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MPIDR WORKING PAPER WP 2013-018
DECEMBER 2013

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Childbearing intentions and their
realization in a short term perspective**

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Easier said than done: Childbearing intentions and their realization in a short-term perspective

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Abstract

This paper studies the short-term fertility intentions of women and men and their subsequent behavior. On the one hand, the predictive strength of fertility intentions is of interest. On the other hand, the most important determinants that inhibit or enable the realization of fertility intentions are analyzed. Data from the first three waves of the German Family Panel (pairfam) are used in the analysis. The theoretical model is derived from the Theory of Planned Behavior. Its validity for the realization of short-term childbearing intentions is tested in the low-fertility context of Germany. Our descriptive findings indicate that fertility intentions have a certain predictive strength. Individuals who reported a strong desire to have a child within the next two years were the most likely to have had a child. However, negative intentions were even more predictive of subsequent behavior. For the women and men with positive fertility intentions, the chances of failure were relatively high. The multivariate results suggest that being in a stable relationship was by far the most important determinant of whether individuals had and realized positive fertility intentions. In addition, financial security and parenthood status were strong determinants. Social pressure exerted by the parents was also a factor, as subjective norms appear to have affected the realization of positive intentions.

Keywords: Fertility intentions, Fertility behavior, Theory of Planned Behavior, Panel data, Germany

1 Introduction

The gap between childbearing intentions and actual behavior remains a contentious issue in demographic research, as well as in policy debates. Against the background of low fertility, intentions are used as predictors of the future childbearing of individuals. Research has shown that at the aggregate level, the intended family size is on average higher than completed fertility (Goldstein et al. 2003; Quesnel-Vallée and Morgan 2003; Liefbroer 2009). While it is certainly the case that some births occur without prior positive intentions, in low-fertility settings fertility behavior tends to fall short of intentions. The failure to have the intended number of children is often attributed to an individual's unfavorable personal circumstances, which may interfere with his or her initial childbearing intentions, or, more recently, to changing intentions over the life course (Bachrach and Morgan 2013).

At the individual level, it is not well understood why some people realize their stated fertility intentions, while others do not. Research on this topic has so far been conducted for only a few European countries, such as Hungary (Spéder and Kapitány 2009), Great Britain (Berrington 2004), and France (Toulemon and Testa 2005). The aim of this study is to build upon existing research by analyzing the intention-behavior link using recently available longitudinal data for Germany. With this approach, we hope to gain a better understanding of the decision-making processes that underlie fertility behavior.

Our analyses focus on the fertility intentions of individuals and their subsequent behavior within a time frame of two years. The concept of fertility intentions differs from the desired, ideal, or expected number of children (Iacovou and Tavares 2011). Asking respondents whether they intend to have a child in the next two years is more useful than asking them about their long-term fertility plans, because they are better able to predict the likelihood that they will realize their intentions over a shorter than over a longer time period (Ette and Ruckdeschel 2007). Thus, fertility intentions are related to individuals' circumstances and perceptions (Thomson 2001), and it is relatively unlikely that these intentions would change within such a short time frame.

Two central research questions are addressed in this study. First, to what extent do individuals of different social groups realize their stated positive or negative fertility

intentions over a period of two years? Second, what are the most important determinants that inhibit or enable the realization of short-term fertility intentions? In addition to looking at the demographic, ideational, and socioeconomic determinants, we are particularly interested in exploring the potential influence of social pressure exerted by friends or parents. Up to now, the influence of social pressure has been investigated with respect to childbearing intentions (Balbo and Mills 2011b), while the effects of social pressure on the realization of those intentions has yet to be studied. Another important factor considered in our analyses is the stability of employment and of partnerships. To avoid selection bias and to fully account for the intention-behavior link, our analyses include the whole range of potential outcomes for women and men with positive, negative, and uncertain intentions. In particular, the last two groups have sometimes been neglected in empirical research on the realization of fertility intentions.

We start our investigation by presenting our theoretical framework, which is guided by the Theory of Planned Behavior, with particular consideration being given to the potential impact of social pressure. The inclusion of social pressure as an expression of subjective norms regarding childbearing is an extension of the initial theoretical framework. This is followed by a review of the research on the link between short-term fertility intentions and actual childbearing, and on the factors that affect the realization of childbearing intentions. We then present our data, which consist of the first three waves of the German Family Panel (pairfam), and our analytic strategy. In the section that follows, we describe our results in relation to our central theoretical expectations. We close with a discussion of our findings that places them in a broader context.

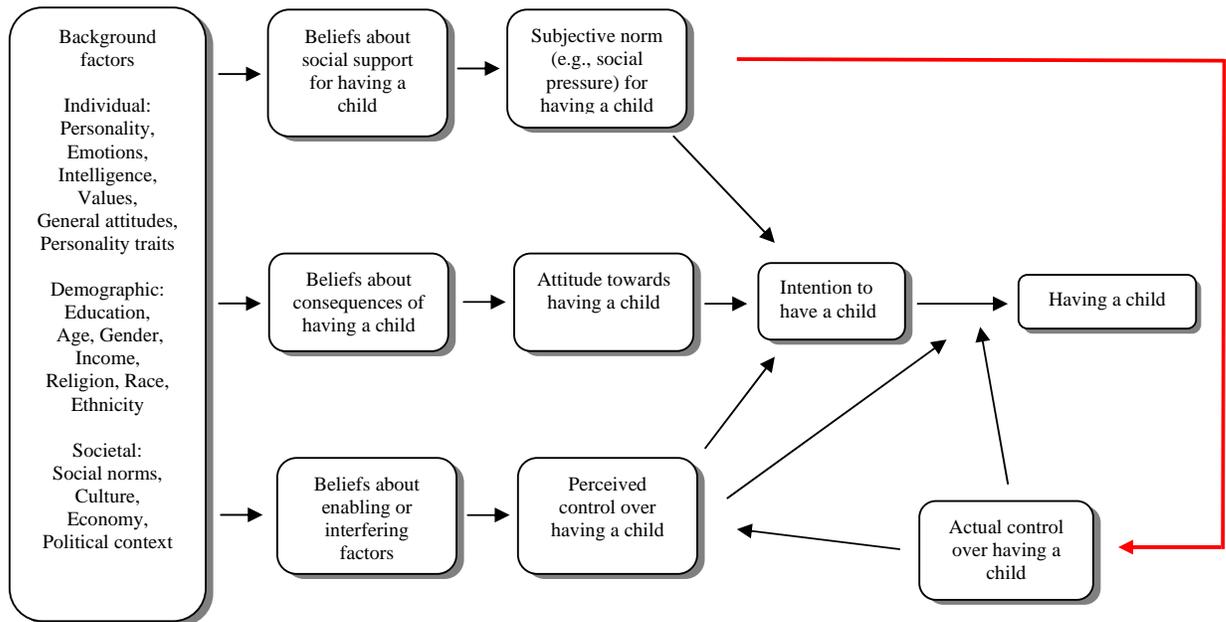
2 Theoretical background

Our theoretical starting point is the Theory of Planned Behavior (TPB) (Ajzen 1991). Although it was not designed to study fertility behavior (Ajzen 2011), this framework has been widely used for this purpose (Schoen et al. 1999; Goldstein et al. 2003; Dommermuth et al. 2011; Philipov and Bernardi 2011; Balbo and Mills 2011a). The TPB appears to confirm the assumption that there is a close link between fertility intentions and behavior, because behavior is expected to be a

