# Is there a "bar" for relationship quality? Examining the association between relationship happiness, economic conditions, and family transitions in the UK

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## ABSTRACT

Recent studies have found that in the US and Europe, marriage is associated with stable economic conditions, while separation and childbearing within cohabitation are associated with disadvantage. Few studies have examined relationship quality in shaping family transitions, especially analysing interactions with socioeconomic status, which could help to explain the divergence in family behaviour. Using the UK Household Longitudinal Survey (2009-2017), we employ competing risk hazard models to follow respondents as they 1) transition from cohabitation into marriage, childbearing, or separation; 2) transition from marriage or cohabitation into parenthood; and 3) separate after having children. We find that the happiest couples have much higher marriage risks, but relationship quality is not directly associated with childbearing in the UK. Instead, the effect of relationship quality on childbearing operates through marriage: the happiest couples marry, and married couples have children. While low income, low education, and partners' unemployment are associated with childbearing in cohabitation and separation, these associations do not differ by relationship happiness. Thus, our findings suggest a "relationship quality bar" for marriage and separation, but not childbearing.

## KEYWORDS

## EDITORIAL NOTE

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**IS THERE A "BAR" FOR RELATIONSHIP QUALITY?
EXAMINING THE ASSOCIATION BETWEEN RELATIONSHIP
HAPPINESS, ECONOMIC CONDITIONS, AND FAMILY
TRANSITIONS IN THE UK**

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# 1.  INTRODUCTION

Recent studies have found that stable economic and employment conditions are associated with the transition into marriage in the US and across Europe (Ishizuka 2018, Schneider et al 2019, Kalmijn 2011, Garriga and Perelli-Harris 2019). In addition, in most countries, having children within cohabiting unions is associated with low education and disadvantage (Perelli-Harris et al 2010, Mikolai et al 2018). Thus, increasing evidence indicates that family trajectories are diverging by educational level and economic situation, with the advantaged more likely to marry and have children within marriage, and the disadvantaged more likely to have children within cohabitation and experience union instability (McLanahan 2004, Kalmijn 2013, Perelli-Harris and Lyons-Amos 2016, Musick and Michelmore 2018).

One of the key puzzles, however, is how relationship quality[1] plays into this picture. The demographic and sociological literature tends to emphasize the role of economic factors in the divergence of family behaviours, while ignoring relationship functioning and couple coherence. Yet how couples interact and relate to each other is clearly important for their decisions regarding marriage, childbearing, and separation. Some studies do examine the association between partnership type and relationship quality; for example, in the US, cohabiting couples have lower relationship quality (Brown 2003, Brown et al 2017), and across Europe, on average, cohabitors have lower relationship quality than married individuals (Wiik et al 2012). However, by directly comparing cohabiting and married individuals, these studies implicitly assume that marriage is causally related to higher relationship quality, when in fact the direction of causality could be reversed, with higher relationship quality leading to marriage. This may especially be the case given the rapid increase in couples living together before marriage and the increase in cohabitation as a normative context for childbearing. Thus, it is important to follow couples over time to see what extent relationship quality is associated with transitions over the lifecourse. Examining whether the association between relationship quality and family transitions differs by economic status may help to explain how and why family transitions are diverging.

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[1] While some authors make a distinction between relationship quality and relationship happiness or satisfaction, here we use the terms interchangeably.

In this study, we use the UK Household Longitudinal Study (2009-2017), a large household data set that includes information from both members of the couple and prospectively follows couples as they experience family events. Our study examines three separate analyses, each of which provides insights into processes of family formation and answers distinct but interrelated research questions at different stages of the process. First, we focus on cohabiting couples and how relationship quality prompts transitions into marriage, childbearing, or union dissolution (Analysis 1). Given that cohabitation has become the normative way to start co-residential partnerships in the UK, this analysis investigates which couples are progressing their relationship by marrying or having children, and which are separating. By the early 2000s in the UK, 80% of couples began their unions with cohabitation; yet for most, cohabitation was not a long-term partnership type, with 40% transitioning into marriage and 31% dissolving their unions within 5 years (Beaujouan and Ni Bhrolchain 2011). Meanwhile, childbearing within cohabitation has been increasing in the UK; in 2015, 32% of births in the UK were registered to cohabiting couples (ONS 2015). Prior research has found that births within cohabitation disproportionately occurred to less advantaged couples (Crawford et al 2012, Mikolai et al 2018), raising questions about why disadvantaged couples are less likely to marry before the birth. Whereas economically advantaged individuals who are happy with their relationship may marry before the transition to parenthood, happy disadvantaged couples may transition to childbearing without marrying. Examining the role of relationship quality in these transitions, while paying attention to socioeconomic status and employment stability, is particularly important for understanding how economically disadvantaged individuals make decisions about marriage and childbearing.

Second, we explore how relationship quality is associated with transitions into parenthood while directly comparing the relationship quality between married and cohabiting individuals (Analysis 2). A large literature examines how parenthood strains relationships (e.g. Doss et al. 2009, Kluwer and Johnson 2010), or produces a U-shaped trajectory of relationship quality with respect to the age of the child (Keizer and Schenk 2012). However, only a few studies have looked at the opposite: how relationship quality may be related to childbearing. Studies in the Netherlands found that the quality of interactions between partners had an impact on the transition to parenthood (Rijken and Liefbroer 2009), and may differ based on gender (Rijken and Thomson 2011), but

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such studies have not taken partnership type into account, or examined the role of economic uncertainty. Here we investigate whether relationship quality is important for the transition into parenthood, especially for economically disadvantaged cohabiting individuals.

Third, despite considerable research on how relationship quality and conflict impact marital stability (e.g. Amato and Hohmann-Marriott 2007), we still lack knowledge about the role relationship quality plays for cohabitors' risk of union dissolution. High quality cohabiting unions may be just as stable as marital unions, albeit without official recognition. We explicitly focus on separation risks for couples with children (Analysis 3), because couples with children are less likely to dissolve their relationships than couples without children (Galezewska 2016), and because the children of separating parents are of particular concern to policy makers (UK Department of Work and Pensions 2019, Musick and Michelmore 2018). Prior research shows that less educated cohabiting parents are more likely to dissolve their partnerships (Musick and Michelmore 2018). However, previous studies have not considered whether poor relationship quality, in conjunction with lower socioeconomic status, explains the higher risk of union dissolution among cohabiting parents.

Taken together, these analyses test whether a "relationship quality bar" must be met for family formation. We answer questions about the extent to which relationship quality matters for marriage and childbearing, and whether low-quality relationships are more likely to dissolve. Interactions between partnership status and relationship quality shed light on whether happier cohabiting couples are more likely to have children, and less likely to dissolve their relationships after having children. Finally, we examine the role of socioeconomic inequality in these associations, and how they interact with relationship quality and partnership status.

## 2.    THEORETICAL FRAMEWORK

This theoretical framework discusses how relationship quality can be associated with three inter-related family transitions - marriage, childbearing, and separation - and the role of socio-economic disadvantage. Throughout the theoretical framework, we

specify a number of analytical hypotheses and the analysis (mentioned in the introduction) used to test them.

## 2.1. RELATIONSHIP QUALITY, MARRIAGE AND COHABITATION

A large body of literature, primarily within social psychology, has studied relationship quality and change within marriage (see Karney and Bradbury 2020 for a review). The majority of these studies have focused on *marital* quality, not on cohabiting relationships. Several studies have focused on the effect of premarital cohabitation on subsequent marital quality, testing the assumption that those who cohabited before marriage would have worse marital quality (Tach and Halpern-Meekin 2009, James and Beattie 2012). The studies found that both selection and experience of cohabitation (or a nonmarital birth) produce worse marital quality. The studies, however, were based on US data when premarital cohabitation was relatively rare and associated with higher risks of divorce; subsequently, other studies have found that the association between premarital cohabitation and divorce has weakened (Reinhold 2010, Manning and Cohen 2012), raising questions about whether premarital cohabitation leads to lower quality marriages. In addition, questions have been raised about whether marriage leads to better outcomes, relative to cohabitation (Musick and Bumpass 2012). Brown (2004) examined relationship quality during the transition from cohabitation to marriage, but again assumed that marriage increases relationship quality rather than examining whether the happiest couples marry. She found no evidence that relationship quality improved after marriage, possibly because marriage is selective of couples with high quality relationships, rather than marriage causing higher relationship quality.

Demographic studies that directly compare cohabiting and married individuals find that relationship quality is much lower among cohabitors (e.g. Wiik et al 2012, Hardie and Lucas 2010). Using cross-sectional data, the studies usually assume that cohabitors are fundamentally different from married people. The studies do not sufficiently recognize the variation in the commitment of cohabiting couples, and that they usually marry or separate (Perelli-Harris and Bernardi 2015). Researchers have also recognized that cohabitors who have intentions to marry have higher relationship quality than cohabitors without these intentions. In Norway and Sweden, for example, cohabiting individuals were less serious and satisfied with their relationship than

married individuals, but cohabitors who had intentions to marry were more similar to married individuals (Wiik et al 2009). Similarly, US research found that those who directly married had higher relationship quality than those who premaritally cohabited or had plans to marry, and cohabiting couples without plans to marry had the lowest relationship quality of all (Brown et al 2017). Although on average, cohabitors appear to have lower relationship quality, research which includes intentions to marry indicates that cohabiting couples are heterogeneous, ranging from those more likely to dissolve their partnerships to those more likely to marry.

