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Abstract

This article focuses on the time frame of intentions to have a child. For both parents and childless people we compare those who want a child now with those who intend to have a child within the next three years. Based on the Theory of Planned Behaviour and using data from Norway (N=1,307), we investigate the role of attitudes, subjective norms and perceived behavioural control on these two different time frames in fertility intention. The results show that subjective norms have a significant effect on the timing of intentions to have a child for both childless people and parents: the more both groups feel that their intention to have a child is supported by their families and friends, the more likely they are to want a child now compared to within the next three years. It also show that positive attitudes have a significant effect on intending to have a child now rather than later for parents but not for childless people. Perceived behavioural control is a significant determinant for both groups: people who consider themselves better able to cope with having child are more likely to intend to have a child now rather than within the next three years. But this effect disappears when we control for demographic background variables, suggesting that the effect of perceived control on the timing of having a child varies considerably with personal circumstances.

Key words:

Fertility intentions; fertility timing; Theory of Planned Behavior; Norway

1. Introduction

Low fertility rates across Europe and changing childbearing behaviour have captured the attention of researchers, policymakers, and society at large. Changes such as decreasing fertility and ongoing postponement of childbearing are part of what have been described as the Second Demographic Transition (van de Kaa, 1987). For instance, the mean age of first birth among men and women in Norway was 28.1 and 30.9 respectively in 2009, which is 2.7 and 2.8 years higher than it was 20 years ago (Statistics Norway, 2010). These changes have been linked to ideational and cultural shifts in contemporary societies and the argument is that higher priorities of autonomy and self-fulfilment postpone childbearing and decrease fertility (Lesthaeghe & Surkyn, 1988). Another explanation for postponed childbearing, and especially motherhood, is linked to economic conditions. It has been argued that an important determinant of the timing of fertility is a woman's life-cycle earnings profile, where postponement is linked to lower cost of later births (Gustafsson, 2001). The question of how people make decisions about having children is an important issue. However, a topic in the demographic literature that up to now has received relatively little attention is the question about intended timing of childbearing. While most studies of fertility intentions deal with whether people intend to have a child or not, this article focuses on different time frames of fertility intentions. We analyse determinants of whether people who intend to have a child within the next three years want this child now or later. Answering questions about how people decide when they want to have a child contributes to more insight into the motivations of the changing trends of decreasing fertility and postponed childbearing.

In our study we focus on social psychological factors associated with development of childbearing intentions and make use of the Theory of Planned Behavior (TPB)[1] (Ajzen, 1991) which specifically considers the roles of norms, attitudes and a third psychological factor, perceived behavioural control, in the formation of intentions. We use data from the Norwegian Generations and Gender Survey (GGS)[2], which includes an adaptation of the TPB for the study of fertility decisions (Vikat et al., 2007). The data used in the analysis are from 2007, a year in which the total fertility level was 1.90 in Norway. Norway therefore represents a country with "highest-low" fertility level and most men and women become parents in Norway: 78% of men and 88% of women aged 45 had become parents in 2009 (Statistics Norway, 2010). This means that the timing aspects of having children are more pronounced than the question of whether or not to have children.

The article is structured as follows: The next section gives a brief introduction to the Theory of Planned Behavior and discusses how it is adapted to studies of fertility. Section 3 presents the research questions and derives six hypotheses. Section 4 describes the methods used in the analysis and the results are presented in section 5. The final section gives a summary and a discussion of the findings.

[1] TPB = Theory of Planned Behavior.

[2] GGS = Generations and Gender Survey.

2. The Theory of Planned Behavior and fertility intentions

The TPB is a social psychological model and an extension of the earlier theory of reasoned action (Fishbein & Ajzen, 1975). While it is most commonly used to explain or predict behaviours – such as condom use (Albarracin et al., 2001) – it can also be used to understand and predict attainment of goals such as weight lose, a certain test score (Ajzen, 2005) and, we argue, having a child. In both cases, intention mediates between a set of explanatory factors and the outcome (performance of the behaviour or attainment of the goal).