“reasoned action.” According to this theoretical framework, an individual’s fertility behavior is based on the evaluation of three factors that affect the underlying intention: his or her personal *attitudes* toward having a child based on an evaluation of the perceived costs and benefits of parenthood, the *subjective norms* regarding the desirability of having a child among friends and family members, and the level of *perceived control* over his or her fertility behavior. In addition, fertility behavior depends on background factors, such as age, gender, religion, economic conditions and personality traits, that enable individuals to perform the intended behavior (Ajzen and Fishbein 2005; Balbo and Mills 2011a).

In this study, the behavior of interest is the birth or conception of a (further) child. Based on the theory, this would refer to stopping the use of contraceptives and starting sexual intercourse (Billari et al. 2009; Philipov 2011). Pregnancies and childbirths that result from this behavior can be used as approximations (Ajzen 2011). It should be noted that intentions are a core concept of the TPB. This implies that there should be no unintended births, because behavior is planned and preceded by an intention. However, unplanned births can occur due to the failure of contraceptives or the failure of the individual to use them, which is related to perceived behavioral control (Billari et al. 2009; Ajzen 2011). Ajzen (2011) argued that a pregnancy can be unintended, but that the behavior that led to childbirth cannot. Therefore, the anticipated link between intentions and behavior is still relevant. To account for this, our analyses focus on the outcome of positive and negative fertility intentions.

Figure 1: Integrating the impact of social pressure into the Theory of Planned Behavior



Source: adapted from Ajzen and Klobas 2013: 206, own illustration.

As is shown in Figure 1, the TPB assumes that there is a tight link between fertility intentions and behavior. The first important factor in the formation of fertility intentions is the individual's attitude. The more beneficial an individual expects the outcome of childbirth would be, the more likely he or she is to have a positive attitude toward having a child. Having a positive attitude is a precondition for having a positive intention. The individual's attitude is generally the result of an evaluation of the extent to which the anticipated financial and emotional costs of childbearing are outweighed by the anticipated benefits of having a (further) child. If the outcome of this evaluation is negative, the individual will form a negative intention.

A second factor in the formation of fertility intentions is the individual's perception of the norms that influence fertility intentions. This includes the perception of the expectations of significant others, such as those of the individual's partner, parents, and friends. Bühler and Philipov (2005) argued that individuals are embedded in social environments that affect their preferences. On the one hand, having access to certain resources can reduce the cost of having (further) children (Dommermuth et al. 2011). For example, an offer by parents or friends to provide childcare or

financial support could be a positive incentive to have a child. On the other hand, individuals could adapt their behavior to perceived expectations in order to avoid being disliked or rejected by a certain group (Keim 2011). “When people believe that most respected others would expect them to perform the behavior or are themselves performing the behavior, the subjective norm will exert pressure to engage in the behavior” (Ajzen and Fishbein 2005: 193). Thus, individuals will formulate a positive intention if significant others expect them to have a (further) child.

A third factor in the formation of fertility intentions is perceived behavioral control. This concept refers to the resources and opportunities individuals have at their disposal. If individuals perceive that they are not able to control their childbearing plans, they might adapt them to the current situation. For example, having a partner increases perceived behavioral control and reinforces the intention to have a child. In contrast, being single or separated from a partner decreases behavioral control and impedes the realization of positive childbearing intentions. Having the financial means to support a child is another aspect related to control. In particular, working full-time increases the individual’s sense of financial stability and security, and thus his or her level of behavioral control. Perceived behavioral control has a direct impact on fertility intentions, and, in contrast to attitudes and perceived norms, on behavior itself (Ajzen 1991). It should be noted that perceptions about the level of behavioral control are not necessarily realistic, and that an individual may have inaccurate beliefs about his or her level of control due to limited information (Ajzen 1991, 2011).

In addition, there are enablers of and constraints on childbirth that influence the individual’s actual level of control over having a child. These tend to be external factors that support or inhibit individuals in realizing their positive or negative childbearing intentions, such as the availability of financial resources or the existence of a partner who is willing to have a child. Actual behavioral control has a direct influence on behavior. Furthermore, there is also a feedback loop from actual to perceived behavioral control (Ajzen 2011). Within the initial framework of the TPB, which is often used in the context of fertility research, subjective norms only affect the intention to have a child. However, we argue that subjective norms, expressed as the perception of whether relevant others approve or disapprove of

certain behaviors (social pressure), can enable or constrain the performance of a certain behavior (see Figure 1). This extension of the original theoretical framework is expected to be useful in a more thorough analysis of the different stages of the fertility process.

Our reasoning for extending the TPB is based on the assumption that an individual's social network of family and friends not only influences his or her fertility intentions, but also his or her decision-making (red arrow in Figure 1). This line of thought follows Rossier and Bernardi (2009), who argued that social network mechanisms, such as social influence (reference group effect, contagion, social pressure) and social support, are crucial to understanding the relationship between fertility intentions and outcomes. In that sense, the positive attitudes of family and friends toward childbearing might have an enabling influence on the realization of fertility intentions, even when the actual means for having a child are limited (e.g., via emotional or financial support). "The 'social support' offered by significant others will affect individuals' actual behavioral control as well as their perceived behavioral control" (Rossier and Bernardi 2009: 474). For instance, the availability of grandparents to supply informal childcare increases the resources couples can activate to move from intention to realization, particularly in settings with low levels of formal childcare provision. Therefore, social networks of family and friends affect an individual's ability to control and realize fertility behavior (Rossier and Bernardi 2009; Balbo and Mills 2011a).

