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## Is Early Partnership Formation Instrumental for Fertility in Germany?

### Influences of Fertility Orientations on Partnership Transitions

Okka Zimmermann

**Abstract:** Using panel data from childless respondents of the German Family Panel (pairfam, n=3,802 respondents), this paper investigates whether fertility orientations (biographical orientations with respect to fertility) influence the risk of different partnership transitions among German men and women over the age of 18 (for n=14,572 observation periods between two panel waves). Significant influences are found for both gender and partnership transition types, and are generally stronger among men than women and for the transition to a coresidential as opposed to a romantic partnership. Uncertainty about anticipated fertility has a stronger negative impact on transition risks among men than among women.

Results strongly suggest that the early stages of the partnership formation process are instrumental in terms of future fertility in Germany, at least to some degree. This indicates that a more comprehensive conceptualisation and analysis of fertility within the life course paradigm (as suggested by *Huinink/Kohli* 2014) should consider the impacts of fertility orientations on life course events in other dimensions, especially among men. Viewed more broadly, the results also underline two factors: the role of agency in coordinating life course dimensions in time and space in order to maximise individual welfare; and the importance of considering the impacts that anticipation of future life course events will have, as suggested by different theoretical approaches.

**Keywords:** Fertility · Partnership · Coresidential partnership · Life course · Biographical orientations

## 1 Introduction

The link between partnership formation and childbearing within individual lives is to some extent unclear. One assumption of life course theory (e.g. *Bernardi et al.* 2019; *Huinink/Feldhaus* 2009; *Mayer* 2019), but also of theories on individualisation (e.g. *Beck* 1992) as well as differentiation of private life (e.g. *Meyer* 1992, 2014), is that individuals increasingly have to coordinate requirements and goals across life course domains which have become more independent of one other. Empirical research is therefore required to establish just how strong the link between two different life course dimensions (e.g. partnership and childbearing) is within a specific context or group.

As far as Germany in particular is concerned, a comparatively strong link exists between marriage and childbearing, with childbirth outside marriage having recently risen to about a third in 2019 (*Statista* 2020). In comparison with other countries, this figure is still low (*Eurostat* 2018). Furthermore, there is a strong norm prevalent in Germany of two children being the ideal family size (*Ruckdeschel et al.* 2018; *Schröder et al.* 2016). The German context is thus specific insofar as the meaning of childbearing is concerned, because this act is tied more strongly to marriage (and thus to the strong institutionalisation of a partnership) than in many other European countries (*Nave-Herz* 2015; *Konietzka/Kreyenfeld* 2017; *Lappegård et al.* 2017). All three of the latter studies also emphasise that marriage is still considered to be the most preferable setting for childbearing in Germany, and that it is indeed often the intention of having children which leads to the intention to marry. However, the strong link between childbearing and marriage in Germany indicates that the link between childbearing and other forms of partnership is less robust.

Today, a romantic non-coresidential partnership in Germany is typically followed first by a coresidential partnership, then by marriage, and finally by childbearing (*Konietzka/Zimmermann* 2020; *Kopp et al.* 2010). These forms of partnership therefore often constitute stages within a differentiated process of partnership and family formation. However, given the existence of other forms of non-coresidential and coresidential partnership (e.g. *Lois* 2012; *Hiekel et al.* 2014, 2015; *Ostner* 2001; *Cherlin* 2004), the link between coresidential and non-coresidential partnerships on the one hand and childbearing on the other hand is not completely clear. Furthermore, a high proportion of men and women remain childless in Germany (around 20 percent, *Kreyenfeld/Konietzka* 2017, leading, among other things, to low total fertility rates). This suggests that family formation has become just one of the options available for people's individual life courses. Accordingly, *Meyer* (1992, 2014) hypothesises that individuals increasingly choose between different principles in the way they organise their private life (child-centred, partnership-centred or individualistic). Similarly, *Aries* (1980) argues that, since the 1960s, raising children is no longer the core aim of couples but is instead merely one method of potential self-realisation and self-fulfilment within couple relationships (see also *Zaidi/Morgan* 2017). *Keddi* (2006, 2010) emphasises that this is particularly the case among young women, for whom a variety of different role models exist, ranging from the traditional homemaker to a focus on a professional career. Taken

together, it remains unclear how close the link between early partnership formation and childbearing actually is. As far as Germany in particular is concerned, both choices could be largely independent of each other.

To my knowledge, there is no empirical research to date investigating how anticipations regarding future fertility influence the partnership formation processes. To fill this research gap, this study uses prospective data from  $n=3,802$  childless respondents ( $n=14,572$  observation periods between waves) of the German Family Panel (pairfam). It analyses how anticipations of future fertility collected in one wave of the panel influence the risk of transitioning to a romantic or coresidential partnership by the next wave of the panel, using Cox regression models. It is assumed that the anticipation of fertility in general, as well as the anticipated timing of fertility, increase transition risks.

## 2 Background and hypotheses

### 2.1 Theoretical background

Recent theoretical approaches within life course research place more emphasis on agency, conceptualizing actors as actively trying to maximise their individual welfare/well-being through coordinated action across various life course domains and time (e.g. *Bernardi et al.* 2019; *Buhr/Huinink* 2014; *Huinink/Feldhaus* 2009; *Mayer* 2019). These concepts resonate with theories on individualisation (e.g. *Beck* 1992; *Ehrhardt/Kohli* 2011) and institutionalisation of the life course (e.g. *Kohli* 1986, 2007), which assume an increasing need for reflexive planning within individual life courses (biographisation). Similarly, the increasing importance of post-materialistic goals, such as self-realisation, that are assumed in different theoretical approaches (e.g. *van de Kaa* 2001; *Lesthaeghe* 2010, 2011; *Inglehart/Welzel* 2005) suggests that the role of actors (i.e. the "selves") needs to be taken into account more seriously. Concepts of the growing differentiation of private lives (*Meyer* 1992, 2014) also highlight the fact that individuals are likely to pursue different goals within their private lives and thus need to actively decide which goals to pursue and how. Finally, *Becker's* (1981) seminal work stresses the importance of considering economic constraints within households and families. Here, families and individuals, among other parties, are forced to weigh up different (life course) goals and to consider the consequences that pursuing goals in one life course domain (e.g. childbearing) will have on other life course domains (e.g. working life, such as in terms of opportunity costs).

In this context, *Huinink* and *Kohli* (2014) highlighted the need to conceptualise and analyse fertility within the life course paradigm in a more comprehensive manner. In their eyes, this could help to improve understanding of how fertility relates to developments in other life course domains, for example partnership and working life. *Huinink* and *Feldhaus* (2009: 317-318) furthermore assume that the "shadow of the future" – in the form of expectations, intentions or desires for core family-related events like childbirths – is likely to have a significant influence on

decision-making in the near future. They argue that individuals try to take actions which lead to life course situations that are compatible with longer-term or general life course goals. Events in one life course dimension can thus be instrumental for reaching goals in other life course dimensions (*Huinink/Feldhaus* 2009: 309). In the case of fertility, individuals often assume a stable partnership (ideally in a shared apartment, i.e. coresidential) to be a prerequisite for childbearing (e.g. *Berrington* 2001, 2004; *Rijken/Thomson* 2011; *Spéder/Kapitány* 2009).

Empirical results on this question could also help to enhance our understanding of life course dynamics in general, and in particular interdependencies between life course dimensions, as suggested in established works by *Elder* (1985) and *Levy* (1977) for example. They could also help to improve understanding of the role played by individual strategies in maximizing well-being within life courses and thus contribute to the more general discussion about the role of agency and structure with respect to life course outcomes (*Settersten/Gannon* 2005; *Huinink/Feldhaus* 2009; *Mayer* 2019).