According to the TPB, a person's intentions are formed from three sets of factors: their attitudes, subjective norms and perceived behavioural control. Attitudes represent a person's internal evaluation that performing the behaviour or attaining the goal will have positive or negative outcomes for them. A subjective norm is a person's perception of the psychological support or pressure that members of their close social circle exert on their performing the behaviour or attaining the goal; they are 'subjective' in the sense that they need not accurately match the actual opinions of other people or wider societal norms. Perceived behavioural control refers to the person's perception of the ease or difficulty of performing the behaviour or attaining the goal; as with subjective norms, the emphasis is on the individual's perceptions or beliefs about the situation, for example a wealthy person might feel that they cannot afford to have a child while someone who is less well-off might believe that they have sufficient control over their finances to have a child, independent of actual income.

A number of variables normally studied in demographic research become 'external' variables in social psychological studies because they are external to the cognitive structure associated with making a specific decision (Ajzen, 2005). The TPB distinguishes between two types of external variables. Individual background factors, including income, education and, in the case of the decision to have a child, the number of children (parity), may influence the construction of intentions by affecting attitudes, subjective norms and perceived behavioural control. Aspects of the environment, including for example, institutional provision of support for childcare or working parents, are characterised as actual control factors, or actual enablers and constraints. The existence of external factors that prevent an individual from carrying out their intention may be reflected with more or less accuracy in perceived behavioural control. This type of external factor can also act as a real barrier to realisation of intentions if it prevents a person with a clear intention from acting on it.

Whether the TPB is used to predict behaviour or goal attainment, the fundamental explanatory components of the theory are the same. Indeed, the only difference between using the TPB as a model of goal attainment rather than behaviour is that intention may provide a less reliable explanation of goal attainment. Goals are often distant in time from formation of an intention, and reliant on several

intermediate behaviours[3] which might themselves be subject to a difficult decision making process, not to mention many intervening factors (e.g., loss of a partner or fecundity, or simply changing one's mind). On the other hand, research on performing a behaviour typically concerns outcomes which are more immediate and reliant on fewer or less complex intervening behaviours (such as carrying a condom in anticipation of a sexual encounter). Nonetheless, the ability of intention to predict goal attainment is impressive: in the studies summarised by Ajzen (2005, pp. 120-122), the multiple correlation between intentions and goal attainment in three studies ranged from .65 to .72.

Within demography, there is a long history of research directed toward explaining or predicting intention to have a child, much of it within the reasoned action tradition of the TPB (Billari, Philipov, & Testa, 2009; Jaccard & Davidson, 1975). To date, this research has focused primarily on the decision to have a child (represented by intention to have a child) relative to the decision to *not* have a child, but the literature of both fertility intentions and the TPB suggest that it is also important to understand the immediacy or timing of the intention. Miller and Pasta (1995) analyse the effect of child-number intentions, child-timing intentions and the certainty of childbearing intentions on prospective behaviour among married couples. They find that child-timing intentions are the most important predictors for fertility behaviour over a 3 ½ year period. The importance of the timeframe of intentions was also underlined by Schoen, Astone, Kim and Nathanson (1999) who observed that an intention with a shorter time frame led more often to actual births than long-term intention. The issue of the temporal stability of intentions is also raised in general terms by Fishbein and Ajzen (2010) who specify that the longer the time interval between forming an intention and performing the behaviour (or attaining the goal), the more likely it is that intentions change in response to other events. In this paper, we focus on the timing of the intention to have a child, and examine differences between the attitudes, subjective norms and perceived behavioural control of people who intend to have a child in the very short term and those of people whose intention to have a child is longer term. In general terms, we propose that the system of relationships between attitudes, subjective norms and perceived behavioural control is stronger when the intention is more immediate than when intention is longer term and therefore less stable.