Qualitative research in the UK and throughout Europe supports the idea that the happiest couples are more likely to marry (Berrington et al 2015, Perelli-Harris et al 2014). Focus group research found that cohabitation is often considered a testing ground for marriage, while marriage represents a long-term commitment and marker of security (ibid). While couples marry for other reasons, including legal protection or family pressure (Perelli-Harris and Sanchez Gassen 2012, Cherlin 2004), the main reason to marry, according to focus group participants, was to demonstrate commitment to the relationship (Perelli-Harris et al 2014). The wedding, in particular, is a way to celebrate the couple's happiness and symbolizes a deep emotional bond (Berrington et al 2014). Thus, as in the U.S., many British participants saw marriage as the end goal of relationship progression (Sassler 2004), with only the happiest couples achieving this goal. *This prior research leads to the expectation that men and women with better relationship quality are more likely to marry: H1a (Analysis 1).*

On the other hand, although it might seem that relationship quality is the most important factor in decisions to marry (or not to marry), a range of other considerations may be equally important. In the UK focus group research, some cohabitors argued that marriage was not needed to demonstrate commitment, while others were not opposed to marriage, but simply had not gotten around to it (Berrington et al 2015). These couples, especially if they were low-income, often prioritized spending on housing and childrearing, especially given the high cost of a wedding (ibid). In general, British cohabiting couples reported feeling little social pressure to marry; by 2008, two-thirds of respondents in a the British Social Attitudes survey thought that living with a partner showed the same level of commitment as marriage (Duncan and Phillips 2008). *Thus,*

*cohabitors may be content to just live together, and relationship quality may not be associated with transitions to marriage: H1b (Analysis 1).*


## 2.2. RELATIONSHIP QUALITY AND CHILDBEARING

The association between a couple's relationship quality and childbearing is also not straightforward. Prior research, which did not explicitly examine differences between cohabitation and marriage, argued that because children represent a large investment in the relationship, only couples who believe in the future stability of their relationship will have children (Rijken and Liefbroer 2009, Rijken and Thomson 2011). Happier couples expect that their relationships will last and signal their commitment to each other by having children (Berrington et al 2015). This emphasis on commitment leads to the expectation that both married and cohabiting individuals with higher relationship quality will have higher rates of first births: H2a (Analysis 2).

On the other hand, couples with poor quality relationships may try to "revitalize" their relationship by having children (Rijken and Liefbroer 2009, Rijken and Thomson 2011). Couples with poor relationships may think children will strengthen their relationship, or they may not even make an explicit decision to have children and instead "slide" into childbearing (Sassler and Miller 2017, Stanley et al 2006). A Dutch study found that couples with both positive and negative interactions had the highest rates of childbearing (Rijken and Liefbroer 2009). These mixed results suggest that a high quality relationship may not always be a prerequisite for having children and that *there will be no association between relationship quality and first birth risks for either married or cohabiting couples: H2b (Analysis 2).*

Over the past decades, marriage has been the typical setting for childbearing in the UK, despite the increase in childbearing within cohabitation. In England and Wales, marriage conveys greater legal protection and rights (Barlow 2004) and is often perceived as a more secure setting for raising children (Berrington et al 2014). In case of union separation, having been married is advantageous both for mothers, who could benefit from alimony, and for fathers, who are often disadvantaged during the process of separating from cohabiting unions (Barlow 2004, Perelli-Harris and Sanchez Gassen 2012). As found in prior research, we expect that married couples will continue to be

more likely to have a birth than cohabiting couples (Perelli-Harris et al 2012, ONS 2015).

Relationship quality, however, may be an important distinguishing factor among cohabitors. Cohabitors with high quality relationships may have higher first birth risks than cohabitors with poor quality relationships. Because cohabiting couples no longer feel social pressure or a personal necessity to formalize their relationship through marriage, parenthood may be even more important for signaling commitment to the relationship than marriage (Berrington et al 2015). Having a child within cohabitation represents a shared responsibility and cements a partnership to such a degree that the official status of the union may no longer matter (Perelli-Harris 2014). Thus, *we expect that among cohabitors, higher relationship quality will be associated with higher first birth rates than marriage: H3a (Analysis 1). In addition, cohabitors with higher relationship quality will have first birth rates similar to married individuals: H3b (Analysis 2).*

## 2.3.   RELATIONSHIP QUALITY AND PARTNERSHIP DISSOLUTION

Prior studies, especially within the psychological literature, have found that couples with poor relationship quality are more likely to dissolve their partnerships (Karney and Bradbury 1995, Lavner and Bradbury 2010, Tach and Helpern-Meekin 2009, Boertien and Härkönen 2018). Other studies examining the motives for divorce and separation found relational reasons such as "growing apart" or "lack of respect or appreciation" to be most important (de Graaf and Kalmijn 2006 in the Netherlands and Lampard 2013 in the UK). These studies suggest that the proximate reasons for partnership dissolution are often related to relationship functioning and harmony. *This leads us to expect that poor relationship quality is associated with higher rates of separation (Analysis 1, Analysis 2, Analysis 3: H4a).*

Although relationship quality tends to be prominent in the motivations for partnership dissolution, some studies have found that couples in moderately happy, low-conflict relationships also break up (Amato and Hohmann-Marriott 2007). Couples may be attracted by alternative partners, which leads to infidelity, or have problems related to money or other stressors (Lampard 2014). In prior surveys, couples have stated reasons for dissolving their union that are not directly related to poor

relationship quality, for example wanting to live in different locations (Lampard 2013). On the other hand, investments in the relationship, for example joint property or pooled resources that facilitate a certain standard of living, may prevent couples from separating (Le et al 2010, Boertien and Härkönen 2018). Couples may feel pressured by external factors, such as family or friendship networks, to remain committed to the relationship (Carter 2012). A woman's economic independence may also be an important factor, as a woman may be reluctant to divorce if she does not have sufficient economic resources to live on her own (Matysiak et al 2014). *These alternative reasons for staying together suggest there may be no association between relationship quality and the risk of separation (Analysis 1, Analysis 2, Analysis 3: H4b).*

As mentioned above, prior studies have found that separation rates continue to be higher among cohabiting than married parents in the UK (Musick and Michelmore (2018). Because of the public promise that couples make, marriage often signifies "enforceable trust," raising the costs of exiting a marriage (Cherlin 2004). Cohabitation, on the other hand, often entails lower moral obligation and less structural commitment, making it easier for the couple to break up (Johnson et al 1999, Carter 2012). Relationship quality may also be key to understanding the distinction between cohabiting and married parents; marriage itself may not matter if the couple is happy in the relationship. *Thus, we expect that happily cohabiting parents will be just as likely to stay together as happily married parents: H5 (Analysis 3).*

## 2.4. ECONOMIC CONDITIONS, RELATIONSHIP QUALITY, AND FAMILY TRANSITIONS

As mentioned above, prior studies across Europe and the UK have established that economic disadvantage, for example unemployment, low income, and low education are increasingly associated with childbearing within cohabitation (Perelli-Harris et al 2010, Crawford et al 2012, Mikolai et al 2018), and union dissolution (Matysiak et al 2014, Musick and Michelmore 2018). Likewise, high income and education are increasingly associated with marriage and union stability (Kalmijn 2013, Ishizuka 2018). Partnership patterns in the UK appear to be diverging according to educational level; however not to the same extreme as in the U.S. (Perelli-Harris and Lyons Amos 2016).

Prior research has found that unemployment and low socio-economic status are often associated with poor relationship quality (see Blom 2019 and Conger et al 2010 for reviews). According to the Family Stress model (Conger et al 2010), economic stressors strain relationships, negatively impacting the quality of communication and couples' functioning. Evidence suggests that low income leads to higher conflict among partners, especially cohabiting couples (Hardie and Lucas 2010). Men's unemployment is particularly detrimental for relationship quality (Blom & Perelli-Harris, 2020). Despite the established association between disadvantage and relationship quality, the potential role of relationship quality on the association between socio-economic status and specific family transitions is complex and could depend on how disadvantage is measured, for example by education, household income, or employment status. Below we outline three possible expectations, but given the complexity of the associations (and for brevity), we focus on testing them only with Analysis 1 and referring to socio-economic disadvantage (SES) in general terms.

First, relationship quality could differentiate between low-SES cohabitors, with those who are happier in their relationship more likely to transition into marriage. If the majority of the low-SES couples who enter into cohabiting relationships are unhappy, then those who are happy could stand out with higher marriage rates. *This leads us to expect that low SES couples with higher relationship happiness will be more likely to marry than low SES couples with worse relationship happiness. H6a (Analysis 1).*

Second, low SES couples may be happy but not have the resources to marry and decide to have a child outside of marriage. They may prioritize raising children, paying for housing, and other material goods over a wedding (Berrington et al 2015). Indeed wedding expenses were one of the reasons low income couples reported for not marrying. *This leads to the expectation that happy low SES couples will be more likely to have a child than marry: H6b (Analysis 1).*

Third, low income couples may have a child regardless of their relationship quality or functioning. American research suggests that economically disadvantaged couples often "slide" into cohabitation, motivated by finances, convenience, and housing (Manning and Smock 2005, Sassler and Miller 2017, Stanley et al 2006). Childbearing subsequently follows without a deliberate decision to become pregnant.