## 2.2 Fertility orientations

Some strands of theory (e.g. *Heckhausen/Heckhausen* 2010, 2018; *Ajzen* 1991; *Miller* 1994; *Beckmann/Heckhausen* 2018) suggest that a distinction should be drawn between expectations (subjective assessment of life course situations), intentions (goals or plans) and desires (internal individual preferences). There is, however, evidence that individuals do not clearly differentiate between these concepts (*Wilson/Oeppen* 2003; *Davis/Warshaw* 1992; *Ní Bhrolcháin/Beaujouan* 2019). Instead, they are seemingly intertwined and are likely to be represented in an individual's mind as more diffuse biographical orientations (*Huinink/Kohli* 2014; *Van de Kaa* 2001). I will term these *fertility orientations* when they refer to anticipated future fertility. Prior research on different topics, for example by *Willoughby* (2014), *Carroll et al.* (2007), *Born* (2001), *Krüger* (2014) and *Wagner et al.* (2019a), showed that biographical orientations for the longer-term influence the present and the shorter-term in many different dimensions of the life course.

I conceptualise fertility orientations to be part of biographical orientations. As suggested by *Huinink and Kohli* (2014: 1302-1303) these are established individually, based on beliefs, experiences and preferences, and influence further life course events. In accordance with the concepts established by *Van de Kaa* (2001), I also assume that individual orientations specifically with respect to fertility (but potentially also to other aspects) guide individuals in their decision-making across the life course, thus helping to form an individual lifestyle and an individual identity. The concept of biographical orientations is somewhat different to the concepts of schemas and life course scripts (*Johnson-Hanks et al.* 2011; *Huinink/Kohli* 2014; *Macmillan/Copher* 2005) because it reflects individual desires and intentions and is hence generated within individual minds. In contrast, schemas and scripts are defined as generally accepted ways of thinking and acting, generated and reproduced by reiterations of behaviour. They exist independently of individuals and are therefore part of the social structure. Biographical orientations may help

individuals to coordinate actions within multiple time dimensions and periods within the life course, so that decisions in the present or in one life course dimension do not hinder goal attainment in the future or in other life course dimensions (*Huinink/Kohli 2014; Macmillan/Copher 2005*).

I conceive fertility orientations as containing expectations, intentions and desires but being more general than these. I think of fertility orientations as anticipations, estimations, assumptions, prospects or forecasts of future fertility and as multidimensional constructs that encompass a number of different aspects (e.g. *Ajzen 1991; Barrett et al. 2004; Miller 1994; Santelli et al. 2009*). I distinguish between general orientations (no children vs. any number of children at any time) and a specific orientation with respect to the timing of fertility. These aspects are mentioned in several of the studies listed above and can therefore be regarded as key dimensions of fertility orientations. Other dimensions might exist, for instance with respect to parity or the preferred circumstances for childbearing. Findings from earlier research (*Ruckdeschel et al. 2018; Schröder et al. 2016*) suggest that most respondents will anticipate having two children, because of the strong two-child norm in Germany. Therefore, although it may be different in other countries, including parity into the analysis in Germany does not seem useful.

Fertility orientations are often geared towards the longer term and the inherent goals cannot be achieved within short time frames, especially for those individuals without a partner. The influence of fertility orientations on goals in other life course dimensions might even be greater than on fertility itself. This might be due to the fact that fertility intentions are frequently corrected if individuals grow older, not only if the desired circumstances have not yet been achieved (*Verweij et al. 2020*). Accordingly, previous studies demonstrated that fertility intentions for the near future increase the likelihood of residential relocation (*Clark/Onaka 1983; Michielin/Mulder 2008; Vidal et al. 2017*). Among individuals in their mid-twenties or thirties, the intention to have a child also influences the likelihood that a person will move in with their partner (*Wagner et al. 2019a/b*). Earlier studies also demonstrated that fertility intentions and the related expected family tasks influence the selection of professional pathways among women long before children are born (*Born 2001; Krüger 2014; Zimmermann 2019*).

Recent theoretical approaches assume that individuals construct fertility intentions and preferences in the interview situation and are strongly influenced by specific conditions and societal circumstances at the time of the interview (e.g. *Bachrach/Morgan 2013; Ní Bhrolcháin/Beaujouan 2019; Philipov/Bernardi 2011; Rackin/Bachrach 2016; Schaeffer/Thompson 1992*). Furthermore, they emphasise that fertility orientations are influenced by individual experiences and changes in one's own life course situations, as well as those of significant others, and are therefore likely to be adapted continuously throughout the life course (*Gray et al. 2013; Kuhnt/Trappe 2016; Kuhnt et al. 2020; Miller 1994; Morgan 1981; Smith et al. 2020; Verweij et al. 2020*). Consequently, these approaches and results suggest that fertility orientations should only be used when forecasting developments in the near future, not events or developments over the longer term. Panel data where the interval between data collections is short (e.g. one year, as used in the German

Family Panel) is therefore especially suited to testing the influence of fertility orientations on partnership behaviour in the near future.

Prior theoretical concepts and empirical results also suggest that "being uncertain" is a crucial state and stage within the fertility decision-making process, and should be taken into account in research (*Bernardi et al.* 2015; *Berrington* 2004; *Bachrach/Morgan* 2013; *Ní Brolcháin et al.* 2010; *Kuhnt et al.* 2020; *Miettinen/Paajanen* 2005; *Morgan* 1981, 1982; *Ní Brolcháin/Beaujouan* 2019; *Schaeffer/Thompson* 1992; *Sobotka* 2009). Prior results suggest that uncertainty about future fertility is high in particular among those individuals who are unmarried, partnerless and/or childless (*Berrington* 2004; *Kuhnt/Buhr* 2016; *Kuhnt et al.* 2020; *Ní Brolcháin/Beaujouan* 2011, 2015; *Sobotka* 2009) and that the prevalence of uncertainty differs by gender (*Berrington* 2004; *Kuhnt/Buhr* 2016; *Miettinen/Paajanen* 2005). As a result, in my analysis of fairly young, childless respondents, it is crucial to consider uncertainty as a category since it is likely to be mentioned frequently and indicates an important stage or step within the range of potential fertility orientations and their development across time.

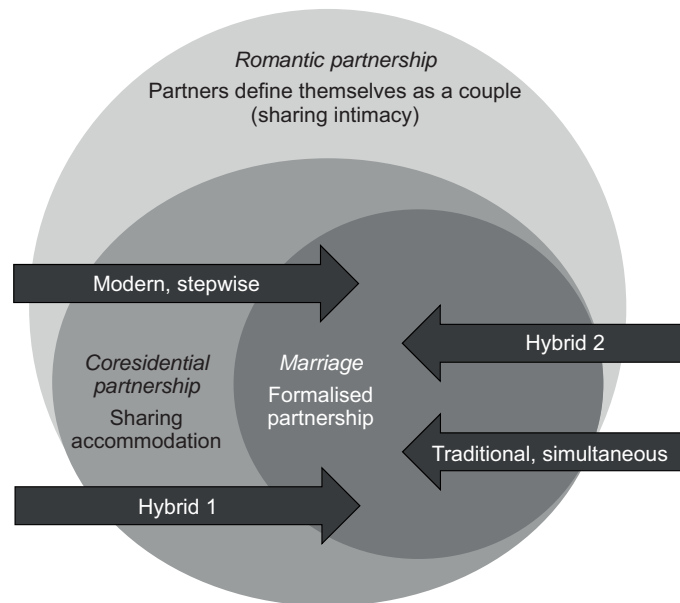
### 2.3 Forms of partnership and partnership formation

An example of an event in one life course dimension being instrumental for another life course dimension is a partnership (ideally coresidential), which is often considered a prerequisite for childbearing (see for example *Rijken/Thomson* 2011; *Spéder/Kapitány* 2009; *Berrington* 2001). For the most part, Germans continue to regard marriage as a necessary or at least very useful prerequisite for childbearing (*Konietzka/Kreyenfeld* 2017). As *Nave-Herz* (2015) points out, within the context of "responsible parenthood", individuals often only consider marriage as an option if they are expecting children ("child-oriented marriage"). Marriage is thus de-institutionalised, i.e. it is no longer mandatory for couples, nor does it continue to hold the same privileges that it once did compared with other partnership and family forms (*Cherlin* 2004; *Coontz* 2004; *Lauer/Yodanis* 2010; *Thornton et al.* 2007; *Walker* 2016).