A model of how the TPB is used in this article is shown in Figure 1. Although not included in this study, we show for completeness the goal toward which the decision making system is directed, to have a child in the foreseen time period. Our article focuses, however, on the antecedent intention, the intention to have a child. In particular, we are concerned with the timing of the intention, whether to have a child in the short term (now) or to postpone childbearing for up to three years[4]. In line with the TPB, the figure shows how fertility timing intentions may be formed from three sets of factors: attitudes, subjective norms and perceived behavioural control. The factors themselves are shaped by background

[3] Such as, in the case of person without a partner who intends to have a child, either enrolling in an assisted conception program or finding a partner and having sex without contraception.

[4] As we explain later, the timing of the delay is constrained by data availability.

factors and – under ideal conditions of measurement and operationalisation of the factors – these background variables should not have a direct effect on timing of the intention or the outcome. In addition, the model includes "actual enablers and constraints" which can have an impact on the perceived behavioural control, opening up the possibility of studying the extent to which their effect on intention is fully mediated by perceptions of control. In our application of the TPB, then, the dependent variable is the timing of intention to have a child, and we test if attitudes, perceived norms and perceived behavioural control have a significant effect on the time frame. An analysis of the time frame of the intention will give new insight how intentions are built up and what factors individuals take into account at different points of time when they intend to have a child.

[FIGURE 1 in around here]

2.1. Attitudes

Demographic studies have shown quite strong effects of attitudes on fertility intentions, e.g. attitudes toward abortion are associated with intention to have an abortion or not (Miller & Pasta, 1994); attitudes toward gender equality are associated with the decision to have a child (Moors, 2008); and general positive and negative attitudes are associated with childbearing intentions (Barber, 2001). The TPB does not explicitly distinguish between positive and negative attitudes, but this distinction has been found useful in the fertility domain where intention to have a child can be seen as a function of both the expected benefits and the expected negative effects of having a child on one's life (Billari et al., 2009; Philipov, Spéder, & Billari, 2006). The mechanism is the following: the more positive or beneficial the expected outcome of having a child to an individual the more positive their attitude towards childbearing, and thus the more likely they will be to decide to have a child; similarly, the more a person expects to lose or to have to give up if they have a child, the more negative their attitude, and the less likely they will be to decide to have a child. We expect that attitudes will play a stronger role in the decision to have a child now than the decision to have a child later because the shorter the time frame, the better individuals can predict their actual life situation.

2.2. Subjective norms

There has been little study of the influence of subjective norms (as distinct from societal norms) on childbearing intentions. Some indications that subjective norms might be influential come from studies that show that social networks have a strong influence on childbearing intentions (e.g., Bühler & Fratczak, 2007; South & Baumer, 2000) and that girls' childbearing intentions are influenced by their perceptions of their friends' experiences as mothers (Bernardi, Keim, & von der Lippe, 2007).

The literature around the Second Demographic Transition argues that a move from normative pressure to individual autonomy is one of the important factors in understanding demographic change

(Lesthaeghe, 1995; van de Kaa, 1987). If this is the case, subjective norms might be expected to have little or no influence on formation of fertility intentions, particularly in countries such as Norway, a society which is often described as individualistic.

On the other hand, Bühler and Philipov (2005) argue that individuals do not live in isolation, but are embedded in social environments that influence their preferences and shape their opportunities to follow particular courses of action by providing valuable resources to them. If this is the case, social influences are likely to have an effect on childbearing intentions, whether the costs of having a child are high or low, and the approval or disapproval of significant others can be expected to influence fertility decisions even in those countries where individual autonomy is most spread. We would therefore expect that individuals who perceive that they have the psychological and, if necessary, material support of significant others, will be more likely to form concrete intentions to have a child now rather than later.

2.3. Perceived behavioural control

Some circumstances and factors are thought to enable the decision to have a(nother) child, whereas other circumstances and factors are thought to hamper it. It is important to underline that it is an individual's perception that they are able to overcome constraints on having a(nother) child that is crucial here . Factors that might come into play include perceived ability to afford a(nother) child (regardless of actual ability) and the perceived impact of policy measures on ability to bring up a(nother) child. Literature that has specifically examined the influence of perceived behavioural control on the formation of fertility intentions is rare, although Liefbroer (2008) has proposed that control may be a critical factor. Ajzen (2005) notes that intentions are latent behaviours that are more likely to be carried out when the individual feels 'the time is right' and it will be possible to overcome barriers (i.e., when perceived control is high). Thus, we expect that higher perceived behavioural control will be associated with intentions to have a child now rather than later.

