2 | 7.6 | 5.2 | 7.7 | 4.9 | 6.2 | 5.7 | 9.1 | 5.8 | 9.5 | 5.3 | 8.9 | 6.0 |
| Time to event or censoring in months | 35.1 | 15.8 | 40.2 | 12.9 | 35.2 | 12.1 | 29.4 | 17.2 | 29.7 | 10.6 | 38.2 | 13.4 | 30.4 | 14.7 |
| Number of respondents | 309 | | 245 | | 180 | | 1694 | | 256 | | 908 | | 443 | |
| Number of observations | 10,843 | | 9855 | | 6328 | | 49,821 | | 7596 | | 35,628 | | 13,458 | |

Source: Generations and Gender surveys and UK Household Longitudinal Study. [a] number of children is time-varying, descriptives refer to final observation.

risks (H1a) but not with higher conception risks (thus not H1b) in these countries. However, in the Netherlands marriage risks did not depend on relationship quality, which does not confirm either hypothesis, even though marriage risks were higher than conception risks among higher quality relationships.

In the second group of countries where cohabitation is more widespread (Group 2: France, Norway, and Sweden), we expected that relationship quality was associated with conception risk (H1b), but not with marriage risk (H1a). Fig. 2 shows mixed findings (see Appendix Table 1 for the full models, and Appendix Table A2 for tests of the difference between various point in Fig. 2). Regarding marriage risks (the left panels), the results indicate that for France, relationship quality is associated with a higher marriage risk, where those who have average relationship quality have a higher marriage risk than those with lower relationship quality. For Norway and Sweden, on the other hand, the relatively flat lines in the left panels indicate that relationship quality was not significantly associated with marriage risks.

Regarding conception risks, our findings indicate that higher quality Swedish cohabitors have a higher risk of conception, as indicated by the middle panels in Fig. 2 (as well as by Appendix Table A1 and A2). Couples with the highest relationship quality have a higher conception risk than those with average relationship quality, who in turn have a higher conception risk than those with relationship quality one or two standard deviations below the mean. This was not found for Norway or France. Importantly, however, in Norway as well as Sweden all but the lowest quality relationships had a higher conception risk than marriage risk. The highest quality French cohabitors had a marginally significant ($p < .1$) higher marriage than conception risk, but not the couples with lower quality relationships. Lastly, regarding separation, our results indicate that cohabitors with higher quality relationships have a lower separation risk in all three countries, as indicated by the panels on the right side of Fig. 2.

Overall, we find mixed support for our expectations regarding childless cohabitors. While higher relationship quality was associated with higher conception risk (H1b) but not higher marriage risks (not H1a) in Sweden, this was not the case in Norway or France. In Norway, we found that cohabitors had higher conception risks regardless of relationship quality, indicating lack of support for H1a and H1b. In France, we unexpectedly found that higher quality cohabiting couples were more likely to marry (in line with H1a), similar to Hungary, the UK, and Austria.

### 4.2. *Marriage among unmarried parents*

Next, we studied whether relationship quality was associated with marriage among cohabiting parents, testing Hypothesis 2. Descriptive statistics for the samples of cohabiting parents are presented in Table 1 (sample 2). Austrian parents were most likely to marry before the end of the observation period (27 %), followed by Swedish (24 %), Norwegian (20 %), British (20 %), and French unmarried parents (18 %). Hungarian parents married least often (9 %). Furthermore, around 10 % of the parents separated in most countries, but this was notably higher in the

UK at 18 %.