The differentiation of partnership forms means that individuals often go through a number of stages in the process of institutionalising a partnership (*Kopp et al.* 2010). In recent years, this has mainly occurred in the order described below (*Hoppmann/Zimmermann* 2018; *Konietzka/Zimmermann* 2020). Individuals first find a partner, with whom a steady dating or Living-Apart-Together-partnership (LAT, *Duncan/Phillips* 2011; *Levin/Trost* 1999) is established. From now on, I will refer to this stage of the partnership formation process as entering, starting or transitioning to a *romantic partnership*. A romantic partnership is characterised by the fact that the partners define themselves as a couple and typically view intimacy as exclusive to their relationship.

After a while, partners might opt to share an apartment, i.e. coreside. From now on, I will refer to this stage of the partnership formation process as entering, starting or transitioning into a *coresidential partnership*. Marriage is often the final stage in the institutionalisation process. Historically, the stages would often occur



**Fig. 1:** Illustration of partnership forms and transition patterns

Source: Own design

at the same time (i.e. the date on which a couple married also marked the start of their co-residential and romantic partnership) and this can still happen today; in this case, the date of transition to a romantic partnership, co-residential partnership and marriage is the same. The transition to marriage is not considered in this study because the number of members in my sample undergoing the transition to marriage within the period analysed was too small.

Figure 1 shows that marriage, romantic partnerships and co-residential partnerships are not mutually exclusive but instead build upon one other. Marriage also implies the existence or start of a romantic and co-residential partnership, while a romantic partnership is a prerequisite for a co-residential partnership. The forms of partnership can be started simultaneously ("traditional" pattern) or consecutively ("modern" pattern of gradual institutionalisation). Hybrid forms of transitioning are also conceivable, in which either the transition to a romantic and co-residential partnership happens at the same time (hybrid 1) or marriage and transition to co-residence happen at the same time (hybrid 2). If the transition to a romantic or co-residential partnership takes place at the same time as any of the other events, these events shall still be counted as transitions to a romantic or co-residential partnership in the context of this research and the relevant respondents will thus form part of the respective data sets (see also the section on methodology).<sup>1</sup>

<sup>1</sup> Please note that the hypothetical case of a couple getting married before starting a co-residential union hardly appears in empirical data and is therefore not considered here.



## 2.4 Hypotheses

I assume that if fertility orientations include anticipations of fertility in the near future, the search for a partner and efforts to establish and institutionalise a partnership may be intensified. As a result, my expectation is that the number of years to pass until the assumed time of the first birth will have a strong and negative impact on the risk of transitioning to a romantic or coresidential partnership (hypothesis 1). Because changes in individual and societal circumstances are unpredictable, I also anticipate finding a high degree of uncertainty as regards expected fertility (*Berrington/Pattaro 2014; Ní Bhrolcháin/Beaujouan 2019; Verweij et al. 2020*). I assume that individuals who are uncertain about fertility in the future will be less likely to transition to a romantic or coresidential partnership than men or women with a clearer vision of their future (hypothesis 2). Furthermore, the likelihood of transitioning to a romantic or coresidential partnership ought to be even less among individuals who are not planning to have children at all (hypothesis 3) as the latter may prefer a greater degree of freedom in their lives. Hypothesis 3 reflects "general" fertility orientations (i.e. whether respondents on the whole anticipate having children, regardless of the assumed timing).

Among younger people, who make up the larger share of my sample, non-coresidential romantic partnerships might sometimes be less serious and be only trial partnerships (*Lois 2012*). Additionally, a coresidential partnership is regarded a specific requirement for childbearing (*Berrington 2001; Rijken/Thomson 2011; Spéder/Kapitány 2009*). I therefore expect all of the above mentioned factors (number of years until assumed fertility, uncertainty about anticipated fertility, general fertility orientations) to influence the transition to coresidential partnerships more strongly than the transition to a romantic partnership (hypothesis 4).

## 3 Methodology

### 3.1 Data and variables

I use data from waves 1-10 of the German Family Panel (pairfam, *Huinink et al. 2011*, data collected between 2008 and 2018, release 10.0; *Brüderl et al. 2019*). The *biopart* file contains information on partnership events on a monthly basis, which I combined with the information from the attitudinal and sociodemographic data collected in different waves (files anchor1-anchor9). Table 1 describes how the independent variables were measured and recoded for the analysis. I used questions on the "realistic" (not the "ideal") number and timing of births because answers are likely to be based on an evaluation of the preconditions or life course circumstances (i.e. expectations in expectancy-value models, *Ajzen 1991; Heckhausen/Heckhausen 2010, 2018; Miller 1994*). Furthermore, I assume that answers to these questions also reflect individual desires (internal individual preferences) and intentions (concrete goals or plans). The "realistic" number and timing of births therefore provide the best fit with the concept of fertility orientations. I merged the two categories "I'm

**Tab. 1:** Measurements and recoding of aspects of fertility orientations for all childless respondents

| Aspect measured                   | Question & variable   | Possible responses  | Transformations of variables  |
|-----------------------------------|---|---|---|
| (1) General fertility orientation | "When you think realistically about having children, how many children do you think you will have?" (waves 1-2, frt6)<br>"When you think realistically about having children, how many biological or adoptive children do you think you will have?" (waves 3-9, frt26) <sup>1</sup> | "one child", "two children", "three children", "four or more children", "no children", "I'm not sure", "I have not thought about that". | Categories "no children", "I'm not sure" and "I have not thought about that" are used to form the categories "no children" and "uncertain" of the independent variable.<br><br>Note: This variable was used as a filter variable. Only respondents who anticipate having at least one child were asked about what they perceive to be a realistic time frame (frt9)   |
| (2) Timing                        | "When you think realistically about having children, how old do you think you will be when you have your first child?" (frt9) <sup>2</sup>  | age in years or "I have not thought about that".  | "uncertain" is inserted if expressed either in this (frt9) or the prior (filtering) question on the number of children anticipated (frt6/frt26; "I'm not sure" or "I have not thought about that"). "no children" is inserted if mentioned in the previous question on parity. Calculation of years until expected 1 <sup>st</sup> childbirth by subtracting the age of respondents; categories "in the next 4 years", "in 5-6 years", "in 7-8 years", "in 9-10 years" and "in more than 10 years" are formed based on the distribution of respondents. |

Note: As only childless respondents are included in the analysis, variations of the questions (next instead of first child, additional children instead of children) are not relevant for the samples.

<sup>1</sup> German original: "Wenn Sie einmal realistisch über eigene Kinder nachdenken: Wie viele Kinder denken Sie, werden Sie haben?" (waves 1-2) "Wenn Sie einmal realistisch über Kinder nachdenken: Wie viele leibliche Kinder oder Adoptivkinder, denken Sie, werden Sie haben?" (waves 3-9); answer options: "Ein Kind" / "Zwei Kinder" / "Drei Kinder" / "Vier Kinder und mehr" / "Ich bin mir nicht sicher" / "Darüber habe ich mir noch keine Gedanken gemacht" / "Kein Kind".

<sup>2</sup> German original: "Wenn Sie einmal realistisch über eigene Kinder nachdenken: In welchem Alter denken Sie, werden Sie Ihr erstes Kind bekommen?", answer options: "Mit \_\_\_ Jahren" / "Darüber habe ich mir noch keine Gedanken gemacht".

Source: German Family Panel Scales and Instruments Manual, Release 10.0 (*Thönnissen et al.* 2018), own considerations.