3 Previous research

There are many concepts of fertility intentions, and each concept focuses on different details of the fertility process. Spéder and Kapitány (2009: 505f) identified five different concepts: "(1) intended (expected) family size, (2) intention to have (any more) children at all, (3) the intention of having a(nother) child within a given time period, (4) the degree of certainty of the childbearing intention, and (5) whether the intentions of the partners coincide." These perspectives do not seem to be mutually exclusive, and may overlap. Because these concepts vary, the comparability of studies on the link between intentions and actual behavior and on the factors underlying the realization of intentions is limited. In the case of our

study, the respondents had to assess whether their intentions could be realized within two years, while allowing for some degree of uncertainty. Therefore, the following research review focuses on the predictive strength of short-term fertility intentions and on the main determinants that constrain or enable their realization.

3.1 On the link between short-term fertility intentions and actual behavior

The Theory of Planned Behavior assumes the existence of a tight link between fertility intentions and corresponding behavior. This should be particularly true for short-term fertility intentions covering a time span of two to six years.¹ Women and men should be better able to provide a realistic evaluation of their situation and their preferences over a shorter than over a longer time period (van Peer 2002; Ette and Ruckdeschel 2007). The use of a more limited time period also reduces the possibility of unforeseen circumstances intervening. In line with the theory, research has generally shown that there is a close relationship between short-term fertility intentions and childbearing behavior. These findings lend support to the idea that such intentions are strong and persistent predictors of fertility. Moreover, it is not only the intentions themselves, but also the strength of the intentions that matter for the transition to a(nother) child (Schoen et al. 1999; Rijken and Liefbroer 2009). A study that examined white women and men in the US at the end of the 1980s and the beginning of the 1990s found that that, of those who reported having positive fertility intentions, 57% of the women and 53% of the men had a(nother) child within five years. Of those who reported having negative intentions, the share who did not have a child was considerably higher (86% of the women and 85% of the men) (Schoen et al. 1999). In a study of French women and men surveyed between 1998 and 2003, Toulemon and Testa (2005) found that the strength of the intention-behavior link was highest for those with negative intentions, and that about half of the women and men with positive intentions realized them within five years. The strength of the link for those who were uncertain about their intentions was between that of those who had positive and those who had negative intentions. Based on the British Household Panel Survey (BHPS) from 1992 to 1998, Berrington (2004) found that half of all women respondents who said they intended

¹ There is no consensus in the literature on the time span related to short-term intentions. Our review found margins of between two (Philipov 2009) and six years (Berrington 2004).

to have a (further) child actually had one within six years. Meanwhile, 34% of the women who indicated they were undecided had a child over the period, but only 11% of those who said they did not intend to have a child had one.

Existing studies have confirmed that there is a relatively close link between short-term fertility intentions and childbearing. This is particularly true for negative intentions in societal contexts where effective contraceptives are widely available. The proportion of women and men who would like to have a(nother) child and actually do so seems to depend on the time span under consideration. If this time span is very short, they might not succeed in becoming pregnant despite stopping the use of contraceptives. If the time span is relatively long, personal circumstances might change or other factors might intervene that could not be taken into account when the individuals were initially asked about their intentions. In addition, research has shown that the share of women and men who are undecided about their childbearing intentions might be large. The fertility behavior of these undecided individuals lies between the behaviors of those with clearly expressed negative or positive intentions. To fully account for the intention-behavior link, it is necessary to include the whole range of potential outcomes among women and men with positive, uncertain, and negative intentions. This has rarely been done in studies focusing on the realization of childbearing intentions.

3.2 Determinants of the realization of fertility intentions

Demographic factors, such as age, partnership status, and parity, have been shown to be important in the realization of childbearing intentions (Spéder and Kapitány 2009; Kapitány and Spéder 2012). Previous research has overwhelmingly indicated that there is a positive relationship between the *age* of the respondent and the realization of intentions: i.e., being younger increases the likelihood of having an intended child, and being older decreases the likelihood (Schoen et al. 1999; Berrington 2004; Philipov 2009). The time frame for childbearing shrinks with increasing age, particularly for women because of their age-related limited fecundity (“biological clock”). Another line of research has made the claim that there are social deadlines for childbearing (Mynarska 2010; Billari et al. 2013). It is therefore possible that people who are approaching those age limits will strive to realize their

intentions, leading to a decrease in postponement with increasing age (“social age norm”) (Kapitány and Spéder 2012). Empirical evidence supporting this assumption has so far been limited. *Partnership status* appears to be an important prerequisite for the realization of positive fertility intentions, and the lack of a partner might be a reason for not achieving the initial plan or for adapting the plan later. As the existence of a partnership also has a direct impact on the formation of fertility intentions, people who are in a partnership have better prospects of realizing their childbearing plans (Spéder and Kapitány 2009). The effect of the marital status of the couple on the realization of fertility intentions seems to depend on the country context and on the prevalence of non-marital cohabitation. While being married has only a modest positive effect in France (Toulemon and Testa 2005), the impact is sizeable in the Netherlands (Balbo and Mills 2011a) and is very large in the US (Schoen et al. 1999). Interestingly, changes in the partnership biography have only rarely been considered in relation to the realization of fertility intentions (Schoen et al. 1999). But the few studies that did take partnership changes into consideration found that the dissolution of partnerships often led to the abandonment of short-term fertility intentions. It is therefore clear that changes in the life course influence the intention-behavior link (Spéder 2010). *Parity* is a central determinant of childbearing plans and their realization, as the sharpest differences in behavior have been observed between childless individuals and parents. Childless women and men are the most likely to postpone childbearing and are the least likely to say they intend to have children. This is often attributed to childless people having alternative life goals or competing activities (Spéder and Kapitány 2009; Spéder 2010). There is some evidence that of all of the parity groups, those who already have one child are the most likely to have a(nother) birth, when intentions are accounted for (Schoen et al. 1999; Berrington 2004; Toulemon and Testa 2005). So far, however, the evidence has been mixed that parents with only one child are particularly likely to have another in order to live up to the two-child-family norm (Spéder 2010).

Another group of factors that has been shown to be relevant for realizing fertility plans within a given time frame are ideational in nature. Spéder and Kapitány (2009) rightfully claimed that a positive or negative fertility intention might mediate attitudes and expectations that are closely related to childbearing. Additional effects on the intention-behavior relation should therefore be more likely for general

orientations, norms, and values that are not closely associated with childbearing. While it is undisputed that *religiosity* has an impact on the ideal and expected number of children (Philipov and Berghammer 2007), its potential effect on the realization of intentions is less clear. Findings by Spéder and Kapitány (2009) for Hungary suggest that non-religious women and men, as well as Calvinist Protestants, are more likely to postpone or abandon their fertility intentions than Catholics. In France and in other countries, no evidence of an impact of religious affiliation could be found (Testa and Toulemon 2006; Spéder 2010; Régnier-Loilier and Vignoli 2011). Spéder and Kapitány (2009) also considered *overall life satisfaction*, and showed that satisfied individuals are more likely to realize their intentions than to abandon them. Individuals who had unintended births seem to be more pessimistic than intentional parents. Cause and effect might be difficult to disentangle here. Berrington (2004) took into account *gender role attitudes*, and showed that egalitarian childless women in their thirties are considerably more likely than their traditional counterparts to have a first child when their intentions are controlled for.