Starting with the group of countries where cohabitation is slightly less normative (Group 1: Austria, Hungary, the Netherlands, and the UK), here we expected that cohabitors with higher relationship quality were more likely to marry (H2a). The panels on the left side of Fig. 3 show that relationship quality has different associations with marriage among cohabiting parents across these countries (see also Appendix Tables A3 and A4). Dutch and British cohabiting parents with the highest relationship quality have higher marriage risks than those of average relationship quality, who themselves have higher marriage risks than those in lower quality relationships. However, this is not the case for Austrian and Hungarian cohabiting parents whose marriage transitions are not significantly associated with relationship quality. Thus, we have found mixed support for H2a among countries where cohabitation is slightly less normative. Furthermore, in all these countries, cohabiting parents had a lower separation risk (as indicated by the right panels in Fig. 3), the higher their relationship quality.

Next, for the countries where cohabitation is more normative (Group 2: France, Norway, and Sweden), we had no specific expectation as to whether relationship quality would be associated with marriage among cohabiting parents. Fig. 4 (and Appendix Tables A3 and A4) shows that Norwegian and Swedish cohabiting parents have a higher marriage risk the higher their relationship quality (as shown by the panel on the right side); the highest quality Norwegian and Swedish couples had a higher marriage risk than those of average quality who themselves had a higher marriage risk than those of lower quality. However, this was not the case among French cohabiting parents; higher relationship quality was not significantly associated with increased marriage risk among this group, even though the marriage line appears to be sloping upwards. Thus, we found support for H2a in Sweden and Norway, but not for France. Separation was also less likely the higher the relationship quality in Sweden and Norway, while this association was not found in France.

## 5. Conclusion and discussion

In nearly every European country, the life course has changed over the past few decades, especially with respect to family and partnership formation. Cohabitation has become the main route into co-residential partnerships, and childbearing within cohabitation has increased (Di Giulio et al., 2019; Klüsener, 2015; Perelli-Harris et al., 2012). These new trends raise questions about who continued to marry before having children or married afterwards as a “capstone” to the relationship (Holland, 2013, 2017). Here we studied how country context shaped the progression to marriage or conception among cohabiting couples by focusing on relationship quality. Given that countries vary in the extent to which marriage has become deinstitutionalized and/or has taken on a more symbolic meaning (Cherlin, 2004, 2020), the association between relationship quality and family formation may differ depending on country context. Note that although there are differences between the two groups of countries, there are also substantial differences within each group. We found that in all seven countries (Austria, France, Hungary, the Netherlands, Norway, Sweden, and the UK) higher relationship quality was associated with getting married, indicating the continued importance of marriage for family formation across Europe. However, sometimes relationship quality was associated with marriage before childbearing and sometimes afterwards, and the timing of marriage depends on country context.

In countries where cohabitation was less widespread (Group 1: Austria, Hungary, the Netherlands, and the UK), we expected that cohabitors who reported higher quality relationships would be more inclined to marry rather than have a first conception in cohabitation (H1a). Of those who did have a birth outside of marriage, we expected that higher quality relationships would be more inclined to marry as well (H2a). However, only in the UK was higher relationship quality associated with higher marriage risk both before and after the transition to parenthood. In the UK, the symbolic meaning of marriage thus seemed important regardless of when it happens in the life course (Perelli-Harris & Blom, 2021). Austrian and Hungarian cohabitors with higher relationship quality were also more likely to marry before the transition to parenthood than their counterparts with lower quality relationships. After the transition to parenthood, however, the quality of the relationship was not related to marriage risk. During focus group discussions in Austria, participants spoke of cohabitation as something to do early in the life course, while marriage was for later, when couples settled down and became responsible (Berghammer et al., 2014). If only the happiest couples in Austria married before having children, marriage afterwards seemed more normative, and potentially due to social pressure or to ease access to bureaucratic procedures (Perelli-Harris & Sánchez Gassen, 2012). In Hungary, on the other hand, marriage risks were low after the transition to parenthood, suggesting that the couples who do not marry before becoming parents may refuse marriage or saw it as irrelevant (Hiekel et al., 2014). Overall, the results suggested that although marriage may be becoming deinstitutionalized in Austria, Hungary, and the UK, it remained a strong symbolic marker of committed couples (Cherlin, 2004) and functioned as a setting for childbearing (Perelli-Harris, 2018).