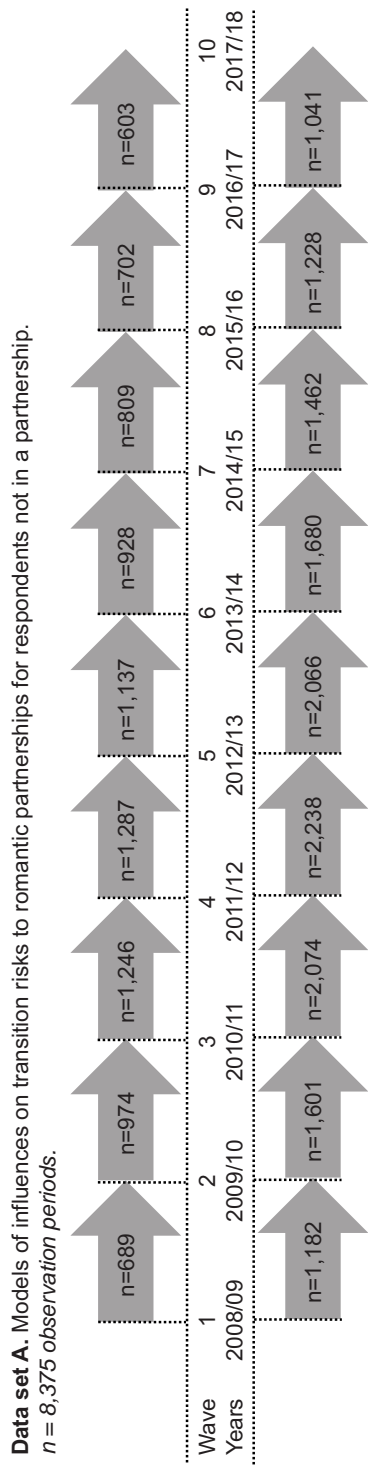
not sure" and "I have not thought about that" since the first option was only chosen by a small number of the young, partnerless individuals included in the sample. I also believe that, for the purpose of my analysis, these two categories actually have the same meaning: the respondent is not (yet) clear about his/her fertility intentions.

As described above, I expect that fertility orientations may change based on the experiences of the respondents. It is therefore useful to model transition risks based on fertility-related attitudes surveyed not long before the events occur, if they do in fact occur at all. I meet this requirement by analysing transition risks between each pair of waves of the panel data provided. Thus, I model the influences that attitudes measured in the interview of any wave  $i$  have on transition risks until the next interview in wave  $i+1$ . The observation periods are around twelve months long, but differ slightly in length according to the exact timing of the interviews of each respondent within the waves. The *biopart* file was in this sense used to create a data set A, including all partnerless and childless respondents in wave  $i$  (1 to 9) in order to analyse transitions to a romantic or coresidential partnership until the subsequent wave  $i+1$ . An additional data set B includes all respondents without a coresidential partnership or children, regardless of whether they are in a romantic partnership, in order to analyse transitions to coresidential partnership. Married individuals are usually in a romantic partnership and co-reside and are therefore not part of the samples. Individuals under the age of 18 (formal adulthood in Germany) are not included in the sample because they are not yet able to take full responsibility for any children of their own or other important life course decisions: their fertility orientations are therefore expected to be less meaningful.

Respondents who participated in more than two waves in the German Family Panel might be included more than once in the data sets. Observation periods for which there was no information on the independent and control variables, or for which respondents already had a child at the beginning of the analysis period, were dropped. Figure 2 provides an overview of the distribution of the observation periods between waves 1 and 10 of the German Family Panel and the total number of observations in each of the data sets.

Transition risks to a romantic and coresidential partnership are the dependent variable; see chapter 2 for details on the definition of these forms of partnership. If these or other partnership transitions occur within the same month, both transitions are assumed to have happened. I have integrated the following sociodemographic variables as covariates in the models, for which prior research or theoretical considerations proved or suggested influences on partnership formation. The region (East/West Germany) is important because family formation cultures are still very different in both parts of the country (e.g. Raab 2017). The size of the community (five categories) is included since this has a considerable influence on the partners that are available within a reachable distance, i.e. the partnership market. The migration status (second generation migrant or not, with first generation migrants having been excluded) is relevant because it can also determine partnership and family formation values as well as social contacts. The activity status (in education, regular full-time employment, other form of employment, not employed; recode of variable *casprim*) is relevant as prior research also showed that being in education, precarious

**Fig. 2:** Overview of the distribution of observation periods through waves 1 to 10 of the German Family Panel



Source: Own design

employment or being unemployed are factors that can influence partnership transitions (e.g. *Andersen/Özcan 2021; Heintz-Martin/Zabel 2019; Liefbroer et al. 2015; Schmitt 2021*). Partnership transitions are likely to be influenced by age (e.g. *Gray et al. 2013; Wagner et al. 2019a/b*). Health is an important predictor of the likelihood of entering cohabitation (*Brown et al. 2012*) and is therefore included. The relationship status (single, romantic partnership; only in models analysing transition risks to a coresidential partnership) is necessary as a covariate because individuals in romantic partnerships are more likely to transition to a coresidential partnership than those without a partner (*Kopp et al. 2010*).

### 3.2 Analytical approach

I use event history analysis in Stata to analyse what influence the different aspects of the fertility orientations have on the transition to romantic or coresidential partnerships. I apply multi-level Cox proportional hazard regression models for single destinations (*Cox 1972*). After calculating the regression models, I tested the proportional hazards assumption based on *Schoenfeld* residuals (*Schoenfeld 1982*). The influences that different aspects of fertility orientations measured in wave  $i$  (1 to 9) have on the risk of transitioning to a romantic partnership or institutionalizing the partnership further by way of coresidence can be identified using Cox models. For those respondents who did not experience the respective transition until wave  $i+1$ , the data is indicated as being censored at the time of the interview in wave  $i+1$  and included in the analysis.

I accounted for frailty of observations from the same individual (by grouping these observations using Stata's "shared" option, i.e. applying a multi-level model) and for period effects using a variable on the wave at the beginning of the observation period as a control variable. I can therefore control for effects of changing institutional circumstances (e.g. changes in housing costs, economic upswing and downturn that might affect fertility intentions, see *Comolli 2021*). I included the independent variable in a categorical form, so that the category "uncertain" could be kept. For a robustness check, I excluded uncertain respondents so as to be able to create a continuous independent variable.

Importantly, using panel data for the analysis helps to avoid causality problems (*Brüderl 2010*) because the independent variable (in this case the anticipation of fertility) is measured before the dependent variable (in this case a dependent event, namely the transition to a romantic or coresidential partnership) within the chronological life course of individuals. Specifically, I use the anticipation of fertility (estimates of "realistic" fertility) in wave  $i$  to forecast partnership events until wave  $i+1$ , which are retrospectively reported in wave  $i+1$  (i.e. about a year after the fertility orientations). Working on the assumption that the forecasting of future events (in this case partnership transitions) is always very uncertain and therefore unlikely to influence anticipations of fertility measured before such transitions, problems of reverse causality are therefore improbable. In the limitations, I discuss the unlikely circumstances under which reverse causality may still occur within this analytical framework and the consequences thereof for my results.

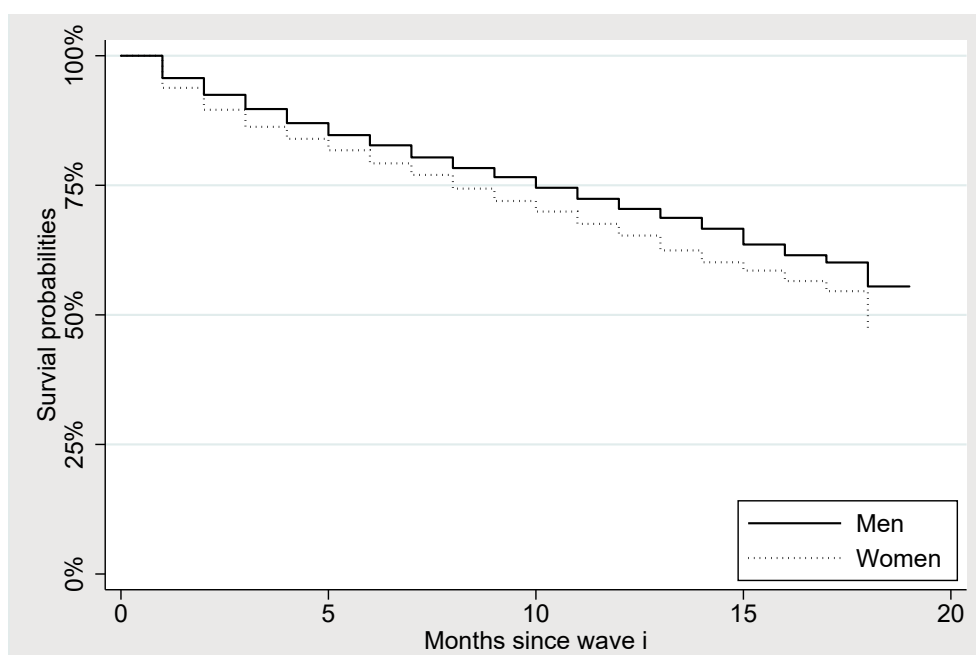
## 4. Results

### 4.1 Descriptive findings

If respondents are partnerless in wave  $i$ , the proportion of them transitioning to a romantic partnership by the next wave  $i+1$  is slightly less than half (Fig. 3). A quarter of respondents without a coresidential partnership in wave  $i$  transition to a coresidential partnership by wave  $i+1$  (Fig. 4). In line with prior results, women experience partnership transitions at a slightly faster rate than men, which also explains why there are more men than women in my data sets.