An individual's socioeconomic situation, which tends to change over the life course, is often seen as a constraining or an enabling factor in the realization of childbearing plans. The research findings regarding *education* have been ambiguous, and seem to point to the relevance of country context. To the extent that education does have an impact, it appears that individuals with higher educational levels are more likely to realize their fertility intentions, as has been shown for Italy (Régnier-Loilier and Vignoli 2011), for Hungary (Spéder and Kapitány 2009), and for France (Toulemon and Testa 2005). It is generally assumed that education provides individuals with the economic or cognitive resources needed to anticipate the future more accurately. The role of education strongly depends on other variables in the model as well. "If no income variables are included, then it can mediate effects of economic resources ('income effect'), and if no relevant ideational factors are present in the model, education could mediate effects of value orientation" (Spéder 2010: 67). The *employment situation* is of crucial importance for the realization of fertility intentions. Toulemon and Testa (2005) found that intended births are more likely to be realized if both of the partners are working, and that the likelihood of realization declines sharply when one partner is unemployed. Spéder and Kapitány (2009) also

found that individuals with a job were more likely than those with no job to realize their fertility intentions, but that causality remains difficult to establish. Unemployment seems to delay or hinder childbearing among men, and a positive income effect has been found among women as well (Berrington 2004). However, the results of Régnier-Loilier and Vignoli (2011) indicated that inactive women are more likely to realize their stated intentions in Italy but not in France. This suggests that gender-specific employment effects strongly depend on the societal context. Hanappi et al. (2012) expanded this line of thought by including the role of precarious work in the realization of fertility intentions in Switzerland. In general, being in a precarious employment situation was shown to reduce the realization of childbearing plans among both men and women.

Social interaction is another crucial component that might have a facilitating or hindering influence on the realization of fertility intentions. Rossier and Bernardi (2009) identified three mechanisms at work in this context: social influence, social learning, and social support. Empirical studies on the realization of short-term fertility intentions so far have only considered the impact of *social capital* and of *concordant or discordant fertility intentions* within couples. Based on Dutch data, Balbo and Mills (2011a) showed that high levels of family social capital, measured through the strength and quality of family ties, operate to deter individuals from having a child, particularly parents with positive fertility intentions. They interpreted this finding as being an effect of social fulfillment. On the other hand, they also found that having a sibling with a young child is associated with a higher probability of having an intended first birth. Thus, children may operate as a means of generating family social capital. Partners' agreement about fertility intentions is another topic in which social interaction comes into play (Berrington 2004; Testa et al. 2011; Testa 2012; Bauer and Kneip 2013). In general, the impact of social interaction through personal networks on the realization of fertility intentions has not been investigated to the same extent as the influence of demographic, ideational, and socioeconomic determinants. This is largely due to data limitations. For instance, it has been shown that social pressure has a strong and country-specific effect on the intention to have a second or third child (Balbo and Mills 2011b), but whether the effect is the same for the realization of fertility intentions is not clear yet.

4 Hypotheses

Following the TPB, we assume that fertility outcomes can be predicted by fertility intentions. A positive intention will lead to a positive outcome, which in our case is measured as pregnancy or birth, and vice versa. The tighter intention-behavior link among individuals with negative intentions, which has been documented in recent research for societal contexts in which contraceptives are widely available and affordable, has been attributed to a high degree of behavioral control. This should hold for Germany as well. *Therefore, we expect to find that short-term fertility intentions will be realized to a large extent, especially among women and men who do not intend to have a (further) child (hypothesis 1).*

In addition, we assume that a range of factors influence the realization of fertility intentions either positively or negatively. For most women and men, having a partner is a prerequisite for deciding to have a child, and for the development of fertility intentions. Although the number of childbirths outside of a relationship has increased in recent decades, the share is small compared to the share of births within a relationship (Bastin et al. 2013). A stable relationship is considered the most favorable environment in which to realize a positive intention, because the level of perceived behavioral control is high. A change in partner status (e.g., separation, new partner) reduces the level of perceived behavioral control, and may lead individuals to postpone the intended birth of a child, or to adapt formerly positive intentions to the new situation. Therefore, we expect the following: *Having a stable relationship increases the chances of realizing positive intentions (hypothesis 2a). Experiencing the dissolution of a partnership or starting a new partnership increases the chances of postponing the birth of a child (hypothesis 2b).*

Financial stability is seen as another prerequisite for raising a child, because it also increases the level of behavioral control. Working full-time is an approximation of financial security. Being unemployed or marginally employed reduces financial security, and therefore decreases the level of behavioral control. Thus, positive intentions are less likely to be realized: *Relative to stable full-time employment, unemployment or marginal employment decreases the chances of realizing a positive fertility intention (hypothesis 3a).* Gendered assumptions are embedded within employment relationships differently in different societal contexts. *For Germany, with its tradition of a strong male breadwinner model, we therefore*

expect to find that unstable employment has a negative effect on the realization of an intended birth among men in particular. Among women, the stability of employment should have less effect on the realization of positive fertility intentions (hypothesis 3b).

We also extended the TPB by accounting for the role of social pressure in the realization of fertility intentions. We assume that social networks of family and friends not only affect the ability of women and men to control their fertility behavior, but also their ability to move from intentions to behavior. Individuals take into consideration whether significant others approve or disapprove of childbearing when deciding whether to have further children (Bernardi 2003). Approval might also be an indication of social support. In our study, parents and friends are considered to be the significant others. We expect to find that the social support and resources of parents are more influential than those of friends when it comes to childbearing. *If individuals assume that their parents or friends think they should have a(nother) child, the realization of positive fertility intentions is more likely, and the views of parents matter more than the views of friends (hypothesis 4).*

5 Data, measurement, and methodology

The analyses were based on the German Family Panel (pairfam, Release 3.0) and its eastern German supplement DemoDiff (Release 3.0).² We used data of the first three waves of these datasets, and focused on respondents born between 1971-73 and 1981-83. The respondents were between 25-27 and 35-37 years old when they were interviewed for the first time (2008/09). Individuals of the birth cohort 1991-93 were excluded from the analysis because they were still young, and could therefore be expected to have largely negative fertility intentions and very few births. Women who were pregnant and men with a female partner who was expecting a child in wave 1 also were not considered because they were not asked about their short-term fertility intentions. Same-sex couples and individuals who identified themselves as gay or lesbian were excluded from the sample as well, because it is assumed that they face much higher barriers to realizing their fertility intentions. The sample

² The German Family Panel is coordinated by Josef Brüderl, Johannes Huinink, Bernhard Nauck, and Sabine Walper. It is funded as a long-term project by the German Research Foundation (DFG). For further details, see Huinink et al. (2011); Kreyenfeld et al. (2012); Nauck et al. (2012); Kreyenfeld et al. (2013).

consisted of all of the remaining women and men who gave valid answers about their short-term fertility intentions in wave 1, and who were re-interviewed in waves 2 and 3.