2.4. Background factors

A particularly important background factor for the prediction of childbearing intentions is parity, or the number of children that the decision-maker currently has (Morgan, 1981; Yamaguchi & Ferguson, 1995). Intention to have a first child is qualitatively different from the decision to have subsequent children because the decision to have a first child marks a crucial transition in one's life course, the decision to become a parent. Accordingly, researchers find that attitudes towards having a child play a different role in the decision to have one's first child as distinct from subsequent children (Billari et al., 2009; Philipov et al., 2006). In this study, we follow the convention of other studies of fertility intention and behaviour and model the decision to have a first and a subsequent child separately to recognise the two distinct contexts within which these decisions are made. This approach allows identification of differences in the effects of attitudes, and potentially, subjective norms and perceived control, on the

timing of the intentions of parents, who can draw on their experiences as they evaluate their decision, and childless people, who are making the decision to have a child for the first time.

The demographic background variables modelled in this study are: partnership status, time since last birth, number of children still wanted, age, sex and education. The importance of including partnership status when analyzing fertility intentions and behaviour has been pointed out in several studies since, without a partner, fertility intentions are rather difficult to achieve (e.g. Schoen et al. 1999; Thomson, 1997; Voas, 2003). Age and gender are also been shown to have a significant influence on fertility intentions. For instance, it has been found that certainty of intentions increases with age (Morgan, 1981). One can also expect a difference between the two sexes, as the consequences of a childbearing intention are initially stronger for women than for men. Women have to be pregnant and bear the risk of a pregnancy and it has been pointed out that role conflicts between family, work and leisure are traditionally stronger for women than for men (Barber, 2001). Thus, it might be easier for men to formulate a concrete fertility intention than for women, although this might not be the case in Norway where women have a higher general desire for childbearing than men (Lyngstad & Noack, 2005).

2.5. Actual enablers and constraints

The effect of actual enablers and constraints on intentions is usually estimated in TPB research by studying the effect on intentions of the mediating variable, perceived behavioural control. It is possible, however, to test whether perceived behavioural control includes – as the theory proposes – evaluation of actual enablers and constraints by including both perceptual and objective measures of behavioural control in modeling. In the GGS several items were constructed to evaluate perceived behavioural control by asking to what extent the decision to have a(nother) child during the next three years depends on, among other things, the individual's economic situation, work, housing situation and health. By including control variables for actual income, employment status, dwelling size and health status in the analysis, it is possible to test if individuals' perceptions of control over these items are independent of actual control. If perceived behavioural control still has explanatory power, when controlling for objective measures of these items, the factor captures more than the objective situation of the respondent in these fields (Billari, Philipov, & Testa, 2005).

3. Hypotheses

Two research questions guide our analysis. The first is whether attitudes, social norms and perceived behavioural control influence the timing of childbearing intentions among persons in Norway. The second research question is whether these factors operate differently on the time frame in intentions towards the transition to parenthood and intentions towards having a subsequent child. For these two research questions we have developed the following six hypotheses:

H1: The stronger a person's positive attitude towards the outcomes of having a(nother) child, the more likely it is that they intend to have a child now compared to within the next three years.

H2: The stronger a person's negative attitudes towards the outcomes of having a(nother) child, the less likely it is that they intend to have a child now compared to within the next three years.

H3: The stronger a person's sense of normative pressure to have a(nother) child, the more likely it is that they intend to have a child now compared to within the next three years.

H4: The stronger a person's perception of their ability to overcome constraints associated with having a(nother) child, the more likely it is that they intend to have a child now compared to within the next three years.