Table 2 displays descriptive results for the independent and control variables for the two data sets for all observation periods, with many respondents included in the sample more than once. In more than a third of the observation periods, the assumption among respondents was that it would be seven years or more before they have children (measured at the beginning of the observation period). Depending on sex and partnership status, the anticipation among respondents in around a fifth of all observation periods is that they will have children within the next four years (i.e. in the near future). For many of the observation periods, the

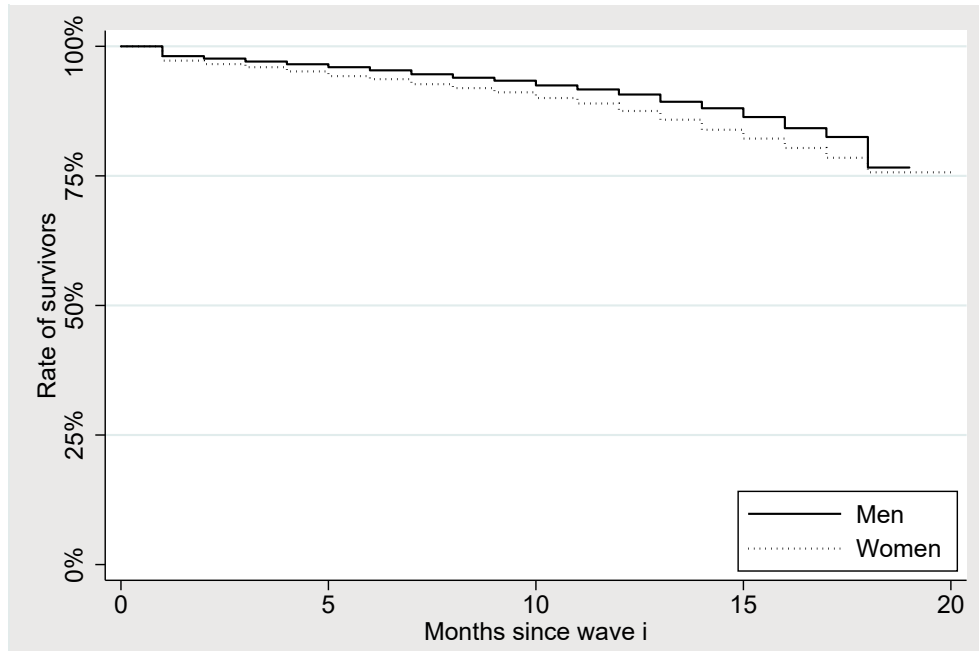
**Fig. 3:** Transition risks to a romantic partnership



Kaplan-Meier survival estimates for the transition to a romantic partnership between waves  $i$  and  $i+1$ . Based on 8,375 observation periods (3,405 of women, 4,970 of men) of 2,854 respondents (1,238 women, 1,616 men).

Source: German Family Panel waves 1-10, own calculations.

**Fig. 4:** Transition risks to a coresidential partnership



Kaplan-Meier survival estimates for the transition to a coresidential partnership between waves  $i$  and  $i+1$ . Based on 14,572 observation periods (6,503 of women, 8,069 of men) of 3,802 respondents (1,753 women, 2,049 men).

Source: German Family Panel waves 1-10, own calculations.

respondents live in small towns (fewer than 20,000 inhabitants). Respondents are still in education at the beginning of more than half of the observation periods. This is likely a result of the fact that the average age is low (24 to 25 years depending on the sub-sample), with there being many young respondents in the sample. This can in turn be attributed to most respondents among the older cohorts having already experienced the transitions examined and thus being excluded from the data sets. At the beginning of around a third of the observation periods, the respondents reported being in regular full-time employment, with other types of employment and non-employment accounting in equal measure for the remainder of the observation periods. Depending on sex and partnership status, the respondents in 12-15 percent of the observation periods were 2<sup>nd</sup> generation migrants and nearly a quarter of the observation periods stem from respondents from East Germany. At the beginning of some 30 percent of the observation periods, the male respondents in question reported poor health. This figure was higher for women, with poor or satisfactory health being reported at the beginning of 37-38 percent of observation periods.



**Tab. 2:** Descriptive results (measured at the beginning of the observation periods)

|   | Data Set A            |                     | Data Set B            |                     |
|---|-----------------------|---------------------|-----------------------|---------------------|
|   | Women<br>(3,405 obs.) | Men<br>(4,970 obs.) | Women<br>(6,503 obs.) | Men<br>(8,069 obs.) |
| <i>Realistic timing of first child (recode of frt9)</i>             |                       |                     |                       |                     |
| No children   | 526 (15%)             | 495 (10%)           | 742 (11%)             | 703 (9%)            |
| In the next 4 years   | 715 (21%)             | 868 (17%)           | 1,543 (24%)           | 1,682 (21%)         |
| In 5-6 years  | 636 (19%)             | 856 (17%)           | 1,298 (20%)           | 1,498 (19%)         |
| In 7-8 years  | 540 (16%)             | 800 (16%)           | 1,157 (18%)           | 1,283 (16%)         |
| In 9-10 years   | 356 (10%)             | 524 (11%)           | 716 (11%)             | 866 (11%)           |
| In more than 10 years   | 206 (6%)              | 449 (9%)            | 383 (6%)              | 662 (8%)            |
| Uncertain   | 426 (13%)             | 978 (20%)           | 664 (10%)             | 1,375 (17%)         |
| <i>Realistic timing of first child (recode of frt9)<sup>1</sup></i> |                       |                     |                       |                     |
| Years until birth of first child                                    | 6.33                  | 6.84                | 6.23                  | 6.56                |
| <i>Migration background</i>   |                       |                     |                       |                     |
| No migration Background   | 2,889 (85%)           | 4,388 (88%)         | 5,619 (86%)           | 7,143 (89%)         |
| 2 <sup>nd</sup> generation migrants                                 | 516 (15%)             | 582 (12%)           | 884 (14%)             | 926 (11%)           |
| <i>Community size</i>   |                       |                     |                       |                     |
| <5,000  | 399 (12%)             | 796 (16%)           | 815 (13%)             | 1,212 (15%)         |
| 5,000-20,000  | 888 (26%)             | 1,501 (30%)         | 1,865 (29%)           | 2,394 (30%)         |
| 20,000-50,000   | 620 (18%)             | 861 (17%)           | 1,204 (18%)           | 1,444 (18%)         |
| 50,000-100,000  | 308 (9%)              | 429 (9%)            | 564 (9%)              | 737 (9%)            |
| 100,000-500,000   | 586 (17%)             | 751 (15%)           | 1,044 (16%)           | 1,256 (16%)         |
| 500,000+  | 604 (18%)             | 632 (13%)           | 1,011 (16%)           | 1,026 (13%)         |
| <i>Region</i>   |                       |                     |                       |                     |
| West  | 2,712 (80%)           | 3,766 (76%)         | 5,155 (79%)           | 6,280 (78%)         |
| East  | 693 (20%)             | 1,204 (24%)         | 1,348 (21%)           | 1,789 (22%)         |
| <i>Health</i>   |                       |                     |                       |                     |
| Poor/satisfactory (0)   | 1,308 (38%)           | 1,554 (31%)         | 2,420 (37%)           | 2,342 (29%)         |
| Good/very good (1)  | 2,097 (62%)           | 3,416 (69%)         | 4,083 (63%)           | 5,727 (71%)         |
| <i>Activity status (recode of casprim)</i>                          |                       |                     |                       |                     |
| In education  | 1,837 (54%)           | 2,442 (49%)         | 3,763 (58%)           | 4,198 (52%)         |
| Regular full-time employment  | 1,043 (31%)           | 1,734 (35%)         | 1,815 (28%)           | 2,707 (34%)         |
| Other type of employment <sup>2</sup>                               | 297 (9%)              | 393 (8%)            | 536 (8%)              | 606 (7%)            |
| Not employed <sup>3</sup>   | 228 (7%)              | 401 (8%)            | 389 (6%)              | 558 (7%)            |

<sup>1</sup> For a smaller sample as respondents who are "uncertain" are excluded. Sample sizes: Model a (women) – 2,453; Model b (men) – 3,497; Model c (women) – 5,097; Model d (men) 5,991.