In contrast, in the Netherlands, the overall effect of the relationship quality on marriage before becoming parents was not significant. However, additional analyses showed that cohabitors with average and higher relationship quality had a higher marriage risk than conception risk. These results supported focus group research that showed that participants view cohabitation as a testing ground for marriage (Hiekel & Keizer, 2015). The happiest couples married while those of lower quality appeared to slide into parenthood, potentially to improve their relationship by having a child (Rijken & Liefbroer, 2009). After the transition to parenthood, higher quality couples in the Netherlands had a higher risk to marry, in line with our hypothesis on the symbolic meaning of marriage, and in line with our findings for the UK.

We also expected that in countries where cohabitation is widespread (Group 2), cohabitors with higher quality relationships would be more likely to enter parenthood before marrying (H1b). This expectation was met in Sweden, where higher relationship quality was associated with having a first birth within cohabitation rather than marriage. After the transition to parenthood, higher quality couples were more likely to marry, possibly putting a ‘capstone’ on their relationship (Holland, 2013) and in line with the marriage revival in Sweden in the early 2000′s (Ohlsson-Wijk, 2011).

Our findings for France and Norway were not fully in line with our expectations. In Norway, relationship quality was not associated with either marriage or conception risk among childless cohabitors. Nonetheless conception risks were higher than marriage risks, indicating the prominence of conception within cohabitation. After the transition to parenthood, however, cohabitors with higher relationship quality had a higher marriage risk, again supporting the ‘capstone’ perspective on marriage. Marriage has become a celebration of commitment especially after having children, as stated by this Norwegian focus group participant, “We have survived the period with young children, so this is to celebrate love.” (Lappegård & Noack, 2015).

Furthermore, even though cohabitation is common and accepted in France (Noack et al., 2014), we still found that for childless cohabitors, relationship quality was associated with marriage rather than conception. On the other hand, French cohabiting parents had higher marriage risks overall, but these marriage decisions seemed independent of relationship quality. French couples with higher relationship quality appeared to marry to celebrate their commitment, indicating the symbolic importance of marriage, but appeared to do so before transitioning to parenthood. Given these findings and the high prevalence of childbearing outside of marriage in France (Eurostat, 2018), further research is needed to study childbearing decisions outside of marriage and the possible role of relationship quality in this context.

Our research indicates that while the order in which family formation events occur may change, relationship quality remains important

for marriage decisions but not necessarily childbearing decisions. Only in Sweden, the context in which childbearing within cohabitation is most accepted, was higher relationship quality associated with conception. But even here relationship quality was associated with marriage after childbearing. This pattern suggests that while the timing of marriage before or after childbearing is not as relevant, marriage itself still signifies higher quality relationships. Marriage seems to have retained much of its symbolic value, even in contexts where cohabitation has diffused to wider populations and marriage is largely deinstitutionalized (Cherlin, 2020; Lappegård & Noack, 2015; Liefbroer & Dourleijn, 2006). As individualization increased and marriage became a choice rather than a reaction to social pressure (Hiekel & Wagner, 2020), self-development and personal growth became increasingly important for marriage decisions (Cherlin, 2004, 2020). Thus, the quality of the relationship became even more important for whether the couple's commitment is formalized through official marriage.

This study has some limitations. First, because of small sample size, we cannot take into account important factors which select people into and differentiate cohabitation from marriage. Second, due to the small sample of cohabitors in our surveys, and the rarity of some family transitions, relationship quality might be associated with the transitions but did not reach statistical significance. Furthermore, the data that we used contained different question wording for relationship quality across countries, including relationship happiness and relationship satisfaction. Potentially these different measurements impact couples' relationship progression differently. Additionally, the relatively short observation period of the study (maximum 50 months after the interview) may overlook cohabitors who make transitions beyond this period. Finally, relationship quality was measured at one point in time even though it may change (rapidly) for some groups, although it is quite stable for most couples (see Karney & Bradbury, 2020).