H5: The effect of perceived behaviour control remains significant when controlling for external variables that reflect actual constraints on having a(nother) child.

H6: Subjective norms have more influence on first birth than subsequent birth, while attitudes and perceived behavioural control have more influence on subsequent births than first birth.

The first five hypotheses refer to the first research question, and the sixth hypothesis refers to the second research question. The first hypothesis (H1) is based on the assumption that when a person has strong positive attitudes to the outcome of having a(nother) child, they will be more certain in their fertility intentions, and therefore more likely to want a child now rather than within the next three years. On the other hand (H2), negative attitudes to the outcome of having a child will produce less certainty and persons will be less likely to want a child now compared to some time within the next three years. The argument behind the third hypothesis (H3) is that, if there is a perception that members of one's social network think a person should have a(nother) child, this will reflect social acceptance of having a(nother) child and availability of social support, leading to more certainty in childbearing plans and thus a stronger likelihood of wanting a child now. The assumption behind the fourth hypothesis (H4) is that when a person feels more capable of overcoming the constraints of having a(nother) child, they are more likely to want a child now rather than later. The argument behind the fifth hypothesis (H5) is that the actual barriers to having a child can be accurately identified by individuals, and for this reason, when actual enablers and constraints are included in models of fertility decision making, *perceived* behavioural control fully mediates their effect on intention.

For the sixth hypothesis (H6) we argue that the pattern of social psychological influences on the timing of the decision to become a parent differs from that of the decision to have a subsequent child. Parents can use their experiences as parents in their decision-making about when to have another child. Thus their experiences as parents will affect their attitudes to the expected consequences of having another child and their perception of whether they are able to have another child, both of which we expect to have a stronger effect for parents than for childless decision-makers. On the other hand, most people become a parent in Norway and one can argue that social pressure about when to become a parent

might be more important than when to have another child. We therefore expect that the decision to become a parent is more strongly influenced by subjective norms than the decision to have another child.

4. Implementation of the Theory of Planned Behavior and methods

The Norwegian GGS data were gathered in 2007. With respect to region, sex and age, a country representative sampling frame was drawn randomly from the population. All variables used in this article were obtained through computer-assisted telephone interviews, which had a response rate of 60%. The dataset, with in total 14,892 respondents, is country representative (Lappegård & Veenstra, 2010). This study uses data from all respondents aged 18 to 40 who were physically able to have a child but were not currently pregnant (if female) or whose female partner was not currently pregnant (if male), who intended to have a child during the next three years, and who provided answers to questions used to operationalise the TPB in the GGS.[5]

4.1. Dependent variable: Timing of intention to have a child

The dependent variable in our analysis is the timing of intention to have a child. It takes two values, *now*, or *within the next three years*. Two variables were used to construct this distinction. Respondents were asked: "Do you want to have a(nother) child now?" and later in the questionnaire they were asked *"Do you intend to have a(nother) child within the next three years?"*, with the response categories *yes* or *no* for both questions. [6] When responses to the two questions are combined we get the distribution shown in Table 1.

[Table 1 in around here]

In our analysis we only include those who intend a child within the next three years and we separate if they want also a child now or not. Due to missing values in some of the independent variables, we also excluded a further 88 cases. Our final sample therefore comprises 1,307, among them, 758 are childless people and 549 are parents.

4.2. Attitudes, subjective norms and perceived behavioural control

The operationalisation of the TPB used in the GGS is described by Vikat et al., 2007. In addition to questions about intention to have a child, three blocks of questions are used to operationalise attitudes,

[5] In the Norwegian GGS only people who intended to have a child within the next three years were asked the questions used to implement the TPB.