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According to American research, low-income women have children outside of marriage even in unstable partnerships, because they bring meaning to women's lives (Edin and Kefalas 2005, Sassler and Miller 2017). *Given these arguments, we would expect that low SES cohabitors will be more likely to have a child than marry regardless of relationship quality: H7 (Analysis 1).*

Finally, we ask whether there is a certain relationship quality "bar" that couples need to achieve in order to transition into marriage, childbearing, or, on the other end of the spectrum, separate. The concept of the "bar" arose from the sociological literature examining an income or wealth bar for marriage (Ishizuka 2018, Edin and Kefalas 2005; McLanahan and Percheski 2008). The relationship quality bar is analogous, positing that standards associated with marriage have become more difficult to achieve. As the social expectation for marriage recedes, only those with the highest quality relationships end up marrying. As a corollary, couples that do not achieve a certain level of relationship happiness are more likely to separate, and cohabitation, which is now considered a testing ground for relationships (Perelli-Harris et al 2017), makes it easier to do so.

## 3.  ANALYTICAL APPROACH

### 3.1.  DATA

We use the UK Household Longitudinal Study (UKHLS, University of Essex, ISER) (www.understandingsociety.ac.uk), a nationally representative household-based longitudinal survey (University of Essex 2018). The UKHLS began in 2009 with approximately 40,000 households (51,000 individuals) and has been conducted annually for 8 waves. Our sample came from the waves which collected information on relationship happiness (waves 1, 3, and 5). We followed these individuals until wave 8 in 2016/2017. Our sample included heterosexual men and women who answered the relationship happiness questions, which were collected in a self-completion questionnaire (via paper in Wave 1 and via computer from Wave 3 onward). The household full interview response rate was 57.3 percent in Wave 1 and the individual full interview response rate was 81.8 percent in Wave 1. The individual re-interview rate ranged from 72.4 percent in Wave 2 to 82.0 percent in Wave 7. Because the survey

collected information from all household members, we were able to use information about the partners, for example whether the female partner was pregnant and partners' employment status. Unfortunately, however, missing information on both partners' answer to the relationship happiness question resulted in a small sample size, meaning we were unable to compare partners' responses or conduct dyadic analyses.


## 3.2.  METHODS

As discussed in the theoretical framework, we are interested in examining the intersection between relationship quality, economic indicators, and transitions to marriage, childbearing, and union dissolution, especially among parents. In order to answer our research questions, we conducted three separate analyses. First, in Analysis 1 we restricted our sample to unmarried individuals who had been in a co-residential partnership for three years or less, but did not yet have a joint child. This approach allowed us to focus on recently formed couples but created a large enough sample size to conduct the analyses (N=1,183). We then employed competing risk hazard models to estimate the hazard of 1) marriage; 2) first conception within the partnership; and 3) union dissolution. We backdated births 9 months to time of conception in order to reduce the confounding effect of pregnancy on relationship quality. We used a discrete-time framework to estimate multinomial logistic regression using the sample of all person months when respondents were exposed to risk. Respondents entered the risk set in the month following the interview when relationship quality was recorded. To boost sample size, we also included new unions formed between waves 1 and 3, and between 3 and 5. Respondents were censored when they were no longer captured in the panel survey or turned 46 (the end of women's reproductive ages).


In analysis 2, we examined the transition to first conception (or union dissolution) for both married and cohabiting couples who had not yet had a child together and who had been in the residential relationship for three years or less (N=1,622). Again, we used a discrete-time competing risk hazard model with censoring at end of observation or age 46 and backdated births by 9 months to time of conception. By defining no event as the reference category, the model was able to estimate the net hazard of either first birth or dissolution.

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In Analysis 3, we examined union dissolution among those who have children. This model examined the effect of relationship quality and economic factors on union dissolution, comparing married and cohabiting individuals. Respondents with children under the age of 17 (N=5,502) entered the model at wave 1, 3 or 5 and were censored at separation or the last wave of observation, or at age 46, or when the youngest child became 17 years old. There was no selection on the duration of the co-residential partnership.

## 3.3. VARIABLES

Relationship happiness. One of the main purposes of this paper was to investigate how relationship happiness affected couples' transitions. People were asked in the self-completion questionnaire how happy they were with their relationship, all things considered. The scale ranged from 1 ("extremely unhappy") to 7 ("perfect"), and people were instructed that the middle point ("happy") represented the degree of happiness of most relationships.[2]

Income. The first indicator of socioeconomic wellbeing was the couple's level of income. People were asked about their monthly income, and it was estimated by the UKHLS team when this information was unavailable. The information was net of taxes on earnings and national insurance contributions. Here we used household income, which was the sum from all household members. We then categorized the respective samples in tertiles.

Employment Status. The second factor of socioeconomic wellbeing was the couple's employment status. Respondents were asked about their main economic activity. We categorized this as 'employed' (paid employment or self-employed), 'unemployed' (unemployment), and 'other' (e.g. full-time student, homemaker or caregiver, and long term sick or disabled). The same categories were applied to the partner's employment status, but with an additional category 'no information available' when the partner was not interviewed.

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[2] We tested other indicators of relationship quality in our models, such as the Dyadic Cohesion/Satisfaction scale, which asks about communication, joint interests, conflict, and relationship regret. On the whole, we found few differences with the main results, and therefore do not present these alternative models.

Education. The level of education of the individual was the third indicator of socioeconomic wellbeing. Highest education was measured as the highest degree obtained up to the interview. It was categorized as 'higher' (Degree, other higher degree), 'middle' (A-level or similar), and 'lower' (GCSE or similar, other qualification, no qualification).

Gender. Gender was included as an important control variable for explaining family transitions. We tested whether the association between relationship satisfaction, economic conditions, and family transitions differed by gender; however, because none of the gender interactions were significant at the .05 level, we do not show them in the models.

Partnership status. We controlled for whether the couple is married or cohabiting for Analysis 2 and 3, in which we investigate transitions for both married and cohabiting individuals. The marriage variable was time varying, and updated if the respondent married between waves.

Relationship duration. We included relationship duration before current wave, as relationship quality can decline over time; at the same time, however, relationship duration is usually associated with the stability of the partnership. Relationship duration was measured as number of years before current interview. As mentioned above, in Analyses 1 and 2 (transitions among couples with no child in that relationship) we selected couples who were in co-residential relationship of 3 years or less. In Analysis 3 this selection did not apply.

Previous relationships and children from these relationships. We also controlled for previous family formation, namely whether they had ever experienced a co-residential relationship and number of children before the start of their current union.

Other controls. Besides the factors mentioned above, we controlled for age, country, ethnicity, and panel wave. Age was measured at the time of the interview. Country referred to living in England versus living in Scotland, Wales or Northern

Ireland and Ethnicity was dichotomized as White British versus other. Lastly, panel wave was categorical for waves 1, 3, and 5.

## 4.  RESULTS

### 4.1.  DESCRIPTIVES

Table 1 shows the percents, means, and standard deviations for the variables examined in each of the analyses. In the first analysis, about 23% transitioned into marriage, 15% conceived a child during the period of analysis, and 29% separated. Another third remained in cohabitation; this is higher than expected, but may be due to incomplete follow up of observation due to attrition. For Analysis 2, a quarter of the sample separated, 30% experienced a conception, and 46% remained and did not experience either transition. Finally, in Analysis 3, 9% of the sample separated. Note that the unemployed comprised a small proportion of the samples, and nearly half of the sample was in the highest education group. Among the cohabitors in the first and second samples, around 40% had had a previous relationship, suggesting that cohabitation is related to repartnering. The proportion of parents who had a previous relationship is much smaller (21%).