5.1 Measurement of variables

Table 1 displays the comparison of fertility intentions women and men stated in wave 1,³ and the subsequent behavioral outcomes (pregnancies as well as births). In line with most previous research (Schoen et al. 1999; Berrington 2004; Toulemon and Testa 2005; Rijken and Liefbroer 2009), we found that there is a clear association between short-term fertility intentions and behavior. According to Table 1, the probability of realizing a pregnancy or birth decreases with a diminishing strength of positive intentions. Around 7% of the respondents in the sample were not certain about their fertility plans (N=391). They displayed a fertility behavior in between those with positive and negative intentions. The results also showed that individuals with negative intentions were considerably more likely to have stuck to their plans than respondents with positive intentions. Less than half of those with firm positive intentions were able to realize them within two years, compared to almost 95% of women and men with strong negative intentions. Thus, hypothesis 1 was found to hold mainly for individuals who did not want to have a(nother) child. Even though the respondents who did not intend to have (further) children largely followed their plans, it is interesting to note that more than 28% of all of the pregnancies or births in our sample were characterized as unintended births.⁴ This sizeable share of initially unintended children is, strictly speaking, non-existent according to the TPB framework.

³ The exact wording of the question was: “Do you intend to become a mother/father within the next two years?”

⁴ This result is based on the following calculation: $\left(\frac{7.6 \times 742}{100} + \frac{5.3 \times 2682}{100}\right) / 698$

Table 1: Percentage of women and men having a birth/pregnancy within two years, according to the intentions stated in wave 1, row percentages

Intention in wave 1	Birth/pregnancy until wave 3	Total
Yes, definitely	45.2	567
Yes, maybe	23.9	890
Don't know	10.5	391
No, rather not	7.6	742
No, definitely not	5.3	2682
N	698	5.272

Source: German Family Panel, wave 1 to 3 (2008/09, 2009/10, 2010/11), own calculations, weighted results.

Following Spéder and Kapitány (2009), a variable with four categories was created as our *dependent variable*: intentional parents (individuals with a positive intention (yes, definitely; yes, maybe) in wave 1 and a pregnancy/birth in wave 3), postponers or abandoners (individuals with a positive intention in wave 1 and no pregnancy/birth in wave 3), parents with unintended births (individuals with a negative intention in wave 1 (no, rather not; no, definitely not) and a pregnancy/birth in wave 3), and individuals who were consistently opposed to having children (individuals with a negative intention in wave 1 and no pregnancy/birth in wave 3).⁵ This classification allowed us to focus not only on women and men with positive intentions, but also on the large group of individuals with negative childbearing plans, and thus to avoid selection bias (Balbo and Mills 2011a).

In contrast to previous studies, and building on the results of Morgan (1981: 268; 1985: 126), which showed that uncertainty is an integral part of the fertility decision process, we decided to include women and men with uncertain intentions (“*Don’t know*,” “*I haven’t thought about that yet*”) in the classification.⁶ Based on their likelihood of experiencing a pregnancy or birth, they seemed to be closer to those with initial negative intentions. We therefore treated them as if they belonged to this group. If they had had a (further) child within the two years, it was considered an “unintended birth.” Otherwise, they were grouped together with those who were “consistently opposed.” The final categorization is shown in Table 2. As expected,

⁵ Only the respondents who were considering having a(nother) child in general were asked about their short-term fertility intentions. Individuals who said they had no desire to have a(nother) child were treated as having strong negative fertility intentions.

⁶ It would have been preferable to have run separate analyses for this group, but the small number of events prevented us from doing so.

the largest group consisted of women and men who were consistently opposed to having (further) children, while the smallest group was made up of individuals with an unintended birth. In between were the intentional parents and those individuals who were postponing the realization of their initial childbearing plans. These proportions approximately mirror the findings reported by Spéder and Kapitány for Hungary (2009: 507).

Table 2: Classification pattern of the realization of short-term fertility intentions, inspired by Spéder and Kapitány (2009), percentage

Intention in wave 1	Behavior in wave 3	Classification	Distribution (n = 5.272)
Positive intention	Childbirth/pregnancy	Intentional parents	8.7
Positive intention	No childbirth/pregnancy	Postponers/abandoners	18.3
Negative intention	Childbirth/pregnancy	Unintended births	4.5
Negative intention	No childbirth/pregnancy	Consistently opposed	68.5
			100.0

Source: German Family Panel, wave 1 to 3 (2008/09, 2009/10, 2010/11), own calculations, weighted results.

Three key explanatory variables are included in our analyses: relationship status, labor force status, and social pressure. *Relationship status* has been coded as stability or change in the partnership between waves 1 and 3. The following categories have been distinguished: permanently without a partner, permanently with the same partner, and a changing relationship status.⁷ The *labor force status* was created based on information about the current labor force status in waves 1 and 2.⁸ Since self-employed women and men tend to work long hours (Fritsch et al. 2012), self-employment and full-time employment were collapsed into one category, while part-time work and marginal employment made up a separate category. The final categories were: stable full-time employment/self-employment, part-time/marginal work in wave 1 or 2, unemployment in wave 1 or 2, and other arrangements. *Social pressure* was measured in wave 1 by individuals' perceptions of its existence. Respondents were asked to indicate on a scale from one to five how strongly they agreed with the following statements: “*My parents/most of my friends*

⁷ Unfortunately, the small number of cases did not allow for a more detailed differentiation of the nature of change in the relationship status (e.g., separation, new partner).

⁸ This decision was made because we were interested in the employment situation preceding a fertility decision and not following it.

think that I should have a(nother) child.” Respondents who agreed with those statements or were indifferent (scale values 3 to 5) were grouped in an affirmative category, while those who disagreed were placed in a negative category. One dummy variable was created for the perception of social pressure exerted by parents, and another for the perception of social pressure exerted by friends.