[6] Although "wanting" a child can be seen as less concrete than "intending" to have a child, the context of the first question emphasized the timing of having a child *now*, so we argue that a positive answer to this question indicates a more concrete birth intention than a negative answer for this sample of respondents, all of whom say they intend to have a child within the next three years.

subjective norms and perceived behavioural control. The items appear in Table 2. Ten items are available to characterise attitudes to having a child. Each of these items is introduced by the question: *"Suppose you will have a(nother) child within the next three years. On a scale from 0 to 10, where 0 means 'much worse' and 10 means 'much better', how would this effect …"*. Subjective norms are measured through three questions in the GGS. The respondents were asked to rate the extent to which they agree that different groups of people think they should have a(nother) child. All three items were introduced by the following question: *"Although you may feel that the decision of whether or not to have a(nother) child is yours, it is likely that others have opinions about what you should do. On a scale from 0 to 10, where 0 means 'strongly disagree' and 10 means 'strongly agree', to what extent do you agree with these statements?."* Finally, the GGS provides ten items to capture perceived behavioural control. The respondents answered the question: *"On a scale from 0 to 10, where 0 means 'not at all' and 10 means 'a great deal', how would your decision about having a(nother) child within the next three years be affected by …"*. In the case of perceived behavioural control we reversed the scale, because this made it easier to show the possible positive effect of perceived ability to overcome constraints with a positive coefficient in the regression model.

[Table 2 in around here]

Because these scales had not previously been used in the Norwegian context, we used factor analysis to confirm that the items acted as valid and reliable measures of the proposed TPB variables (Brown, 2006). We used alpha factor analysis with oblimin rotation and tested both a three factor solution (the proposed factors were attitudes, subjective norms and perceived behavioural control) and a four factor solution (which allowed for attitudes to fall into two groups, as they did in Billari et al., 2009). Three items were excluded due to low communality, i.e. there was little correlation with the other variables. Two of these items had been designed to measure attitudes ("the possibility to do what you want" and "your partner's employment opportunities") and the third omitted item ("having a suitable partner") was designed to measure perceived behavioural control. As Table 3 shows, four factors were identified: two attitudes factors, one factor to measure subjective norm and one to measure perceived behavioural control. The existence of two attitudes items is consistent with the two attitudes factors found by Billari et al., 2009. We named the first of these factors "Positive Attitudes" because it represents beliefs about the benefits of having a child, while we named the second attitudes factor, "Negative Attitudes" because it represents beliefs about the costs or personal losses associated with having a child.

There is a possibility that different groups rate the items differently and thereby end up with different factor structures. In order to exclude such a possibility we ran the factor analysis separately for men and women, and for parents and childless people. The findings (not reported) showed that we could

use the same factors when running separate models for childless and parents. Mean TPB factor scores for childless people and parents are shown in Table 3.

[Table 3 in around here]

4.3. Objective measures of control

As noted earlier, concerns individuals' perceptions that they will be able to overcome difficulties that they think will influence their decision. The data available from the Norwegian GGS made it possible to include objective measures of the respondents' situation and thereby test if perceived behavioural control fully mediated their effect on intention as proposed by the TPB. The variables that we included were income, employment status, dwelling size and health status of the respondent. Income is included to control for the economic situation and is measured as income after tax grouped into four quartiles (separate quartiles for parents and childless people were used). Employment status is included to control for work situation and is divided into three groups: working in a permanent position or self-employed, working in a temporary position and not working (primarily persons in education or unemployed, but also homemakers, mainly women). Dwelling size is included to control for housing situation and the variable captures number of rooms by household numbers. We distinguish between no additional free rooms, one additional free room and two or more additional free rooms. Health status is based on respondents own reports of whether they define their own health as bad and whether they report having a long-lasting illness or disability which limits them in carrying out normal everyday activities. Those who report bad health or suffer from serious illness and report that this limits them, are in one group (serious illness or bad health) and those who do not report such health problems are in another group.