| | Analysis 1 | | | | Analysis 2 | | | | Analysis 3 | | | |
| | Transitions from childless cohabitation (N=1,183) | | | | Transitions from childless cohabitation or marriage (N=1,622) | | | | Separation among parents (N=5,502) | | | |
| | N | % | M | SD | N | % | M | SD | N | % | M | SD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Transition* | | | | | | | | | | | | |
| No transition | 390 | 33.0 | | | 753 | 46.4 | | | 5,007 | 91.0 | | |
| Marriage | 268 | 22.7 | | | not applicable | | | | not applicable | | | |
| Conception | 180 | 15.2 | | | 480 | 29.6 | | | not applicable | | | |
| Separation | 345 | 29.2 | | | 389 | 24.0 | | | 495 | 9.0 | | |
| Relationship Happiness (1-7) | | | 5.2 | 1.4 | | | 5.2 | 1.4 | | | 5.0 | 1.3 |
| *Household Income (tertiles)* | | | | | | | | | | | | |
| Higher income | 393 | 33.2 | | | 539 | 33.2 | | | 1,853 | 33.7 | | |
| Middle income | 395 | 33.4 | | | 541 | 33.4 | | | 1,844 | 33.5 | | |
| Lower income | 395 | 33.4 | | | 542 | 33.4 | | | 1,805 | 32.8 | | |
| *Employment status* | | | | | | | | | | | | |
| Employed | 980 | 82.8 | | | 1,341 | 82.7 | | | 3,963 | 72.0 | | |
| Unemployed | 74 | 6.3 | | | 105 | 6.5 | | | 267 | 4.9 | | |
| Non-Employed | 129 | 10.9 | | | 176 | 10.9 | | | 1,272 | 23.1 | | |
| *Partner employment status* | | | | | | | | | | | | |
| Employed | 863 | 73.0 | | | 1,180 | 72.8 | | | 3,788 | 68.9 | | |
| Unemployed | 80 | 6.8 | | | 113 | 7.0 | | | 283 | 5.1 | | |
| Non-Employed | 91 | 7.7 | | | 138 | 8.5 | | | 830 | 15.1 | | |
| Info missing | 149 | 12.6 | | | 191 | 11.8 | | | 601 | 10.9 | | |
| *Education* | | | | | | | | | | | | |
| Higher | 572 | 48.4 | | | 826 | 50.9 | | | 2,431 | 44.2 | | |
| Middle | 294 | 24.9 | | | 376 | 23.2 | | | 1,093 | 19.9 | | |
| Lower | 317 | 26.8 | | | 420 | 25.9 | | | 1,978 | 36.0 | | |
| *Gender* | | | | | | | | | | | | |
| Female | 686 | 58.0 | | | 937 | 57.8 | | | 3,402 | 61.8 | | |
| Male | 497 | 42.0 | | | 685 | 42.2 | | | 2,100 | 38.2 | | |
| *Marital Status* | | | | | | | | | | | | |
| Cohabitation | 100 | 100.0 | | | 1,177 | 72.6 | | | 852 | 15.5 | | |
| Marriage | 0 | 0.0 | | | 445 | 27.4 | | | 4,650 | 84.5 | | |
| Age of Youngest child (0-16.9) | | | not applicable | | | | not applicable | | | | 5.2 | 4.3 |
| *Relationship history* | | | | | | | | | | | | |
| No previous relationship | 689 | 58.2 | | | 981 | 60.5 | | | 4,357 | 79.2 | | |
| Had previous Relationship | 494 | 41.8 | | | 641 | 39.5 | | | 1,145 | 20.8 | | |
| Nr. of children before relationship (0-6) | | | 0.4 | 0.9 | | | 0.4 | 0.9 | | | 0.2 | 0.6 |
| *Country* | | | | | | | | | | | | |
| England | 992 | 83.9 | | | 1,355 | 83.5 | | | 4,592 | 83.5 | | |
| Wales, Scotland, Nothern Ireland | 191 | 16.2 | | | 267 | 16.5 | | | 910 | 16.5 | | |
| *Ethnicity* | | | | | | | | | | | | |
| White British | 1,023 | 86.6 | | | 1,292 | 79.7 | | | 3,944 | 71.7 | | |
| Other | 159 | 13.5 | | | 329 | 20.3 | | | 1,558 | 28.3 | | |
| Age (16-45) | | | 29.4 | 6.9 | | | 30.1 | 6.9 | | | 36.1 | 5.8 |
| Relationship duration before wave (years) (0-3.9) | | | 1.4 | 1.1 | | | 1.5 | 1.1 | | | 11.4 | 5.9 |
| *Wave* | | | | | | | | | | | | |
| Wave 1 | 890 | 75.2 | | | 1,269 | 78.2 | | | 5,433 | 98.8 | | |
| Wave 3 | 186 | 15.7 | | | 225 | 13.9 | | | 52 | 1.0 | | |
| Wave 5 | 107 | 9.0 | | | 128 | 7.9 | | | 17 | 0.3 | | |
| Time to event or censor (1-91) | | | 23.6 | 20.8 | | | 30.1 | 23.6 | | | 47.8 | 28.5 |

[1] Range is 0-30 for the sample in part 3

**Table 1:** Percents, means, and standard deviations for transitions and independent variables for each sample

### 4.1.1. COHABITING COUPLES' TRANSITION TO MARRIAGE, BIRTH, OR SEPARATION

Table 2 presents relative risk ratios from competing risk hazard models that compare marriage, separation and conception, relative to remaining in cohabitation. These ratios can be roughly interpreted as relative risks because the outcome variables are rare outcomes – in the vast majority of person-months, no event occurs. We immediately see that for model 1 our main variable of interest – relationship happiness - is positively associated with marriage, confirming H1a. For each level of increase in relationship happiness, the risk of marriage increases by 36%, (p-value <.001). However, relationship happiness seems unrelated to the risk of conception, as the magnitude of the coefficient is very small and not significant, providing evidence for H2b. Happier couples do not have a higher risk of childbearing than couples with poor relationship quality; instead, happier couples are more likely to marry sooner (which does not support H3a). Surprisingly, relationship happiness also does not seem to matter for separation, as the coefficient fails to reach significance at the .05 level, supporting H4b. This null finding may be due to small sample size; because relationship happiness can deteriorate more rapidly than we have been able to measure; or because other factors are more important than relationship happiness.

|  | Model 1 | | | | | |
|  | Marriage | | Conception | | Separation | |
|  | RRR | p | RRR | p | RRR | p |
|---|---|---|---|---|---|---|
| Relationship Happiness | 1.359 | 0.000 | 0.979 | 0.740 | 0.949 | 0.199 |
| *Household Income (tertiles) (highest tertile is ref.)* | | | | | | |
|   Middle income | 0.829 | 0.323 | 0.909 | 0.697 | 1.166 | 0.326 |
|   Low income | 0.678 | 0.074 | 1.098 | 0.687 | 0.880 | 0.478 |
| *Employment status* | | | | | | |
| *(employed is ref.)* | | | | | | |
|   Unemployed | 1.094 | 0.769 | 0.981 | 0.946 | 0.977 | 0.935 |
|   Non-Employed | 1.262 | 0.268 | 0.716 | 0.189 | 1.089 | 0.683 |
| *Partner's employment status* | | | | | | |
| *(employed is ref.)* | | | | | | |
|   Unemployed | 0.505 | 0.084 | 0.956 | 0.881 | 1.540 | 0.067 |
|   Non-Employed | 0.965 | 0.892 | 0.914 | 0.750 | 1.139 | 0.577 |
|   Info missing | 0.746 | 0.188 | 1.002 | 0.993 | 1.224 | 0.236 |
| *Education (Higher is ref.)* | | | | | | |
|   Middle | 0.903 | 0.528 | 1.691 | 0.014 | 0.864 | 0.341 |
|   Lower | 0.917 | 0.631 | 1.641 | 0.020 | 1.183 | 0.247 |
| *Controls* | | | | | | |
| *Gender (female is ref.)* | | | | | | |
|   Male | 0.997 | 0.975 | 1.045 | 0.703 | 1.060 | 0.544 |
| *Relationship history (no previous relationship is ref.)* | | | | | | |
|   Had previous Relationship | 0.732 | 0.074 | 1.470 | 0.050 | 1.304 | 0.073 |
| Nr. of children before relationship | 0.966 | 0.725 | 1.064 | 0.598 | 0.965 | 0.670 |
| *Country (England is ref.)* | | | | | | |
|   Wales, Scotland, Nothern Ireland | 0.971 | 0.896 | 1.486 | 0.064 | 0.909 | 0.590 |
| *Ethnicity (White British is ref.)* | | | | | | |
|   Other | 1.410 | 0.122 | 0.816 | 0.500 | 1.305 | 0.128 |
| Age | 1.017 | 0.227 | 0.901 | 0.000 | 0.963 | 0.002 |
| Relationship Duration pre wave (years) | 0.982 | 0.812 | 0.989 | 0.913 | 0.959 | 0.533 |
| *Wave (wave 1 is ref.)* | | | | | | |
|   Wave 3 | 0.956 | 0.828 | 0.908 | 0.681 | 1.247 | 0.181 |
|   Wave 5 | 0.765 | 0.295 | 0.967 | 0.921 | 0.942 | 0.781 |
| T | 0.994 | 0.112 | 0.984 | 0.012 | 0.993 | 0.033 |
| Constant | 0.015 | 0.000 | 0.005 | 0.000 | 0.011 | 0.000 |

**Table 2:** Analysis 1: Transitions from cohabitation to marriage, separation or conception, competing risk hazard models. Relative Risk Ratios and p-values.