Based on the discussion of potentially important determinants of the realization of fertility intentions (section 3.2), several *control variables* were included in our analyses. They encompassed gender, cohort (1971-73, 1981-83), and parenthood status in wave 1; educational level in wave 1 (low, medium, high)⁹; place of residence in wave 1 (East/West Germany); and frequency of attendance at religious services in wave 1 (at least once a month, several times a year, seldom/never/without confession). The information on the consistency of the use of contraceptives was taken from wave 2, and distinguished between two rough extremes: consistent use and rather inconsistent use.¹⁰

5.2 Analytic strategy

In the following, we present our descriptive findings in order to assess the link between fertility intentions and actual behavior for varying subgroups. We then discuss the sample composition according to the classification of the intention-behavior relationship. For the descriptive analyses, a design weight was used to account for the under- or overrepresentation of the cohorts in the gross sample and the oversampling of eastern Germans (Kreyenfeld et al. 2013). Multinomial logistic regression models were applied to identify the factors that enable or constrain the realization of fertility intentions. Using the available data, it was possible to evaluate the influence on the fertility outcome two years later of the characteristics measured at the time of the first interview, and of any changes in these characteristics between the interviews. The individuals who were consistently

⁹ The educational level is based on the highest school degree that has been completed: low – secondary general school certificate or less, medium – intermediate school certificate, high – entrance qualification for higher education.

¹⁰ Since individuals were asked about their fertility intentions in a prospective way referring to the next two years, we believed it was more useful to consider their usage of contraceptives a year after they stated the intention. This reasoning was supported, as the information on contraceptive use collected in the first interview hardly mattered for the realization of fertility intentions within two years.

opposed to (further) childbearing were chosen as the reference category because they were the largest group, and because they provide a good basis for comparing the respondents with positive fertility intentions. To allow for potential differences in the intention-behavior link between women and men, an additional model that included an interaction term of labor force status and gender was estimated.

Several robustness checks were conducted to ensure that the results reported here were reliable. We ran separate analyses for different subgroups (e.g., by gender, parenthood, or partnership status), which did not reveal any systematic differences. We therefore decided that the general model presented here was more insightful. In addition, models excluding the group of respondents who were uncertain about their fertility intentions were checked, but the results were almost identical to those reported here.

6 Results

6.1 Did individuals meet their stated intentions?

We have already shown (Table 1) that the women and men studied were much more likely to have avoided having (more) children if they had said they did not want children than the other way around. But was there variation between the different subgroups? Table 3 illustrates that while gender differences concerning the intention-behavior link were of minor importance, parenthood status mattered more for the realization of positive intentions.¹¹ The women and men who were already parents were considerably more likely to have had a (further) child if they had wanted one than the childless women and men. This result is in line with previous research, which showed that childless people are more likely to postpone childbearing than parents, largely because childless people are more likely to have alternative life plans or competing goals (Spéder and Kapitány 2009; Spéder 2010). Further analysis showed that the higher propensity of parents to have an intended child was more pronounced among women and men living in western Germany than among those living in eastern Germany. Interestingly, fathers in particular were

¹¹ In statistical terms, the intention-behavior nexus differs significantly between childless women and mothers, between childless men and fathers, and between childless women and childless men.

found to have been more likely than childless men to have had a birth that was initially unintended.¹²

Table 3: Share of respondents who realized their positive and negative intentions by gender and parenthood status, (N=5.272), percentage

Intention in wave 1	Behavior in wave 3	Fathers	Childless men	Men Total	Mothers	Childless women	Women total
Positive intention	Intentional parents	42.4	23.5	30.7	41.3	26.9	33.5
Positive intention	Postponers/ abandoners	57.6	76.5	69.3	58.7	73.1	66.5
		100	100	100	100	100	100
Negative intention	Unintended Births	8.1	4.4	6.0	6.5	6.2	6.4
Negative intention	Consistently opposed	91.9	95.6	94.0	93.5	93.8	93.6
		100	100	100	100	100	100

Source: German Family Panel, wave 1 to 3 (2008/09, 2009/10, 2010/11), own calculations, weighted results.

6.2 Sample composition

With respect to the main explanatory variables, the composition of the sample depicted in Table 4 reveals some interesting differences between subgroups. Not surprisingly, intentional parents were shown to have had the highest share of stable partnerships, whereas respondents in the three other groups were more likely to have experienced a change in their partnership over time. In particular, those classified as postponers or consistently opposed had a higher propensity of having been without a partner. Respondents with negative fertility intentions were also slightly more likely to have been in unstable employment situations. The differences between the groups were especially obvious in terms of social pressure. The women and men who experienced an unintended birth or who were consistently opposed to having a(nother) child were much less likely to have reported feeling pressure to have a child from parents or friends than those who had positive childbearing intentions.

¹² Additional multivariate analyses (results available upon request) supported the finding that parents in general were more likely to have realized an unintended birth than childless individuals.

Table 4: Sample composition according to the classification of the intention-behavior relationship (N=5.272), column percentages

	Intentional parents	Postponers/abandoners	Unintended births	Consistently opposed
N	462	995	236	3,579
Partnership status				
No partner	0.9	12.0	3.4	18.1
Same partner	90.7	67.4	76.7	62.3
Change in partnership	7.4	15.8	17.4	13.7
Missings	1.1	4.8	2.5	5.9
Labor force status				
Full-time/self-employment	46.1	51.0	34.7	42.1
Part-time/marginal employment	6.7	5.6	4.7	10.5
Unemployment	2.8	2.1	5.1	4.4
Other arrangements	36.4	33.4	47.9	35.3
Missings	8.0	7.9	7.6	7.8
Perception of social pressure				
No pressure by friends	37.0	41.1	63.1	67.6
Pressure by friends	63.0	58.7	27.5	24.0
Missings	0.0	0.2	9.3	8.4
No pressure by parents	29.7	34.9	58.9	64.1
Pressure by parents	70.1	64.5	31.4	27.3
Missings	0.2	0.6	9.7	8.6
Gender				
Men	42.2	46.3	44.9	46.0
Women	57.8	53.7	55.1	54.0
Birth cohort				
1981-83	63.4	60.1	57.2	42.5
1971-73	36.6	39.9	42.8	57.5
Parenthood status				
Childless	47.8	63.3	34.7	42.7
Parents	52.2	36.7	65.3	57.3
Highest school certificate attained				
Low	22.7	19.9	26.3	20.2
Medium	29.9	34.1	39.8	38.4
High	47.4	46.0	33.9	41.3
Missings	0.0	0.0	0.0	0.1
Religious attendance				
At least once a month	12.6	8.6	10.6	9.5
Several times a year	17.5	11.5	11.4	14.0
Less/never/without confession	69.7	79.3	77.5	76.2
Missings	0.2	0.6	0.4	0.3
Place of residence				
East Germany	31.8	35.2	30.5	32.1
West Germany	68.2	64.8	69.5	67.9
Contraceptive use				
Consistent	17.7	42.8	31.8	45.5
Inconsistent	7.8	12.2	8.1	12.8
Missings	74.5	45.0	60.2	41.7

Source: German Family Panel, wave 1 to 3 (2008/09, 2009/10, 2010/11), own calculations.
 Note: Grey-shaded areas are key explanatory variables.