<sup>2</sup> Including self-employment, part-time employment, marginal employment, internships, other irregular employment, military and civilian service.

<sup>3</sup> Including maternal or paternal leave, retirement, disability, joblessness.

**Tab. 2:** Continuation

|                           | Data Set A                                    |                     | Data Set B   |                     |
|---------------------------|---|---------------------|--|---------------------|
|                           | All respondents not in a romantic partnership |                     | All respondents not in a coresidential partnership |                     |
|                           | Women<br>(3,405 obs.)                         | Men<br>(4,970 obs.) | Women<br>(6,503 obs.)                              | Men<br>(8,069 obs.) |
| <i>Wave</i>               |   |                     |  |                     |
| 1                         | 261 (8%)                                      | 428 (9%)            | 471 (7%)   | 711 (9%)            |
| 2                         | 402 (12%)                                     | 572 (12%)           | 697 (11%)  | 904 (11%)           |
| 3                         | 499 (15%)                                     | 747 (15%)           | 918 (14%)  | 1,156 (14%)         |
| 4                         | 535 (16%)                                     | 752 (15%)           | 1,040 (16%)  | 1,198 (15%)         |
| 5                         | 473 (14%)                                     | 664 (13%)           | 953 (15%)  | 1,113 (14%)         |
| 6                         | 368 (11%)                                     | 560 (11%)           | 756 (12%)  | 924 (11%)           |
| 7                         | 331 (10%)                                     | 478 (10%)           | 666 (10%)  | 796 (10%)           |
| 8                         | 290 (9%)                                      | 412 (8%)            | 542 (8%)   | 686 (8%)            |
| 9                         | 246 (7%)                                      | 357 (7%)            | 460 (7%)   | 581 (7%)            |
| <i>Partnership status</i> |   |                     |  |                     |
| Not in a partnership      | 100%  | 100%                | 3,405 (52%)  | 4,970 (62%)         |
| In a romantic partnership | –   | –                   | 3,098 (48%)  | 3,099 (38%)         |
| Age (mean)                | 24.99   | 25.41               | 24.03  | 25.00               |

Base: Observation periods (not respondents), i.e. many respondents appear more than once in the results with the answers given in the wave before the observation period reported.

Source: German Family Panel (pairfam) waves 1-10, own calculations.

## 4.2 Cox regression models

Table 3 summarises the results of the different regression models. It is plausible and in line with prior findings for some of the covariates, mainly age, partnership status (for models c and d only) and activity status (for transition in coresidential partnership only) to influence transition rates.

Consistent with the assumption under hypothesis 1, the risk of transitioning to a romantic or coresidential partnership decreased in line with the length of time that needs to pass until the reported "realistic" age of fertility. The transition risks are highest in all models for those who expect to have children within the next four years and decline continuously where respondents anticipate more years to pass before the birth of a child. The sensitivity models (appendix table A1) using a continuous model support the assumption of a clear, and what is likely to be an almost linear effect of the time that respondents expect to pass until childbearing. The effects are even greater for the transition to coresidential partnerships, which is consistent with the results from previous research indicating that coresidence is often considered a prerequisite for childbearing. For women, the effects of fertility anticipated for the near future in terms of transition to a romantic partnership are not significant for the most part; in case the differences are significant, the corresponding confidence

**Tab. 3:** Results of Cox proportional hazard regression models for single destinations (Cox 1972)

| Influences on transition risks of the anticipated time until the birth of 1 <sup>st</sup> child | Transition to romantic partnership (data-set A) |                            | Transition into coresidential partnership (data-set B) |                            |
|---|---|----------------------------|--|----------------------------|
|   | Women<br>(a)                                    | Men<br>(b)                 | Women<br>(c)   | Men<br>(d)                 |
|   | Obs. 3,405                                      | Obs. 4,970                 | Obs. 6,503   | Obs. 8,069                 |
|   | Resp. 1,238                                     | Resp. 1,616                | Resp. 1,753  | Resp. 2,049                |
|   | Trans. 1,274                                    | Trans. 1,564               | Trans. 932   | Trans. 872                 |
|   | Prob>Chi <sup>2</sup> .000                      | Prob>Chi <sup>2</sup> .000 | Prob>Chi <sup>2</sup> .000                             | Prob>Chi <sup>2</sup> .000 |
| No children   | .640**  | .626***                    | .393***  | .522***                    |
| In the next 4 years   | [reference]                                     | [reference]                | [reference]  | [reference]                |
| In 5-6 years  | .807*   | .724***                    | .569***  | .560***                    |
| In 7-8 years  | .833  | .659***                    | .464***  | .421***                    |
| In 9-10 years   | .788  | .613***                    | .344***  | .241***                    |
| In more than 10 years   | .713*   | .563***                    | .312***  | .175***                    |
| Uncertain   | .876*   | .623***                    | .560***  | .521***                    |
| <i>Migration status [reference: no migration background]</i>                                    |   |                            |  |                            |
| 2 <sup>nd</sup> generation migrant  | 1.102   | 1.043                      | .921   | .841                       |
| <i>Region [ref.: West]</i>  |   |                            |  |                            |
| East  | 1.146   | 1.034                      | 1.180  | .993                       |
| <i>Size of community [reference: 5,000-&lt;20,000]</i>  |   |                            |  |                            |
| 500,000+  | .851  | 1.206                      | .960   | 1.009                      |
| 100,000-<500,000  | .961  | 1.100                      | 1.051  | 1.059                      |
| 50,000-<100,000   | 1.034   | 1.213                      | 1.097  | .797                       |
| 20,000-<50,000  | .794*   | 1.129                      | 1.088  | 1.305*                     |
| <5,000  | .972  | 1.011                      | 1.156  | 1.029                      |
| Good health   | .981  | 1.049                      | .960   | 1.045                      |
| <i>Activity status [reference: in education]</i>  |   |                            |  |                            |
| Regular full-time employment  | 1.092   | 1.098                      | 1.642***   | 1.594***                   |
| Other employment <sup>1</sup>   | 1.073   | .941                       | 1.423**  | 1.417*                     |
| Not employed <sup>2</sup>   | .761  | .742*                      | 1.341  | 1.041                      |
| Age   | .958***   | .966***                    | .984   | 1.015                      |

<sup>1</sup> Including self-employment, part-time and marginal employment, internships, services (i.e. military or civilian service), irregular employment

<sup>2</sup> Including maternal or paternal leave, retirement, disability, joblessness