**Source:** UKHLS 2009-2018

Table 2 also provides weak evidence that economic insecurity is associated with remaining in cohabitation relative to marriage, in line with studies finding that cohabitation is associated with a pattern of disadvantage (Perelli-Harris et al 2010, Schneider et al 2019).[3] The results indicate that those in the lowest income tertile have marriage rates which are 32% lower than those in the highest income tertile (p-value=.07). Those who are unemployed have similar risks of marriage, separation and conception as employed, as the p-value is only .77. However, those whose partner is unemployed have a lower marriage rate (p-value=.08, RRR=0.50) and a higher risk of separation (p-value=.07, RRR=1.54). This suggests that partners' unemployment not only affects couples' decisions to marry, but after controlling for income, it leads couples to break up. Education is not significantly related to

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[3] Models without including relationship happiness show similar associations between each socio-economic indicator and family transitions, although the effect of partner's unemployment on marriage was slightly more negative.

marriage and separation; however, education is associated with the risk of childbearing within cohabitation, as found in prior studies in the UK (Mikolai et al 2018). The medium and low educated each have conception risks which are 69% and 64% higher than those with higher education (p-value=.01 and .02), indicating that the highly educated postpone childbearing within cohabitation relative to their less educated counterparts.

Other controls in the model are associated with the outcomes as expected. Having been in a previous partnership lowers the risk of marriage, but increases the risk of separation and conception. Those living outside of England have higher conception risks within cohabitation. Younger cohabitors have higher risks of both separating and having a child. However, gender, ethnicity, relationship duration and number of children before the relationship are not significantly associated with the three outcomes. The baseline hazard of duration since wave 1 (when relationship happiness was measured) is not significantly associated with marriage, but follows a linear specification for separation and conception.

Next, we tested whether relationship happiness leads to different family transitions among individuals in more economic advantaged positions compared to individuals in less advantaged positions. Interactions between the various socioeconomic indicators and relationship happiness are in Appendix Table A1. The interaction for most socio-economic status indicators and relationship happiness is not significant, indicating that irrespective of economic position, relationship happiness is similarly associated with marriage. Low SES cohabitors with higher relationship happiness are more likely to marry than low SES cohabitors with lower relationship happiness, confirming H6a. These results also provide no support that relationship happiness among the disadvantaged leads to conception rather than marriage (H6b). Nonetheless, we find partial support that the effect of happiness differs by educational level: whereas higher relationship happiness is associated with a lower risk of conception among the higher educated – presumably because most of the higher educated are more likely to marry -  it appears to be associated with a higher conception risk among the middle educated. No difference, however, was found between the lower and higher educated in the influence of relationship happiness on conception, suggesting that the least uneducated who are (un)happy with their relationship do not have a higher risk of childbearing than the most educated who are (un)happy with their relationship (H7). Thus, despite the low educated having higher risks of having a child, relationship quality does not matter for this association, which supports the idea that the least educated slide into having a child irrespective of how well they get along with their partner.

### 4.1.2. PARTNERED (BOTH MARRIED AND COHABITING) COUPLES' TRANSITION TO PARENTHOOD OR SEPARATION

Table 3 shows the risk of conception or separation for those living in a partnership, whether married or cohabiting. At the time of observation, the couples had been living together for less than three years and not yet had a child together (Model 2). As in prior models, relationship happiness is not significantly associated with the risk of conception[4] (confirming H2b), although lower levels of relationship happiness do marginally increase the risk of separation (p-value = .07, RRR=0.933) (H4a). Marriage, on the other hand, is strongly associated with childbearing; the risk of conception is nearly three times higher for married individuals than cohabiting individuals (p-value <.001). As expected, married individuals also have an 81% lower risk of separation (p-value <.001). An interaction term between partnership status and relationship happiness was not significant at the .05 level, indicating that relationship happiness is similarly (un)important for childbearing or separation for cohabitors and married couples. The results of the interaction term provide no support for H3b, which posited that cohabitors with higher relationship quality would have first birth rates similar to married individuals. Thus, relationship quality does not help to explain childbearing within cohabitation.

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[4] Note that relationship happiness is also not significantly associated with conception risks when marriage is not included in the model, indicating that marriage is not overwhelming the effect of relationship happiness.

**Table 3.** Analysis 2: Transitions from marriage or cohabitation to separation or conception, competing risk hazard models. Relative Risk Ratios and p-values.

| | Model 2 | | | | Model 3 | | | |
|---|---|---|---|---|---|---|---|---|
| | Conception | | Separation | | Conception | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p |
| Relationship Happiness | 1.011 | 0.767 | 0.933 | 0.070 | 0.964 | 0.557 | 0.953 | 0.242 |
| *Marital status (cohabitation is ref.)* | | | | | | | | |
| Married | 2.981 | 0.000 | 0.190 | 0.000 | 2.962 | 0.000 | 0.184 | 0.000 |
| *Partnership status * Relationship happiness* | | | | | | | | |
| Married * Relationship happiness | | | | | 1.080 | 0.309 | 0.850 | 0.138 |
| *Household Income (tertiles) (highest tertile is ref.)* | | | | | | | | |
| Middle income | 0.774 | 0.067 | 1.057 | 0.710 | 0.774 | 0.067 | 1.059 | 0.704 |
| Low income | 0.798 | 0.177 | 0.960 | 0.808 | 0.800 | 0.180 | 0.958 | 0.800 |
| *Employment status (employed is ref.)* | | | | | | | | |
| Unemployed | 0.972 | 0.894 | 0.904 | 0.704 | 0.970 | 0.884 | 0.910 | 0.723 |
| Non-Employed | 0.895 | 0.488 | 1.129 | 0.516 | 0.890 | 0.469 | 1.133 | 0.503 |
| *Partner employment status (employed is ref.)* | | | | | | | | |
| Unemployed | 1.126 | 0.591 | 1.353 | 0.175 | 1.118 | 0.617 | 1.365 | 0.162 |
| Non-Employed | 1.099 | 0.567 | 1.235 | 0.307 | 1.099 | 0.568 | 1.233 | 0.312 |
| Info missing | 1.164 | 0.343 | 1.182 | 0.309 | 1.160 | 0.354 | 1.189 | 0.293 |
| *Education (Higher is ref.)* | | | | | | | | |
| Middle | 1.039 | 0.754 | 0.911 | 0.526 | 1.031 | 0.807 | 0.917 | 0.557 |
| Lower | 1.151 | 0.285 | 1.122 | 0.408 | 1.149 | 0.294 | 1.124 | 0.401 |
| *Controls* | | | | | | | | |
| *Gender (female is ref.)* | 1.040 | 0.555 | 1.049 | 0.603 | 1.042 | 0.529 | 1.047 | 0.619 |
| Male | | | | | | | | |
| *Relationship history (no previous relationship is ref.)* | | | | | | | | |
| Had previous Relationship | 1.006 | 0.962 | 1.377 | 0.022 | 1.012 | 0.932 | 1.364 | 0.027 |
| Nr. of children before relationship | 0.785 | 0.009 | 1.004 | 0.954 | 0.786 | 0.009 | 1.001 | 0.986 |
| *Country (England is ref.)* | | | | | | | | |
| Wales, Scotland, Nothern Ireland | 1.374 | 0.029 | 0.956 | 0.787 | 1.374 | 0.029 | 0.956 | 0.787 |
| *Ethnicity (White British is ref.)* | | | | | | | | |
| Other | 0.670 | 0.007 | 1.171 | 0.331 | 0.674 | 0.008 | 1.157 | 0.372 |
| Age | 0.930 | 0.000 | 0.961 | 0.001 | 0.930 | 0.000 | 0.962 | 0.001 |
| Relationship Duration pre wave (years) | 0.941 | 0.279 | 0.957 | 0.493 | 0.942 | 0.288 | 0.956 | 0.475 |
| *Wave (wave 1 is ref.)* | | | | | | | | |
| Wave 3 | 0.797 | 0.185 | 1.210 | 0.228 | 0.798 | 0.187 | 1.207 | 0.234 |
| Wave 5 | 0.665 | 0.111 | 1.075 | 0.722 | 0.672 | 0.122 | 1.067 | 0.750 |
| t | 0.987 | 0.000 | 0.996 | 0.158 | 0.987 | 0.000 | 0.996 | 0.184 |
| Constant | 0.008 | 0.000 | 0.010 | 0.000 | 0.008 | 0.000 | 0.010 | 0.000 |

**Table 3:** Analysis 2: Transitions from marriage or cohabitation to separation or conception, competing risk hazard models. Relative Risk Ratios and p-values.

**Source:** UKHLS 2009-2018

Socioeconomic indicators were only marginally significant or not at all significant in these models. Those with middle income had slightly lower risks of conception (p-value = 0.07, RRR=0.774), but the results for those with low income were even more ambiguous. Employment and education were not significantly related to conception and separation. Most of the other controls were not significant, with the exception of a previous relationship increasing the risk of separation by 37% (p-value =.02); having children from a previous relationship reduced the risk of conception by 21% (p-value =.01); not living in England increasing the risk of conception by 38% (p-value =.03); not being white British decreasing the risk of conception by 33%; and age, which decreased the risk of both separation and conception. Interactions between relationship happiness and socio-economic status were also not significant.