There were also some notable findings in the distribution of the control variables between the classified groups distinguished here. The women and men born between 1971-73 were less likely to have been in the group of intentional parents than in all of the other groups, while the women and men born 10 years later were more likely to have been classified as intentional parents. This suggests that the individuals who belonged to the older birth cohort were far more likely to have achieved their desired number of children than those in the younger cohort. Compared to parents, childless women and men were much more likely to have been postponers. Among all of the other groups, parents had the largest shares. Those classified as intentional parents were somewhat more likely than all of the other groups to have attended religious services. Consistent with expectations, the findings indicated that the women and men who became parents intentionally did not use contraceptives to the same extent as the other respondents.

6.3 Multivariate results on the realization of fertility intentions

The results of the multinomial regression analysis (Table 5) are presented with an emphasis on the factors that enable or constrain the realization of fertility intentions. As expected (hypothesis 2a), we found that being in a stable relationship was the central enabling factor associated with having formed and having realized positive childbearing intentions. Moreover, being in a stable partnership seems to have been a prerequisite for births that were initially unintended. In contrast, the lack of a partner decreased the likelihood of having formed positive fertility intentions, and thus reduced the chances of having had a child.¹³ Experiencing a partnership change, such as a separation or the start of a new partnership, was associated with consistent opposition to (further) childbearing; thus, these respondents were less likely to have realized a positive intention, but they were also less likely to have postponed the birth of a child. Hypothesis 2b therefore has to be further qualified. It holds only if the individuals who postponed or abandoned the birth of a child are compared with intentional parents (results available upon request). Taken together, the results confirmed that a change in the partnership biography – a factor which is often

¹³ We are aware that the group of intentional parents was strongly selective according to partnership status (Table 4). Without a partner, the chances of achieving parenthood intentionally were very low. Therefore, this finding should be interpreted with caution.

neglected in research – can have an impact on the intention-behavior nexus, and that being in a stable partnership is a prerequisite for an individual to form and realize a positive fertility intention.

Table 5: Multinomial logistic regression predicting patterns of the realization of fertility intentions (reference group: consistently opposed), relative risk ratios (RRR)

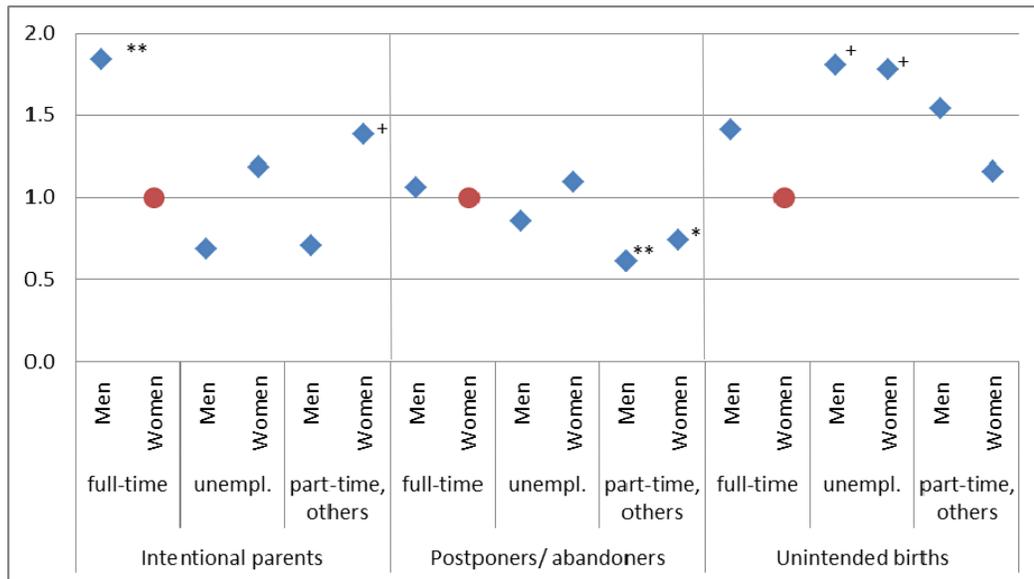
	Intentional parents		Postponers/ abandoners		Unintended births	
	RRR	P	RRR	p	RRR	P
Partnership status						
No partner	0.01	0.000	0.30	0.000	0.08	0.000
Same partner	1		1		1	
Change in partnership	0.21	0.000	0.67	0.001	0.82	0.317
Labor force status						
Full-time/self-employment	1		1		1	
Part-time/marginal employment	0.52	0.008	0.58	0.001	0.54	0.075
Unemployment	0.63	0.026	0.90	0.373	1.26	0.296
Other arrangements	0.88	0.376	0.67	0.000	1.23	0.300
Perception of social pressure						
No pressure by friends	1		1		1	
Pressure by friends	2.08	0.000	2.36	0.000	1.05	0.806
No pressure by parents	1		1		1	
Pressure by parents	3.52	0.000	2.42	0.000	1.25	0.226
Gender						
Men	1		1		1	
Women	1.04	0.764	1.13	0.152	0.89	0.464
Birth cohort						
1981-83	1		1		1	
1971-73	0.36	0.000	0.73	0.001	0.39	0.000
Parenthood status						
Childless	1		1		1	
Parents	1.03	0.844	0.59	0.000	1.68	0.007
Highest school certificate attained						
Low	1.32	0.080	1.13	0.279	1.15	0.462
Medium	1		1		1	
High	1.17	0.249	1.00	0.981	0.82	0.244
Religious attendance						
At least once a month	1.00	0.988	1.18	0.347	1.35	0.336
Several times a year	1		1		1	
Seldom/never/without confession	0.67	0.011	1.09	0.482	1.15	0.535
Place of residence						
East Germany	1		1		1	
West Germany	0.80	0.090	0.75	0.001	1.11	0.520
Contraceptive use						
Consistent	1		1		1	
Inconsistent	1.81	0.007	1.01	0.912	0.85	0.550
N	4.927					
Pseudo R ²	0.1702					

Source: German Family Panel, wave 1 to 3 (2008/09, 2009/10, 2010/11), own calculations.

Note: Controlled for missing values of religious attendance, consistency of contraceptive use, partnership status, labor force status, and social pressure.