**Tab. 3:** Continuation

| Influences on transition risks of the anticipated time until the birth of 1 <sup>st</sup> child | Transition to romantic partnership (data-set A) |                            | Transition into coresidential partnership (data-set B) |                            |
|---|---|----------------------------|--|----------------------------|
|   | Women<br>(a)                                    | Men<br>(b)                 | Women<br>(c)   | Men<br>(d)                 |
|   | Obs. 3,405                                      | Obs. 4,970                 | Obs. 6,503   | Obs. 8,069                 |
|   | Resp. 1,238                                     | Resp. 1,616                | Resp. 1,753  | Resp. 2,049                |
|   | Trans. 1,274                                    | Trans. 1,564               | Trans. 932   | Trans. 872                 |
|   | Prob>Chi <sup>2</sup> .000                      | Prob>Chi <sup>2</sup> .000 | Prob>Chi <sup>2</sup> .000                             | Prob>Chi <sup>2</sup> .000 |
| <i>Wave [reference: wave 1]</i>   |   |                            |  |                            |
| 2   | .973  | 1.054                      | .938   | .951                       |
| 3   | .947  | 1.093                      | .819   | 1.033                      |
| 4   | .877  | 1.078                      | .734*  | .965                       |
| 5   | .848  | .991                       | .707*  | .905                       |
| 6   | .795  | .900                       | .948   | 1.101                      |
| 7   | .829  | .974                       | 1.120  | 1.157                      |
| 8   | .912  | .849                       | 1.224  | 1.178                      |
| 9   | .892  | 1.016                      | .810   | 1.186                      |
| <i>Relationship status [reference: not in a partnership, models c and d only]</i>               |   |                            |  |                            |
| In a romantic partnership   | –   | –                          | 4.051***   | 4.256***                   |

Obs = number of observation periods; Resp = number of respondents; Trans = number of transitions in the sample; \*p<.05, \*\* p<.01, \*\*\* p<.001; Prob>Chi<sup>2</sup> > .05 in all tests of proportional hazards assumption based on Schoenfeld residuals. Models include controls for frailty (observations from the same individual) and period effects (wave), region (East/West Germany), size of the community, migration status (2<sup>nd</sup> generation migrant or not; 1<sup>st</sup> generation migrants excluded from analysis), activity status, age, health status. Models c and d include controls for partnership status (not in a partnership vs. in a romantic partnership). Models with continuous variable only as robustness check in appendix.

Source: German Family Panel (pairfam) waves 1-10, own calculations.

level is low and the effect sizes are small. Thus, there is less support for hypothesis 1 among women, especially with regard to the transition to a romantic partnership.

Consistent with my expectations under hypothesis 2, uncertainty about the timing of fertility was negatively related to transitions to romantic and coresidential partnerships, especially among men, but also among women. I found that results supported my assumption under hypothesis 3, namely that the risk of transitioning to a romantic partnership decreased where respondents had no intention to have children. The influence of this factor was greater than that of uncertainty, albeit only among women. Among men, uncertainty about the timing of fertility and the anticipation that they will not have children have a surprisingly similar effect on transition risks. Hypothesis 4, namely that fertility orientations have a stronger influence on the transition to coresidential partnership, was generally supported across the different models. As far as the factors of uncertainty about childbearing, the length of time to pass before anticipated childbearing and the anticipation

among respondents that they will not have children are concerned, the reduction in transition risks is greater in models (c) and (d) than in models (a) and (b).

It is worthwhile taking a closer look at the gender differences in the strength and significance of the influences. Influences are generally greater among men, while the significance is also consistently high. Gender differences are even more pronounced with respect to the transition to a romantic partnership, with the expected timing of childbearing having hardly any influence among women. Both findings are in line with the argument put forward by *Ehrhardt* and *Kohli* (2011). They assume that men fear losing their investment in children in the event of separation from the mother as the latter is most likely to be in charge of childrearing following a separation. The will to establish a solid partnership is therefore likely to be greater among men than women. Furthermore, men depend more than women on finding a partner if they definitely want to become a parent; women, on the other hand, have a number of other possible routes to parenthood open to them, e.g. through sperm donation (*Gray et al.* 2013; *Kuhnt/Buhr* 2016). The fact that uncertainty as regards childbearing and the anticipation of not having children have similar effects among men but not among women suggests that uncertainty has a different meaning and therefore different consequences in the two gender groups (suggested also by findings of *Kuhnt/Buhr* 2016; *Miettinen/Paajanen* 2005). Among men, uncertainty is regarded more as being equivalent to not actively pursuing fertility plans. Uncertainty among women, on the other hand, could be due to other reasons, for example only wanting to have children with the "right partner" or ensuring that the woman herself or the couple has a secure financial background.

## 5 Discussion

Using data from the German Family Panel (pairfam) and Cox proportional hazard regression models, I have empirically demonstrated for the first time that the anticipation of fertility in general, uncertainty about fertility prospects as well as the estimated timing of fertility (reported as being "realistic" by respondents, collectively referred to as *fertility orientations*) influence partnership transition risks. These risks are greater among men and women who expect to have children, particularly if they anticipate childbearing in the near future. The influences were stronger among men and for the transition to a coresidential partnership. This is consistent with assumptions made in earlier research, which highlighted that coresidence is often considered a prerequisite for childbearing (e.g. *Rijken/Thomson* 2011; *Spéder/Kapitány* 2009; *Berrington* 2001) and that men are at a higher risk of losing an investment in a child in the event of separation from a partner (*Huinink/Kohli* 2014). Furthermore, women have other ways in which they can become a parent, while men depend heavily on finding a partner (*Gray et al.* 2013; *Kuhnt/Buhr* 2016). Uncertainty also affects partnership formation differently in both gender groups (as suggested in previous research by *Berrington* 2004; *Kuhnt/Buhr* 2016; *Miettinen/Paajanen* 2005).

This paper contributes to existing knowledge by helping to clarify the link between the life course dimensions of partnership and fertility in terms of the influences that fertility orientations have on partnership formation in Germany. This evidence can be useful in conceptualizing in a more comprehensive manner the role played by fertility within life course research (suggested by *Huinink/Kohli* 2014), which considers interdependencies between different life course dimensions. Results also suggest that the link between fertility orientations and partnership formation can be more or less close, and is likely to vary depending on the stage within the partnership formation process and between respondent groups, as demonstrated by the differences between men and women in this research. This supports theoretical notions from life course theory (e.g. *Bernardi et al.* 2019; *Huinink/Feldhaus* 2009; *Mayer* 2019), theories on individualisation (e.g. *Beck* 1992) and value changes (*Inglehart/Welzel* 2005; *Lesthaeghe* 2010, 2011; *Van de Kaa* 2001) as well as differentiation of private life (e.g. *Meyer* 1992, 2014). All theories mentioned in the last sentence suggest that life course domains are increasingly formally independent of each other and that individuals can and need to choose how (best) to connect them in order to maximise their own welfare. Establishing which life course domains and life events are more or less strongly linked in a specific setting and respondent group is thus a matter of empirical research rather than theory, while more detailed theoretical work is needed to explain these links (*Huinink/Feldhaus* 2009).

The findings have therefore illustrated the complex and intertwined nature of different life course areas (partnership and fertility) as well as life course phases; simple, unidirectional models of the influences that early life course phases have on later life course phases might be too simplistic (*Elder* 1985; *Elder et al.* 2003; *Levy* 1977; *Mayer* 1990, 2004, 2009). As a result, this research complements earlier research, such as that by *Born* (2001), *Carroll et al.* (2007), *Krüger* (2014), *Wagner et al.* (2019a/b) and *Willoughby* (2014) on different topics, all of which show that biographical orientations over the longer term influence both the present and the shorter term in many different dimensions of the life course.

This paper has several limitations, which is why further research is required. The respondents in my analysis were young, a fact attributable to many older respondents having already had children and/or a partner, thereby excluding them from the analysis. This was generally a positive factor and was necessary for the analysis and the research question since partnership formation largely takes place in younger years. This meant that the target group was generally well suited to answer the research question at hand. Further research on the influence of fertility orientations, using larger sample of older respondents (in addition to the work already done by *Wagner et al.* 2019a), could add extra value and test the assumptions of this research for older respondents, for whom the ticking of the biological clock might be more influential.

Due to the specific characteristics of the German context (e.g. strong link between marriage and childbearing, high proportion of both men and women remaining childless, partnerships adopting a more traditional course following the birth of children, strong two-child norm), the results are not easily transferable

to other countries. Further research is needed to understand whether and how the two dimensions are linked in other countries. The gender differences could only partly be explained. In particular, the different role that uncertainty about anticipated childbearing among men and women plays in terms of partnership formation requires further research. To better understand the importance of fertility orientations within multidimensional life courses, it would also be useful to analyse the influences of fertility orientations on events in other life course dimensions, e.g. education or work.