In total, this study highlights the importance of relationship quality for family transitions. Although prior studies have focused on a variety of individual and couple characteristics, especially socio-economic factors, relationship quality is a key, yet understudied, mechanism in the marriage process. And whereas prior studies sometimes (implicitly) suggest that marriage strengthens couples' relationships (Brown et al., 2017; Wiik et al., 2012), our results point to a different direction of causality, namely the selection of couples with higher relationship quality into marriage. Cross-sectional studies which find that married couples have on average higher quality relationships than cohabitors neglect this selection process, which can contribute to the cohabitation gap in relationship quality (Wiik et al., 2012). Thus, although the association between relationship quality and marriage - and whether it occurs before or after a birth - differs across contexts, on average, marriage has not been eschewed in Europe. While marriage may be postponed, it is still a marker of the strongest relationships.

## Declarations of interest

None.

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## Appendix

see Appendix Table A1 A2 A3 A4.

**Table A1**
Analysis 1: Transitions from childless cohabitation to marriage, non-marital conception, and separation, competing risk hazard models per country, relative risk ratios.

| | Austria | | | | | | France | | | | | | Hungary | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Marriage | | Conception | | Separation | | Marriage | | Conception | | Separation | | Marriage | | Conception | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p |
| Relationship quality | 2.209 | 0.020 | 1.417 | 0.215 | 0.695 | 0.003 | 1.509 | 0.061 | 1.035 | 0.857 | 0.545 | 0.002 | 1.743 | 0.007 | 1.145 | 0.506 | 0.850 | 0.270 |
| *Controls* | | | | | | | | | | | | | | | | | | |
| Age | 1.000 | 0.999 | 1.049 | 0.136 | 0.934 | 0.081 | 1.015 | 0.686 | 1.101 | 0.005 | 0.826 | 0.061 | 0.996 | 0.911 | 1.053 | 0.304 | 0.933 | 0.134 |
| Gender (Female =ref.) | | | | | | | | | | | | | | | | | | |
| Male | 1.101 | 0.737 | 1.541 | 0.193 | 1.737 | 0.104 | 1.218 | 0.545 | 0.792 | 0.536 | 0.783 | 0.711 | 0.921 | 0.748 | 0.527 | 0.087 | 1.251 | 0.489 |
| Relationship history (no=ref.) | | | | | | | | | | | | | | | | | | |
| Had prior union | 0.875 | 0.691 | 0.986 | 0.969 | 1.947 | 0.061 | 0.606 | 0.244 | 0.696 | 0.388 | 2.485 | 0.147 | 1.129 | 0.749 | 0.399 | 0.174 | 1.897 | 0.141 |
| Relationship duration (years) | 0.996 | 0.970 | 0.890 | 0.340 | 1.075 | 0.554 | 1.009 | 0.933 | 0.805 | 0.068 | 1.181 | 0.373 | 0.953 | 0.635 | 1.061 | 0.637 | 1.066 | 0.622 |
| Months since interview | 0.982 | 0.099 | 0.993 | 0.553 | 0.993 | 0.558 | 1.025 | 0.089 | 1.033 | 0.042 | 0.964 | 0.217 | 1.002 | 0.868 | 1.013 | 0.274 | 1.011 | 0.322 |
| Constant | 0.013 | 0.000 | 0.002 | 0.000 | 0.033 | 0.002 | 0.006 | 0.000 | 0.001 | 0.000 | 0.532 | 0.792 | 0.015 | 0.000 | 0.002 | 0.000 | 0.033 | 0.004 |