### 4.1.3. PARENTS' DISSOLUTION BY PARTNERSHIP TYPE.

Table 4 shows how relationship happiness and partnership status are associated with separation for married and cohabiting parents of children under the age of 17. Model 4 indicates that each additional level of relationship happiness reduces the risk of separation by about 26% (p<.001), confirming H4a. As in the previous model, marriage reduces the risk of separation; in this model by 67% (p<.001). This time, the interaction between partnership status and relationship happiness is highly significant (Figure 1). Cohabiting individuals have higher risks of separation at each level of relationship happiness, but the gap is smaller for the unhappiest couples relative to the happiest couples. This confirms H5, but only partially. Only cohabiting couples who reported having a "perfect" relationship had separation risks similar to married individuals who reported being extremely, fairly, or a little unhappy. Thus, the happiness levels for cohabiting couples need to be very high relative to married couples in order to prevent separation.

| | Model 4 Separation | | Model 5 Separation | |
|---|---|---|---|---|
| | OR | P | OR | p |
| Relationship Happiness | 0.742 | 0.000 | 0.851 | 0.000 |
| *Partnership status (cohabitation is ref.)* | | | | |
| Married | 0.327 | 0.000 | 0.283 | 0.000 |
| *Partnership status * Relationship happiness* | | | | |
| Married * Relationship happiness | | | 0.764 | 0.000 |
| *Household Income (tertiles) (highest tertile is ref.)* | | | | |
| Middle income | 0.742 | 0.041 | 0.731 | 0.031 |
| Low income | 0.990 | 0.945 | 0.954 | 0.757 |
| *Employment status (employed is ref.)* | | | | |
| Unemployed | 1.000 | 0.999 | 0.991 | 0.960 |
| Non-Employed | 0.845 | 0.152 | 0.861 | 0.197 |
| *Partner employment status (employed is ref.)* | | | | |
| Unemployed | 0.978 | 0.896 | 0.979 | 0.902 |
| Non-Employed | 1.070 | 0.677 | 1.069 | 0.680 |
| Info missing | 1.275 | 0.079 | 1.316 | 0.043 |
| *Education (Higher is ref.)* | | | | |
| Middle | 1.179 | 0.209 | 1.141 | 0.316 |
| Lower | 1.021 | 0.872 | 0.990 | 0.935 |
| *Controls* | | | | |
| *Gender (female is ref.)* | | | | |
| Male | 0.725 | 0.002 | 0.732 | 0.002 |
| Age Youngest child | 1.041 | 0.023 | 1.040 | 0.028 |
| *Relationship history* | | | | |
| *(no previous relationship is ref.)* | | | | |
| Had previous Relationship | 1.463 | 0.002 | 1.501 | 0.001 |
| Nr. of children before relationship | 1.303 | 0.000 | 1.284 | 0.000 |
| *Country (England is ref.)* | | | | |
| Wales, Scotland, Nothern Ireland | 1.021 | 0.881 | 0.997 | 0.981 |
| *Ethnicity (White British is ref.)* | | | | |
| Other | 0.670 | 0.004 | 0.647 | 0.002 |
| Age | 0.935 | 0.000 | 0.933 | 0.000 |
| Relationship Duration pre wave (years) | 0.991 | 0.596 | 0.995 | 0.782 |
| *Wave (wave 1 is ref.)* | | | | |
| Wave 3 | 0.902 | 0.774 | 0.998 | 0.997 |
| Wave 5 | 0.711 | 0.656 | 0.721 | 0.694 |
| t | 0.992 | 0.001 | 0.992 | 0.001 |
| Constant | 0.004 | 0.000 | 0.004 | 0.000 |

**Table 4:** Analysis 3 Separation among married or cohabiting parents, competing risk hazard models. Relative Risk Ratios and p-values.

**Source:** UKHLS 2009-2018
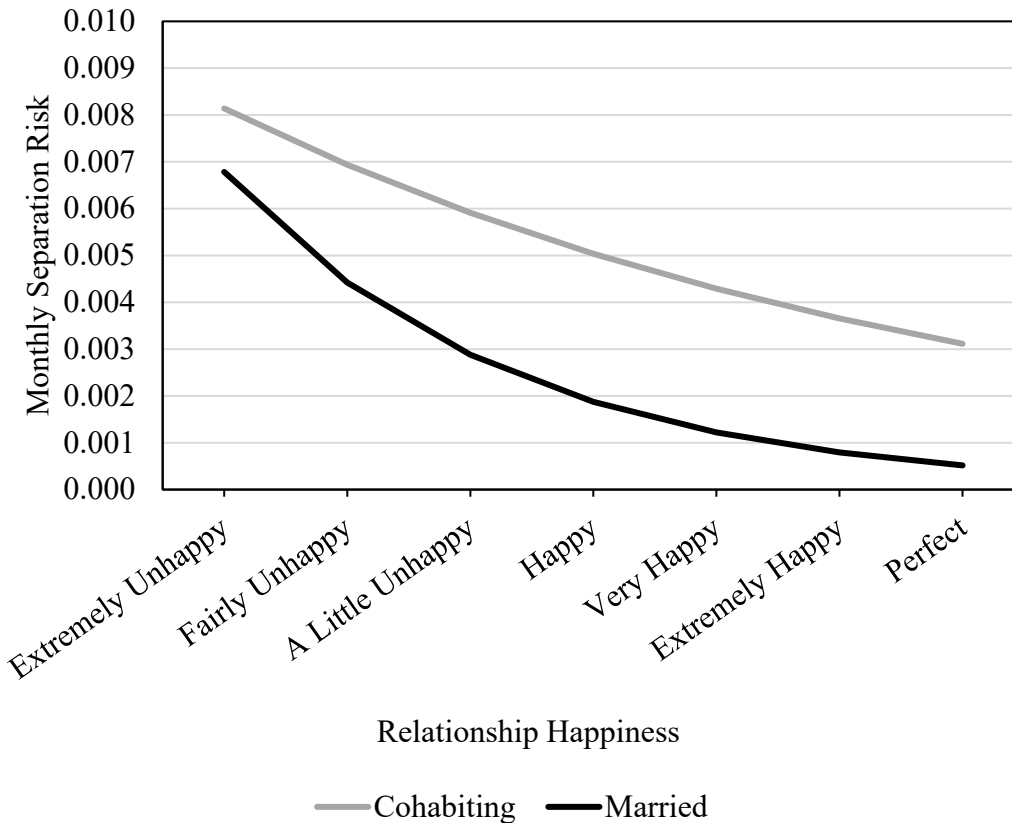
**Figure 1:** Part 3: Competing risk hazard models of separation among married or cohabiting parents: interaction between partnership type and relationship happiness

Middle income leads to a 26% lower risk of separation (p=0.04), but again, low income is not consistent in this analysis. Gender is also significant, with men less likely to separate, possibly reflecting the attrition of men from the survey due to separation. Whether the respondents had a previous relationship and number of children before the relationship increase the risk of separation, as does the age of the youngest child. Not being white British reduces the risk of separation, as does the respondent's age. Interactions between relationship happiness and socio-economic status were also not significant.

### 4.1.4. IS THERE A "BAR" FOR RELATIONSHIP HAPPINESS?

In order to test whether a certain level of happiness is more likely to lead to marriage or conception, or in the opposite direction, separation, we ran models including an ordinal variable of relationship happiness. Note that due to small numbers, the Unhappy group also includes those who were A little unhappy, Fairly unhappy, and Extremely

unhappy with their relationship. First, Model 6 shows there is a strong cut-off point between Very happy and Extremely happy for marriage, suggesting that cohabitors who report that they are Extremely happy or Perfect marry more than twice as quickly as those who report they are Very Happy or Happy (p-value=.001 and .003 respectively). Unsurprisingly, those who report being Unhappy have marriage rates 70% lower than the happiest groups. Similar to Model 1, relationship happiness appears to be unrelated to conception and separation among cohabitors. Model 7 does not show a cut-off point for conception and separation among married and cohabiting couples without children, as none of the coefficients reach significance. Among parents in Model 8 the relationship quality bar for separation seems to be as stark, showing that those who report they are Happy or Unhappy are respectively 2.3 and 3.8 times as likely to separate.

**Table 5.** Relationship happiness "bar" for relationship transitions: Categorical relationship happiness. Competing risk hazard models. Relative Risk Ratios and p-values.