I argue that reverse causality is not a major problem within my analysis, as fertility orientations were measured before partnership events took place and were reported. However, individuals might take the decision to enter a romantic or coresidential partnership before the actual event occurs. This is more likely to be the case for coresidential partnerships because most partners who intend to cohabit need to find a suitable housing option before they can put their plan into practice. Therefore, individuals might already plan on starting a coresidential partnership (long) before the actual event takes place and before fertility orientations are measured. The plan/intention could thus influence the reported anticipations of future fertility. However, I argue that a plan or an intention to enter a romantic or coresidential partnership is not equivalent to actually doing so; a considerable amount of uncertainty remains, therefore, as to whether the plan will prove successful. Consequently, it is likely that intentions to form a romantic or coresidential partnership will, at most, have a very limited influence on fertility orientations.

Additionally, I am unable to distinguish between partnership transitions which are just trials or experiments, and those partnership transitions which are more relevant for the individuals (see *Lois* 2012 for an overview of types of early-stage partnerships). Prior research, however, suggests that trial partnerships are not very common among young people in Germany, or at least not commonly reported within surveys like the German Family Panel (*Hoppmann/Zimmermann* 2018). Therefore, these partnerships are likely to represent only a minority of partnerships and it can be comfortably assumed that this limitation does not seriously influence the results.

The principle of linked lives (*Elder* 1985) suggests that both (potential) partners' fertility orientations influence partnership transition risks. This was not a focus of the current research because this perspective would only allow an analysis of the risk of transitioning to coresidential partnership or marriage, due to the non-availability of attitudinal data for partners before the start of the partnership. Furthermore, not all partners filled out the questionnaire for a partner, leading to significant reductions in sample size. However, analysing the influence that both partners' fertility orientations have on the risk of transitioning to coresidential partnership or marriage for a reduced sample would be possible based on data from the German Family Panel. It would be worthwhile analysing these effects in future research in order to validate the findings of this study.

Based on life course and individualisation theory as well as theory on the differentiation of private lives, I argued that fertility orientations and partnership transition risks are likely to be independent of each other for the most part. I therefore do not assume that they are determined by an underlying attitude towards



family formation. This latter view is nevertheless suggested by the works of *Filandri et al.* (2016), *Hakim* (2000), *Rackin* (2013) and *Testa* (2007), however. Because of the contradicting theoretical positions, it would still be worthwhile to test whether a common determining factor, such as a more abstract preference for familial relationships, could be established. It is also possible that both perspectives are true – that there is indeed a common determining factor as well as some independence and mutual influences of the phenomena. However, to my knowledge, there is no data set available which includes a more abstract variable on the importance of family relationships, which could serve as an explaining variable for testing the hypothesis about a common determining factor. Nor is there any methodology available which can identify such abstract concepts based on more specific information from attitudinal and longitudinal data. Therefore, this question has to remain open for now, to be potentially answered in future research.

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## Appendix

**Tab. A1:** Results of Cox proportional hazard regression models for single destinations (Cox 1972), sensitivity analyses with a continuous independent variable

| Influences on transition risks to ...                              | ... a romantic partnership<br>(data-set A) |                            | ... a coresidential partnership<br>(data-set B) |                            |
|--|--|----------------------------|---|----------------------------|
|  | Women<br>(a)                               | Men<br>(b)                 | Women<br>(c)                                    | Men<br>(d)                 |
|  | Obs. 2,453                                 | Obs. 3,497                 | Obs. 5,097                                      | Obs. 5,991                 |
|  | Resp. 1,026                                | Resp. 1,354                | Resp. 1,544                                     | Resp. 1,770                |
|  | Trans. 993                                 | Trans. 1,188               | Trans. 791                                      | Trans. 681                 |
|  | Prob>Chi <sup>2</sup> .019                 | Prob>Chi <sup>2</sup> .001 | Prob>Chi <sup>2</sup> .000                      | Prob>Chi <sup>2</sup> .000 |
| Anticipated years until birth of the 1 <sup>st</sup> child (cont.) | .964*                                      | .939***                    | .849***   | .799***                    |
| <i>Migration status [reference: no migration background]</i>       |  |                            |   |                            |
| 2 <sup>nd</sup> generation migrant                                 | 1.214                                      | .995                       | .953  | .691*                      |
| <i>Region [reference: West]</i>                                    |  |                            |   |                            |
| East   | 1.127                                      | 1.094                      | 1.160   | 1.011                      |
| <i>Size of community [reference: 5,000-&lt;20,000]</i>             |  |                            |   |                            |
| 500,000+   | .826                                       | 1.187                      | .962  | .969                       |
| 100,000-<500,000   | 1.054                                      | 1.100                      | 1.060   | 1.096                      |
| 50,000-<100,000  | .913                                       | 1.207                      | 1.002   | .918                       |
| 20,000-<50,000   | .769*                                      | 1.095                      | 1.134   | 1.143                      |
| <5,000   | 1.004                                      | .967                       | 1.137   | 1.035                      |
| Good health  | 1.020                                      | 1.020                      | .986  | 1.064                      |
| <i>Activity status [reference: in education]</i>                   |  |                            |   |                            |
| Regular full-time employment                                       | 1.077                                      | 1.102                      | 1.574***  | 1.545***                   |
| Other employment <sup>1</sup>                                      | 1.028                                      | .995                       | 1.309   | 1.395*                     |
| Not employed <sup>2</sup>  | .763                                       | .717*                      | 1.167   | 1.133                      |
| Age  | .962**                                     | .964***                    | .981  | .997                       |

<sup>1</sup> Including self-employment, part-time and marginal employment, internships, services (i.e. military or civilian service), irregular employment.

<sup>2</sup> Including maternal or paternal leave, retirement, disability, joblessness.

**Tab. A1:** Continuation

| Influences on transition risks to ...   | ... a romantic partnership<br>(data-set A) |                            | ... a coresidential partnership<br>(data-set B) |                            |
|---|--|----------------------------|---|----------------------------|
|   | Women<br>(a)                               | Men<br>(b)                 | Women<br>(c)                                    | Men<br>(d)                 |
|   | Obs. 2,453                                 | Obs. 3,497                 | Obs. 5,097                                      | Obs. 5,991                 |
|   | Resp. 1,026                                | Resp. 1,354                | Resp. 1,544                                     | Resp. 1,770                |
|   | Trans. 993                                 | Trans. 1,188               | Trans. 791                                      | Trans. 681                 |
|   | Prob>Chi <sup>2</sup> .019                 | Prob>Chi <sup>2</sup> .001 | Prob>Chi <sup>2</sup> .000                      | Prob>Chi <sup>2</sup> .000 |
| <i>Wave [reference: wave 1]</i>   |  |                            |   |                            |
| 2   | 1.097                                      | 1.168                      | 1.007   | .969                       |
| 3   | 1.085                                      | 1.119                      | .801  | 1.039                      |
| 4   | .950                                       | 1.131                      | .742  | .976                       |
| 5   | .909                                       | 1.000                      | .688*   | .849                       |
| 6   | .911                                       | .944                       | .948  | 1.065                      |
| 7   | .846                                       | 1.051                      | 1.092   | 1.170                      |
| 8   | .985                                       | .915                       | 1.179   | 1.126                      |
| 9   | .926                                       | 1.068                      | .802  | 1.040                      |
| <i>Relationship status [reference: not in a partnership, models c and d only]</i> |  |                            |   |                            |
| In a romantic partnership   | -  | -                          | 4.107***  | 3.840***                   |

Obs= number of observation periods; Resp = number of respondents; Trans = number of transitions in the sample; \*p<.05, \*\* p<.01, \*\*\* p<.001; Prob>Chi<sup>2</sup> > .05 in all tests of proportional hazards assumption based on Schoenfeld residuals. Models include controls for frailty (observations from the same individual).

Source: German Family Panel (pairfam) waves 1-10, own calculations.

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