| | Netherlands | | | | | | Norway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Marriage | | Conception | | Separation | | Marriage | | Conception | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p |
| Relationship quality | 1.051 | 0.755 | 1.192 | 0.426 | 0.701 | 0.042 | 1.210 | 0.238 | 1.077 | 0.469 | 0.724 | 0.001 |
| *Controls* | | | | | | | | | | | | |
| Age | 0.992 | 0.814 | 0.964 | 0.375 | 1.033 | 0.482 | 0.936 | 0.010 | 0.933 | 0.000 | 0.911 | 0.002 |
| Gender (Female =ref.) | | | | | | | | | | | | |
| Male | 1.249 | 0.406 | 1.178 | 0.622 | 1.163 | 0.731 | 1.106 | 0.713 | 1.067 | 0.745 | 1.234 | 0.521 |
| Relationship history (no=ref.) | | | | | | | | | | | | |
| Had prior union | 0.844 | 0.659 | 1.635 | 0.255 | 1.765 | 0.258 | 0.976 | 0.938 | 1.071 | 0.767 | 1.890 | 0.082 |
| Relationship duration (years) | 1.095 | 0.384 | 1.270 | 0.067 | 0.933 | 0.698 | 0.946 | 0.533 | 0.962 | 0.552 | 0.880 | 0.240 |
| Months since interview | 0.988 | 0.280 | 0.999 | 0.943 | 1.036 | 0.036 | 1.014 | 0.166 | 0.986 | 0.082 | 1.027 | 0.020 |
| Constant | 0.013 | 0.000 | 0.010 | 0.000 | 0.001 | 0.000 | 0.053 | 0.000 | 0.165 | 0.000 | 0.051 | 0.000 |

| | Sweden | | | | | | United Kingdom | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Marriage | | Conception | | Separation | | Marriage | | Conception | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p |
| Relationship quality | 1.142 | 0.555 | 1.402 | 0.035 | 0.796 | 0.052 | 1.425 | 0.000 | 0.895 | 0.195 | 0.760 | 0.000 |
| *Controls* | | | | | | | | | | | | |
| Age | 1.075 | 0.047 | 1.030 | 0.227 | 0.944 | 0.083 | 1.005 | 0.658 | 0.932 | 0.000 | 0.944 | 0.000 |
| Gender (Female=ref.) | | | | | | | | | | | | |
| Male | 1.044 | 0.914 | 1.107 | 0.682 | 1.034 | 0.904 | 0.943 | 0.594 | 1.158 | 0.407 | 1.370 | 0.029 |
| Relationship history (no=ref.) | | | | | | | | | | | | |
| Had prior union | 0.812 | 0.642 | 1.047 | 0.868 | 0.700 | 0.288 | 0.876 | 0.328 | 1.152 | 0.524 | 1.705 | 0.001 |
| Relationship duration (years) | 1.207 | 0.156 | 1.154 | 0.091 | 1.053 | 0.596 | 1.054 | 0.172 | 1.022 | 0.735 | 0.965 | 0.520 |
| Months since interview | 1.011 | 0.476 | 1.004 | 0.663 | 0.947 | 0.000 | 1.013 | 0.001 | 0.971 | 0.000 | 0.984 | 0.009 |
| Constant | 0.000 | 0.000 | 0.003 | 0.000 | 0.091 | 0.003 | 0.010 | 0.000 | 0.054 | 0.000 | 0.043 | 0.000 |

**Source:** Generations and Gender surveys and UK Household Longitudinal Study.

**Table A2**

Analysis 1. Testing the differences (Δ) between points in Figs. 1 and 2. P-values are shown in this table. The p-values for the differences between the mean (M) relationship quality and the mean-2 SD, mean-1 SD, and mean+ 1 SD are shown for the risk of Marriage, Conception, and Separation. The difference in Marriage and Conception risks are tested for different levels of relationship quality (mean- SD, mean-1 SD, mean, and mean+1 SD).