Unemployment and marginal employment were expected to constrain the opportunities for the realization of positive fertility intentions (hypothesis 3a). The results support this assumption, as stable full-time employment was shown to have increased the chances that positive childbearing intentions would be realized, while part-time work or unemployment had a negative impact. Both part-time work and unemployment seem to have been associated with financial insecurity. In line with previous research which suggests that there are gender-specific employment effects (Berrington 2004; Régnier-Loilier and Vignoli 2011), further analysis (see Figure 2) revealed that the positive effect of stable full-time employment on intended parenthood largely applied to men. Men who were working full time were significantly more likely to have had an intended child than women who were working full time, whereas women who were working part time were somewhat more likely to have had a child (hypothesis 3b). These findings illustrate well the gendered assumptions embedded in employment relations in Germany, whereby men's full-time and women's part-time employment are considered most conducive to intentional parenthood. In addition, unemployed women and men were slightly more likely to have experienced an unintended birth than full-time working women. However, the causality is difficult to disentangle in this case. Generally, we argue that it is essential to take gender-specific norms regarding employment, particularly during the childbearing years, into consideration when investigating the intention-behavior link.

Figure 2: Results of an interaction of labor force status and gender in a multinomial logistic regression model, relative risk ratios (RRR)



Source: German Family Panel, wave 1 to 3 (2008/09, 2009/10, 2010/11), own calculations.

Note: These findings refer to an extension of the multinomial logistic regression model (Table 5). The reference group in the multinomial logistic regression model is made up of consistently opposed individuals. The reference category of the interaction term is made up of women in full-time employment (red dots).

In line with our expectations (hypothesis 4), an additional enabling impact of subjectively perceived social pressure on the realization of positive fertility intentions was found. In particular, the awareness of social pressure exerted by parents was shown to have increased the chances that respondents moved from positive intentions to behavior. The stronger effect of social pressure emanating from parents than from friends might indicate that parents had more important resources for childrearing. Compared to those who were consistently opposed to (further) childbearing, social pressure was more important for the women and men who postponed the birth of a child. It is quite likely that social pressure had an impact on the formation of positive intentions (Balbo and Mills 2011b), as well as on their realization.

The impact of *control variables* in our analysis on the realization of fertility intentions was largely in line with previous research. No significant gender differences could be detected. As was already stated, parents were more likely to have experienced a birth regardless of their intentions, and they were less likely to have postponed or abandoned their positive intentions. Their goal may have been to

reduce the spacing between the birth of siblings. The women and men of the younger birth cohort were more likely to have stuck to their positive intentions, whereas respondents of the older birth cohort had a higher likelihood of having concluded their family planning. No noticeable effect of education was found, despite previous research suggesting that having more education provides more economic or cognitive resources to anticipate the future and to realize fertility intentions accordingly. Religious attendance as an ideational factor was shown to have had little impact on the intention-behavior relationship. The women and men with little or no religious affiliation were less likely to have become intentional parents than those who attended religious services more regularly. As expected, the women and men who used contraceptives inconsistently had a higher likelihood of becoming parents intentionally than otherwise. A desire to have children or the opposite might have been the reason for using contraceptives more or less efficiently, or not at all.

7 Conclusion

The aim of the present study was to extend our knowledge of the intention-behavior link based on the analysis of recently available longitudinal data for Germany. To account as fully as possible for this relationship, the whole range of potential outcomes for women and men with positive, negative, and uncertain fertility intentions were included, which has rarely been done up to this point. We found that short-term fertility intentions had a certain degree of predictive power for subsequent behavioral outcomes, particularly when the intentions were negative. The results also showed that it was not just the direction of the intentions, but also their strength and degree of certainty that mattered for fertility behavior. At the positive end of the intentions spectrum, it was shown that not even half of the respondents with strong positive intentions were able to realize them within two years. This might indicate that, these days, conception is simply not as predictable as contraception is reliable; that the personal circumstances of respondents changed in ways that led to a postponement of fertility decisions; or that short-term fertility intentions were adapted in relation to changes in the life course. Future research on the nexus of fertility intentions and outcomes should also address the stability of fertility intentions across the life course, as there are plausible reasons to assume that

“once formed, intentions can change in many ways” (Bachrach and Morgan 2013: 472).

Another interesting result that calls for more attention is the relatively high share of so-called unintended births (28% of all pregnancies or births). Following Ajzen’s (2011) argument, we might assume that while the pregnancy itself was not intended, in light of the alternatives, the child actually was. Some of the individuals in this group had been uncertain about their intentions. For those with initial negative fertility intentions, it could be the case that they changed their minds after a contraceptive failure, or for a variety of other reasons. In general, the women and men who had a child despite having been undecided or negative in their intentions represent a serious challenge to the TPB framework, which is built on the idea that conscious intentions always precede actual behavior. One recent suggestion has been that we should rethink this idea by considering the proximate determinants of fertility more thoroughly, and by acknowledging that structural influences on the formation of intentions do not necessarily coincide with structural influences pertinent to their realization (Bachrach and Morgan 2013).

Our study was inspired by the research of Spéder and Kapitány (2009), but we deviated from their work in several important respects: i.e., we included women and men with undecided fertility intentions (around 7% of our sample), we considered a richer set of explanatory variables, and among those variables was the perception by respondents of social pressure. The single most important factor for the formation of positive fertility intentions and for the decision to carry a pregnancy to term, regardless of whether it was initially intended, was found to be a stable partnership. Thus, the lack of a partner, as well as changes in the partnership biography, are impediments to the realization of positive fertility intentions. However, due to low case numbers, we were unable to disentangle the impact of partnership dynamics more rigorously. The same caveat applies to dynamics within employment. To the best of our knowledge, we are the first to consider the impact of perceived social pressure on the realization of fertility intentions. While the importance of social network mechanisms in strengthening the explanatory power of the Theory of Planned Behavior has been acknowledged (Rossier and Bernardi 2009), a test of this assumption based on quantitative data has so far been very limited (Balbo and Mills 2011a/b). Our results suggest that social pressure exerted by parents and friends is

one example of the influence social networks have not only on the formation of positive fertility intentions, but also on their realization. The findings revealed that those respondents who perceived social pressure to have a child were the most likely to have had positive fertility intentions, and that the awareness of social pressure mattered for realization only among those with positive intentions. The suggested expansion of the TPB framework to include a direct impact of subjective norms on actual behavioral control therefore seems promising for further research. It should, however, be noted that the meaning of social pressure has not been clarified. It might imply different social mechanisms, such as social support, social learning, or social influence (Rossier and Bernardi 2009). Future research should therefore aim to provide us with a better understanding of what social pressure actually means.

8 Acknowledgments

This paper uses data from the German Family Panel pairfam, coordinated by Josef Brüderl, Johannes Huinink, Bernhard Nauck, and Sabine Walper. Pairfam is funded as a long-term project by the German Research Foundation (DFG).

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