4.4. Demographic background variables

In addition, up to six demographic background variables are included in the analysis: partnership status, time since last birth (for parents), number of children (still) wanted, age, sex and education. Partnership status is divided between: living with a partner, having a partner without living together, no partner. It can be argued that people without partner who intend to have a child are more likely to intend to have that child later rather than now, as are people who have a partner but who are not currently living with them. We do not distinguish married couples from non-married couples.[7] In the models for parents, we include time since last birth or the age of the youngest child in the household with three values: 0 years, 1-3 years and 4 or more years. Intended number of children (after controlling for children already born) is separated into three groups: intend to have 1 (more) child, 2 (more) children and at least 3 (more)

[7] The main issue in this analysis is whether respondents have a partner or not and not whether co-residing couples are married or not. Furthermore, in the Norwegian context, cohabitations and marriages are quite similar and the proportion of children born in both types of union is the same (Statistics Norway, 2010).

children. Age is divided into four groups: 18-24 years, 25-29 years, 30-34 years, and 35-40 years. We distinguish between three levels of highest achieved education: low includes compulsory education, medium reaches up to upper secondary school and high captures degrees from university colleges and universities. The proportion of respondents in each category of these variables is presented in Table 4.

[Table 4 in around here]

5. Results

The results are presented in Table 5. As intention to have a first child is qualitatively different from the decision to have subsequent children we run parity-specific models.[8] The analyses are made step-wise and we present three models: Model I includes only the TPB factors, Model II in addition controls for the "objective" measures of control to see if they have any additional effect on the timing of fertility intentions, and Model III includes the demographic background variables. The results are presented as odds ratio and the factors in the TPB are standardised with mean equal to zero and standard deviation equal to one in the regression analysis.

5.1. The Theory of Planned Behavior factors

Here we discuss the results for the cognitive factors in the TPB, starting with the estimates for childless people. Already in Model I, which includes only the four TPB factors, we see that only subjective norms and perceived behavioural control have a significant effect on the likelihood of wanting a first child now rather than more generally within the next three years. Neither negative nor positive attitudes have a significant effect on this decision. When we control for objective measures of perceived behavioural control in Model II, the significant effect of subjective norms and perceived behavioural control remains, but when demographic background factors are included in Model III, only subjective norms are significant with an odds ratio of 1.34. For parents, we see that in Model I, with the exception of negative attitudes, all factors of the TPB have a significant effect on the likelihood of wanting a child now relative to within the next three years. Perceived behavioural control and subjective norms have highly significant effects that are almost equally strong, with odds ratios of approximately 1.32 and 1.36. Positive attitudes also have a clear and significant effect of 1.27. When controlling for objective measures of perceived behavioural control in Model II, the three factors remain significant, but when also including the demographic variables in Model III, the effect of subjective norms becomes stronger (1.50) and the effect of positive attitudes remains almost the same (1.29), while the effect of perceived behavioural control is no longer significant.

[8] We only distinguish between childless people and parents, even if it theoretically would be interesting to separate the models by parities for parents to see whether the factors of TPB vary by number of children. Unfortunately, small numbers makes it impossible to distinguish further.

Our two research questions were whether attitudes, subjective norms and perceived behavioural control influence the timing of childbearing intentions and whether these factors operate differently on the timing of intended first child and higher parities. It is clear that the factors do influence whether persons want a child now or within the next three years, and there are differences between childless people and parents in how these factors operate. In the following we will discuss the results in relation to the hypotheses, focusing on the different patterns of effects for childless people and parents.

[Table 5 in around here]

The first two hypotheses (H1 and H2), which claim that the strength of positive and negative attitudes influences the timing of intention to have a child, were only supported for parents and only for the positive consequences of having another child. One explanation for attitudes having no effect among childless people is that because most people have at least one child, attitudes to having one's first child are stable whether a person wants a child now or later. That we only find a significant effect for positive attitudes for parents (and not negative attitudes) may be related to the fact that all respondents in the sample intend to have a child. It is more likely that negative attitudes have an effect on the formulation of an intention not to have a child than on the timing of when to have a child once the decision to have a child has been made. This interpretation is supported by the results of the Bulgarian study where negative attitudes (described as cost factors) had a negative effect on formation of intention to have a(nother) child (Billari et al., 2009). In addition, the negative consequences of having a(nother) child on employment opportunities and financial situation may be less relevant for the formation of childbearing plans in Norway than in other countries. When the welfare state provides parents with generous family policies, they experience generally lower cost of having children than parents in countries with less support.