| | Marriage | | | Conception | | | Separation | | | Δ Marriage & Conception | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Δ M & M-2 SD | Δ M & M-1 SD | Δ M & Max/ M+ 1 SD | Δ M & M-2 SD | Δ M & M-1 SD | Δ M & Max/ M+ 1 SD | Δ M & M-2 SD | Δ M & M-1 SD | Δ M & Max/ M+ 1 SD | at M-2 SD | at M-1 SD | at M | at M+ 1 SD |
| Austria | < 0.001 | < 0.001 | 0.021 | 0.050 | 0.110 | 0.239 | 0.028 | 0.010 | 0.001 | 0.543 | 0.738 | 0.394 | 0.048 |
| France | 0.001 | 0.008 | 0.086 | 0.851 | 0.862 | 0.880 | 0.064 | 0.025 | 0.004 | 0.416 | 0.643 | 0.506 | 0.086 |
| Hungary | < 0.001 | < 0.001 | 0.013 | 0.447 | 0.483 | 0.540 | 0.335 | 0.294 | 0.215 | 0.669 | 0.774 | 0.016 | 0.001 |
| Netherlands | 0.519 | 0.541 | 0.575 | 0.526 | 0.552 | 0.594 | 0.114 | 0.065 | 0.017 | 0.536 | 0.205 | 0.028 | 0.048 |
| Norway | 0.141 | 0.183 | 0.268 | 0.428 | 0.448 | 0.483 | 0.005 | 0.001 | < 0.001 | 0.046 | 0.006 | < 0.001 | 0.021 |
| Sweden | 0.510 | 0.540 | 0.591 | 0.002 | 0.010 | 0.061 | 0.107 | 0.073 | 0.025 | 0.340 | 0.043 | < 0.001 | < 0.001 |
| United Kingdom | < 0.001 | < 0.001 | < 0.001 | 0.245 | 0.216 | 0.159 | 0.001 | < 0.001 | < 0.001 | 0.751 | 0.001 | < 0.001 | < 0.001 |

**Source:** Generations and Gender surveys and UK Household Longitudinal Study.

**Table A3**

Analysis 2: Transitions from cohabitation of parents to marriage and separation, competing risk hazard models per country, relative risk ratios.

| | Austria | | | | France | | | | Hungary | | | | Netherlands | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Marriage | | Separation | | Marriage | | Separation | | Marriage | | Separation | | Marriage | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p |
| Relationship quality | 1.009 | 0.940 | 0.689 | 0.002 | 1.255 | 0.156 | 0.804 | 0.209 | 1.370 | 0.217 | 0.635 | 0.000 | 2.197 | 0.012 | 0.617 | 0.007 |
| *Controls* | | | | | | | | | | | | | | | | |
| Nr. Children | 1.127 | 0.429 | 0.761 | 0.306 | 1.091 | 0.643 | 1.166 | 0.550 | 0.846 | 0.522 | 0.802 | 0.245 | 0.986 | 0.960 | 1.159 | 0.610 |
| Age | 0.975 | 0.306 | 0.936 | 0.054 | 0.979 | 0.515 | 1.010 | 0.821 | 0.994 | 0.900 | 1.008 | 0.834 | 1.021 | 0.662 | 0.924 | 0.150 |
| Gender (Female=ref.) | | | | | | | | | | | | | | | | |
| Male | 0.780 | 0.314 | 0.875 | 0.713 | 0.542 | 0.073 | 1.286 | 0.551 | 1.046 | 0.916 | 1.328 | 0.474 | 0.425 | 0.130 | 0.663 | 0.540 |
| Relationship history (no prior union=ref.) | | | | | | | | | | | | | | | | |
| Had prior union | 1.166 | 0.577 | 1.527 | 0.288 | 1.221 | 0.604 | 2.620 | 0.065 | 0.613 | 0.368 | 1.608 | 0.274 | 0.629 | 0.423 | 2.506 | 0.131 |
| Relationship duration (years) | 1.014 | 0.629 | 0.985 | 0.749 | 0.974 | 0.480 | 0.956 | 0.386 | 0.912 | 0.100 | 0.980 | 0.609 | 0.884 | 0.054 | 0.967 | 0.621 |
| Months since interview | 0.983 | 0.038 | 1.010 | 0.409 | 0.989 | 0.458 | 0.983 | 0.406 | 0.978 | 0.171 | 1.028 | 0.038 | 1.001 | 0.965 | 1.010 | 0.579 |
| Constant | 0.019 | 0.000 | 0.035 | 0.001 | 0.019 | 0.000 | 0.002 | 0.000 | 0.012 | 0.001 | 0.001 | 0.000 | 0.006 | 0.000 | 0.021 | 0.014 |