| | Analysis 1 Transitions from cohabitation | | | | | | Analysis 2 Transitions from cohabitation or marriage | | | | Analysis 3 Separation among parents | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Model 6 | | | | | | Model 7 | | | | Model 8 | |
| | Marriage | | Conception | | Separation | | Conception | | Separation | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | OR | p |
| *Relationship Happiness* | | | | | | | | | | | | |
| Unhappy | 0.298 | 0.001 | 1.133 | 0.695 | 1.098 | 0.692 | 0.956 | 0.829 | 1.311 | 0.218 | 3.775 | 0.000 |
| Happy | 0.434 | 0.003 | 0.709 | 0.253 | 1.029 | 0.897 | 0.890 | 0.545 | 1.042 | 0.845 | 2.346 | 0.000 |
| Very happy | 0.460 | 0.001 | 0.877 | 0.608 | 0.859 | 0.464 | 1.050 | 0.758 | 0.909 | 0.626 | 1.237 | 0.312 |
| Extremely happy | 0.968 | 0.860 | 0.923 | 0.722 | 0.814 | 0.283 | 1.035 | 0.807 | 0.875 | 0.457 | 0.988 | 0.956 |
| Perfect | Ref. | | Ref. | | Ref. | | Ref. | | Ref. | | Ref. | |
| *Marital status (cohabitation is ref.)* | | | | | | | | | | | | |
| Married | | | | | | | 2.972 | 0.000 | 0.187 | 0.000 | 0.334 | 0.000 |
| *Household Income (tertiles, highest tertile is ref.)* | | | | | | | | | | | | |
| Middle income | 0.822 | 0.300 | 0.926 | 0.755 | 1.169 | 0.321 | 0.777 | 0.070 | 1.062 | 0.690 | 0.741 | 0.039 |
| Low income | 0.678 | 0.078 | 1.136 | 0.585 | 0.869 | 0.440 | 0.807 | 0.200 | 0.962 | 0.821 | 0.970 | 0.839 |
| *Employment status (employed is ref.)* | | | | | | | | | | | | |
| Unemployed | 1.083 | 0.793 | 0.975 | 0.927 | 0.975 | 0.928 | 0.969 | 0.883 | 0.899 | 0.691 | 0.986 | 0.939 |
| Non-Employed | 1.254 | 0.274 | 0.702 | 0.172 | 1.089 | 0.685 | 0.894 | 0.486 | 1.123 | 0.537 | 0.863 | 0.204 |
| *Partner employment status (employed is ref.)* | | | | | | | | | | | | |
| Unemployed | 0.511 | 0.085 | 0.947 | 0.855 | 1.537 | 0.067 | 1.129 | 0.582 | 1.345 | 0.181 | 0.962 | 0.819 |
| Non-Employed | 0.984 | 0.949 | 0.901 | 0.711 | 1.119 | 0.634 | 1.097 | 0.576 | 1.215 | 0.351 | 1.073 | 0.658 |
| Info missing | 0.753 | 0.207 | 1.006 | 0.983 | 1.239 | 0.209 | 1.158 | 0.362 | 1.191 | 0.291 | 1.267 | 0.087 |
| *Education (Higher is ref.)* | | | | | | | | | | | | |
| Middle | 0.895 | 0.497 | 1.680 | 0.015 | 0.863 | 0.339 | 1.039 | 0.753 | 0.907 | 0.508 | 1.163 | 0.250 |
| Lower | 0.940 | 0.733 | 1.649 | 0.020 | 1.177 | 0.266 | 1.160 | 0.265 | 1.113 | 0.447 | 1.031 | 0.809 |
| Constant | 0.023 | 0.000 | 0.005 | 0.000 | 0.012 | 0.000 | 0.008 | 0.000 | 0.010 | 0.000 | 0.003 | 0.000 |

**Table 5:** Relationship happiness "bar" for relationship transitions: Categorical relationship happiness. Competing risk hazard models. Relative Risk Ratios and p-values.

**Source:** UKHLS 2009-2018. Controlled for gender, age youngest child, relationship history, number of children before relationship, country, ethnicity, age, relationship duration, wave, and t

# 5. CONCLUSION

As in many Western countries, cohabitation in the UK has increased at a rapid rate over the past few decades, raising questions about whether cohabitation is a substitute for marriage. Here we find that this is not the case: cohabitors with high quality relationships are much more likely to marry, indicating that marriage continues to represent a preferred type of relationship for the British population. In fact, the results suggest that cohabiting couples need to meet a "relationship quality bar:" only those "extremely" or "perfectly" happy with their relationship had higher risks of marriage. If official marriage were "just a piece of paper," as some have suggested (Berrington et al 2015), we would expect no association between relationship happiness and marriage. But our findings indicate that, on average, happy couples marry; they do not stay in long-term cohabitation.

These results are in line with qualitative research which continues to highlight the importance of marriage in British society. Focus group participants generally agreed that marriage signals "the ultimate commitment," and is "a real statement" (Berrington et al 2015). While some participants said that cohabitors could be as committed as married couples, the overall opinion was that marriage represents a different type of bond. Here we study relationship happiness and not commitment, but we find that marriage is a way of expressing the quality of the relationship. Those couples who perceive their relationships as happier than the average couple marry more quickly and do not linger in cohabitation.

The effect of relationship happiness on childbearing, on the other hand, does not appear to be direct, but instead goes through marriage. We find no association between relationship satisfaction and conceiving a child within cohabitation, but instead find that happier couples are more likely to marry, and married couples have higher rates of childbearing. In our childbearing analyses, relationship quality itself is not significant, contradicting prior studies finding that those with "medium" relationship quality have higher birth rates (Rijken and Liefbroer 2009). In addition, the interaction term between partnership type and relationship happiness was not significant, but the marriage coefficient continued to be significant. This indicates that at all levels of happiness, married couples had higher birth rates, again suggesting the importance of marriage in

childbearing. Nonetheless, the high percent of births within cohabitation in the UK suggests that other factors are influencing childbearing decisions. Even though relationship quality does not seem to be important for deciding to have a child within cohabitation, especially when compared to the role of marriage, other factors are prompting people to have children within cohabitation.

Our final analysis found that there also appears to a "relationship quality bar" for separation; parents who reported being "happy" or less than "happy" with their relationship had much higher separation rates than those who reported being "very happy," "extremely happy," or "perfect." The cut-off point may have to do with the question wording, which said that the middle point ("happy") represented the degree of happiness of most relationships. Parents who thought their relationship was only average might have experienced a steeper decline in relationship quality over time, eventually leading to separation.

The results also reinforce the idea that marriage is a more secure setting for raising children than cohabitation. Cohabiting parents have much higher rates of separation than married parents, suggesting that marriage before childbearing is a signal of stability (Thomson et al 2019, Musick and Michelmore 2018). Relationship quality only marginally explains the difference: at all levels of cohabitation, cohabitors have higher separation risks than married individuals, and only the unhappiest married couples are as likely to separate as the happiest cohabiting couples. The results suggest that either relationship quality deteriorates more quickly among cohabiting couples, or that married couples have other barriers to divorce that prevent them from separating, for example maintaining their standard of living or housing (Boertien and Härkönen 2018). Marriages may also be bound by "enforceable trust" (Cherlin 2004) or moral or structural commitment (Johnson et al 1999), which make relationship happiness less relevant to whether a couple separates. Again, these findings shed light on the nature of cohabitation in the UK, suggesting that on average cohabitation is a less committed type of union. In addition, the relationship quality bar for marriage, but not childbearing, may have increased over time, accounting for the increase in childbearing with cohabiting unions that are prone to separation.

Our study also confirms previous findings that cohabitation and separation in the UK are associated with a pattern of disadvantage (Berrington and Diamond 2000, Perelli-Harris et al 2010). Cohabitors with lower income were less likely to marry, and those whose partners were unemployed were more likely to separate, although the associations were weak. In addition, cohabitors with the highest level of education were more likely to postpone childbearing in cohabitation, as found in prior studies (Perelli-Harris et al 2010, Mikolai et al 2018). Thus, family dynamics in the UK are stratified by socioeconomic status, with the disadvantaged less likely to marry, more likely to separate, and more likely to have a child within cohabitation.

The results, however, show that in the UK relationship happiness is a more important indicator than economic situation. The interaction term between relationship happiness and economic indicators suggests that disadvantaged couples who were happy were more likely to marry than disadvantaged couples who were unhappy. On the other hand, relationship quality does make a difference to the association between education and childbearing: the middle educated were more likely to conceive a child the happier they were with the relationship, while the happier higher educated individuals had lower conception rates. Happiness did not matter at all for low educated individuals – they were just as likely to have children in cohabitation regardless of relationship quality. This result may help to explain the negative educational gradient of childbearing within cohabitation; the highly educated individuals who were happier in the relationship were more likely to postpone childbearing in cohabitation, potentially because they were more likely to want to marry first. Low educated individuals, however, may not be making a concerted decision to have a child based on the quality of their relationship, but instead "slide" into having children (Sassler and Miller 2017, Edin and Kefalas 2005). For these individuals, children just come along, even if the relationship is not as solid as the couple would like.

Our study is not without limitations. First, as mentioned at the outset, relationship quality is a complex construct, which can fluctuate and decline over time (Lavner and Bradbury 2010, James 2015). Our analyses capture relationship happiness at a single point in time, but more refined measures may produce different results, especially since prior studies suggest that the deterioration in relationship quality differs across groups (Lavner and Bradbury 2010). Second, although the UKHLS is one of the

largest surveys in the world, restricting our analysis to cohabiting couples who have been in a partnership for three years or less results in a small sample with relatively few transitions. Such a small sample size may produce non-significant results that could become significant with a larger sample size. This is particularly important for conclusions related to the few differences by relationship type among the disadvantaged; a larger sample may reveal that the happiest low income couples are more likely to have children.

Despite these limitations, our findings provide new insights into family processes. Prior studies on the association between relationship quality and partnership type often assume that cohabiting and married individuals are fundamentally different. Here we show that instead these two union types are part of a process of partnership formation, with happier cohabitors transitioning into marriage. Our study implies that relationship quality leads to marriage, rather than marriage being defined by or causing higher relationship quality. Thus, it is important for family researchers to avoid directly comparing the relationship quality of these two union types and recognize that cohabitation is often on the path to marriage and childbearing, especially for couples with high quality relationships.