| | Norway | | | | Sweden | | | | United Kingdom | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Marriage | | Separation | | Marriage | | Separation | | Marriage | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p |
| Relationship quality | 1.872 | 0.000 | 0.555 | 0.000 | 1.543 | 0.001 | 0.481 | 0.000 | 1.184 | 0.002 | 0.790 | 0.000 |
| *Controls* | | | | | | | | | | | | |
| Nr. Children | 1.202 | 0.115 | 0.731 | 0.048 | 1.185 | 0.144 | 0.995 | 0.977 | 0.909 | 0.128 | 1.042 | 0.504 |
| Age | 0.970 | 0.066 | 0.947 | 0.026 | 0.976 | 0.281 | 0.970 | 0.342 | 1.005 | 0.611 | 0.968 | 0.002 |
| Gender (Female=ref.) | | | | | | | | | | | | |
| Male | 1.180 | 0.271 | 1.180 | 0.403 | 1.072 | 0.732 | 1.212 | 0.503 | 0.856 | 0.174 | 0.740 | 0.017 |
| Relationship history (no prior union=ref.) | | | | | | | | | | | | |
| Had prior union | 1.226 | 0.219 | 1.350 | 0.167 | 0.981 | 0.933 | 1.770 | 0.081 | 1.229 | 0.116 | 1.372 | 0.020 |
| Relationship duration (years) | 0.924 | 0.000 | 1.006 | 0.832 | 0.977 | 0.303 | 0.950 | 0.138 | 0.926 | 0.000 | 0.946 | 0.000 |
| Months since interview | 1.008 | 0.137 | 1.007 | 0.299 | 1.000 | 0.956 | 1.009 | 0.446 | 0.988 | 0.004 | 1.001 | 0.769 |
| Constant | 0.013 | 0.000 | 0.020 | 0.000 | 0.015 | 0.000 | 0.007 | 0.000 | 0.013 | 0.000 | 0.020 | 0.000 |

**Source:** Generations and Gender surveys and UK Household Longitudinal Study.

**Table A4**

Analysis 2. Testing the differences between points in Figs. 3 and 4. P-values are shown in this table. The p-values for the differences between the mean (M) relationship quality and the mean - 2 SD, mean - 1 SD, and mean + 1 SD are shown for the risk of Marriage and Separation.

| | Marriage | | | Separation | | |
|---|---|---|---|---|---|---|
| | Δ M & M-2 SD | Δ M & M-1 SD | Δ M & Max/M+ 1 SD | Δ M & M-2 SD | Δ M & M-1 SD | Δ M & Max/M+ 1 SD |
| Austria | 0.928 | 0.931 | 0.934 | 0.020 | 0.006 | < 0.001 |
| France | 0.082 | 0.120 | 0.210 | 0.287 | 0.238 | 0.143 |
| Hungary | 0.097 | 0.155 | 0.277 | 0.006 | 0.001 | < 0.001 |
| Netherlands | 0.001 | < 0.001 | 0.030 | 0.057 | 0.022 | 0.003 |
| Norway | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Sweden | < 0.001 | < 0.001 | 0.004 | < 0.001 | < 0.001 | < 0.001 |
| United Kingdom | < 0.001 | 0.001 | 0.005 | < 0.001 | < 0.001 | < 0.001 |

**Source:** Generations and Gender surveys and UK Household Longitudinal Study.

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