Finally, although demographers have recently focused primarily on socio-economic factors that prompt family transitions, it is important to acknowledge that the couple's happiness is most salient for transition into marriage, regardless of socio-economic status. Low-SES couples in the UK who were happy with their relationship were more likely to marry than those who were unhappy. Nonetheless, low education was strongly associated with childbearing within cohabitation, suggesting that low educated couples have a higher risk of "sliding" into having children, regardless of relationship quality. Subsequently, these cohabiting parents were also more likely to separate. Hence, our results suggest that improving the relationship quality of low-SES couples would lead them to marry, which tends to be a more stable environment for children. In order to promote stable families, future research needs to delve deeper into the underlying psychological and social factors which lead to poor quality relationships, especially for low SES individuals.

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# 7. APPENDIX

| | Interaction between Income * Relationship happiness | | | | | | Interaction between Employment status * Relationship happiness | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Marriage | | Conception | | Separation | | Marriage | | Conception | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p |
| Relationship Happiness | 1.298 | 0.010 | 0.909 | 0.426 | 0.950 | 0.458 | 1.353 | 0.000 | 0.979 | 0.769 | 0.940 | 0.177 |
| *Household Income (tertiles) (highest tertile is ref.)* | | | | | | | | | | | | |
| Middle income | 0.795 | 0.270 | 0.901 | 0.673 | 1.165 | 0.328 | 0.830 | 0.328 | 0.907 | 0.691 | 1.165 | 0.329 |
| Low income | 0.659 | 0.064 | 1.098 | 0.691 | 0.881 | 0.484 | 0.679 | 0.076 | 1.091 | 0.711 | 0.873 | 0.457 |
| *Employment status (employed is ref.)* | | | | | | | | | | | | |
| Unemployed | 1.098 | 0.760 | 0.978 | 0.935 | 0.977 | 0.935 | 0.994 | 0.986 | 0.971 | 0.916 | 0.970 | 0.914 |
| Non-Employed | 1.255 | 0.285 | 0.709 | 0.187 | 1.088 | 0.687 | 1.281 | 0.275 | 0.723 | 0.204 | 1.109 | 0.615 |
| *Partner employment status (employed is ref.)* | | | | | | | | | | | | |
| Unemployed | 0.507 | 0.083 | 0.957 | 0.885 | 1.540 | 0.066 | 0.509 | 0.085 | 0.967 | 0.911 | 1.556 | 0.062 |
| Non-Employed | 0.963 | 0.884 | 0.910 | 0.740 | 1.140 | 0.577 | 0.977 | 0.929 | 0.901 | 0.717 | 1.139 | 0.582 |
| Info missing | 0.747 | 0.191 | 1.000 | 1.000 | 1.225 | 0.236 | 0.751 | 0.197 | 0.998 | 0.994 | 1.219 | 0.249 |
| *Education (Higher is ref.)* | | | | | | | | | | | | |
| Middle | 0.907 | 0.543 | 1.719 | 0.013 | 0.863 | 0.341 | 0.904 | 0.530 | 1.692 | 0.014 | 0.863 | 0.336 |
| Lower | 0.915 | 0.623 | 1.627 | 0.023 | 1.183 | 0.246 | 0.919 | 0.642 | 1.643 | 0.020 | 1.186 | 0.241 |
| *Interaction* | | | | | | | | | | | | |
| *Income * Relationship Happiness* | | | | | | | | | | | | |
| Middle income * Relationship Happiness | 1.104 | 0.550 | 1.186 | 0.377 | 0.995 | 0.960 | | | | | | |
| Low income * Relationship Happiness | 1.065 | 0.669 | 1.072 | 0.623 | 1.001 | 0.996 | | | | | | |
| *Employment status * Relationship Happiness* | | | | | | | | | | | | |
| Unemployed * Relationship Happiness | | | | | | | 1.256 | 0.304 | 0.939 | 0.706 | 0.997 | 0.984 |
| Non-Employed * Relationship Happiness | | | | | | | 0.956 | 0.788 | 1.040 | 0.814 | 1.061 | 0.598 |
| *Partner employment status * Relationship Happiness* | | | | | | | | | | | | |
| Unemployed * Relationship Happiness | | | | | | | | | | | | |
| Non-Employed * Relationship Happiness | | | | | | | | | | | | |
| Info missing * Relationship Happiness | | | | | | | | | | | | |
| *Education * Relationship Happiness* | | | | | | | | | | | | |
| Middle * Relationship Happiness | | | | | | | | | | | | |
| Lower * Relationship Happiness | | | | | | | | | | | | |
| Constant | 0.015 | 0.000 | 0.005 | 0.000 | 0.011 | 0.000 | 0.015 | 0.000 | 0.005 | 0.000 | 0.011 | 0.000 |

**Table A1.** Continued

| | Interaction between Partner employment status * Relationship happiness | | | | | | Interaction between Education * Relationship happiness | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Marriage | | Conception | | Separation | | Marriage | | Conception | | Separation | |
| | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p | RRR | p |
| Relationship Happiness | 1.378 | 0.000 | 0.982 | 0.816 | 0.940 | 0.219 | 1.352 | 0.001 | 0.807 | 0.045 | 0.944 | 0.363 |
| *Household Income (tertiles) (highest tertile is ref.)* | | | | | | | | | | | | |
| Middle income | 0.824 | 0.307 | 0.920 | 0.734 | 1.179 | 0.296 | 0.832 | 0.336 | 0.949 | 0.833 | 1.173 | 0.308 |
| Low income | 0.667 | 0.063 | 1.115 | 0.645 | 0.911 | 0.611 | 0.678 | 0.074 | 1.096 | 0.696 | 0.880 | 0.476 |
| *Employment status (employed is ref.)* | | | | | | | | | | | | |
| Unemployed | 1.132 | 0.683 | 0.901 | 0.719 | 0.963 | 0.896 | 1.082 | 0.799 | 0.988 | 0.965 | 0.971 | 0.919 |
| Non-Employed | 1.279 | 0.245 | 0.741 | 0.239 | 1.047 | 0.828 | 1.254 | 0.279 | 0.728 | 0.213 | 1.083 | 0.703 |
| *Partner employment status (employed is ref.)* | | | | | | | | | | | | |
| Unemployed | 0.480 | 0.077 | 0.976 | 0.938 | 1.393 | 0.192 | 0.509 | 0.086 | 0.969 | 0.917 | 1.534 | 0.071 |
| Non-Employed | 0.893 | 0.695 | 0.816 | 0.524 | 1.103 | 0.683 | 0.971 | 0.910 | 0.933 | 0.808 | 1.142 | 0.571 |
| Info missing | 0.757 | 0.212 | 1.009 | 0.975 | 1.286 | 0.141 | 0.746 | 0.188 | 1.008 | 0.975 | 1.232 | 0.222 |
| *Education (Higher is ref.)* | | | | | | | | | | | | |
| Middle | 0.905 | 0.537 | 1.671 | 0.016 | 0.866 | 0.349 | 0.874 | 0.471 | 1.665 | 0.015 | 0.871 | 0.368 |
| Lower | 0.914 | 0.620 | 1.655 | 0.019 | 1.161 | 0.311 | 0.925 | 0.684 | 1.638 | 0.019 | 1.170 | 0.284 |
| *Interaction* | | | | | | | | | | | | |
| *Income * Relationship Happiness* | | | | | | | | | | | | |
| Middle income * Relationship Happiness | | | | | | | | | | | | |
| Low income * Relationship Happiness | | | | | | | | | | | | |
| *Employment status * Relationship Happiness* | | | | | | | | | | | | |
| Unemployed * Relationship Happiness | | | | | | | | | | | | |
| Non-Employed * Relationship Happiness | | | | | | | | | | | | |
| *Partner employment status * Relationship Happiness* | | | | | | | | | | | | |
| Unemployed * Relationship Happiness | 0.791 | 0.387 | 1.371 | 0.225 | 0.903 | 0.433 | | | | | | |
| Non-Employed * Relationship Happiness | 1.172 | 0.428 | 0.780 | 0.104 | 0.920 | 0.549 | | | | | | |
| Info missing * Relationship Happiness | 0.878 | 0.416 | 1.007 | 0.966 | 1.223 | 0.101 | | | | | | |
| *Education * Relationship Happiness* | | | | | | | | | | | | |
| Middle * Relationship Happiness | | | | | | | 1.073 | 0.667 | 1.413 | 0.022 | 1.045 | 0.663 |
| Lower * Relationship Happiness | | | | | | | 0.957 | 0.773 | 1.262 | 0.108 | 0.980 | 0.829 |
| Constant | 0.015 | 0.000 | 0.005 | 0.000 | 0.011 | 0.000 | 0.015 | 0.000 | 0.005 | 0.000 | 0.011 | 0.000 |

**Table A1:** Analysis 1: Interaction between socioeconomic indicators and relationship quality. Transitions from cohabitation to marriage, separation or conception, competing risk hazard models. Relative Risk Ratios and p-values.

**Source:** UKHLS 2009-2018. Controlled for gender, age of youngest child (for last model only), relationship history, number of children before relationship, country, ethnicity, age, relationship duration, wave, an

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