The third hypothesis (H3), that an individual's sense of normative pressure to have a(nother) child influences the timing of intention to have a child, was supported both for childless people and for parents. Compared to the other factors, subjective norms had the strongest effect and remained clearly significant in all models. This suggests that perceived support and social acceptance of having a(nother) child is highly important for the timing of the intention. If significant others are not believed to share the view that the person should have a(nother) child, this can lead to a delay in a planned birth and, by extension, a delay in an actual birth. In the theoretical section, we discussed whether individual autonomy might be displacing normative pressure, particularly in individualistic countries such as Norway. Our results show that this is clearly not the case. The approval of significant others, and therefore probable anticipated access to support and help from the social network, is still important and seems to have strong influence the planned timing of having a child.

The fourth hypothesis (H4) claims that a positive perception of the ability to overcome constraints associated with having a(nother) child makes it more likely that a person will intend to have a child now rather than later. This effect was observed in Model I, and in Model II. When controlling for actual life situation through objective measures of income, housing situation, work and health status (Model II), the decision to have (a)nother child remains influenced by perception of one's own abilities to overcome constraints that they might pose. This means that the fifth hypothesis (H5), which claims that the effect of perceived behavioural control remains significant when controlling for the actual constraints of having a(nother) child, was supported. This suggests that perceptions of behavioural control are able to capture the objective situation of the respondent. Only when we control for demographic variables (Model III), does the significant effect of perceived behavioural control disappear. This result was unexpected, and will be discussed more fully in the conclusions.

We now turn to the second research question: Whether the factors of the TPB operate differently on the timing of intentions towards the transition to parenthood and the transition to higher parity. For this research question we hypothesised (H6) that attitudes and perceived behavioural control will have more influence on the timing of subsequent births than first birth, while subjective norms have more influence on the timing of intentions for the first birth. This hypothesis was only confirmed for the part of attitudes. Subjective norms seem to have equally strong influence on whether childless people and parents want a child now relative to within the next three years. Both groups seem to be influenced by their sense of normative pressure to have a(nother) child. The effects of perceived behavioural control only influence the timing of the fertility intention when there is no control for demographic variables. While the odds ratio are somewhat higher in the models for parents than in the models for childless people, the general picture seems to be that perceived control influences childless people and parents in similar ways. However, as stated in the hypothesis, the effects of positive attitudes are only significant among parents and indicate that attitudes do not influence decision-making about whether a person wants their first child now or later (within the next three years). This means, when we look at factors that influence the time frame of fertility intentions, the differences between childless people and parents are rather small.

In total we find that the factors of the TPB influence the time frame of fertility intentions and thereby give us new insight how these intentions get formed. One could argue that negative attitudes do not have any effect, while positive attitudes only matter for parents and that attitudes represent an important part of the TPB. But in return to this argument, one has to recall that all persons in the study had a fertility intention and therefore the here presented results show what is required to strengthen this intention. They demonstrate that behavioural control is a pre-condition and that high perceived social acceptance for a(nother) child makes it easier to want this child now. Negative attitudes would most likely have a significant impact if one would distinguish between having and having not a fertility intention. But as all persons in the study wanted a child within the next three years, negative attitudes have no impact if

they also want it now. The same is true for the positive attitudes among childless, but not for parents. Combined with their experience as parents from before, a high level of positive attitudes leads more often to a prompt fertility intention.

5.2. Effect of objective measures of control

In this section, we comment on the observed effects on the timing of intention to have a(nother) child of the objective control factors included in Model II. First, we find no significant effect of income or employment status. In general, fertility patterns are often associated with differences in these factors, but in terms of planning whether to have a(nother) child now or within the next three years they do not seem to give rise to any differences. Housing situation, on the other hand, seems to be related to fertility intentions: those with several free rooms have a higher odds ratio for wanting a child now than the reference group, people with no free rooms. Those with several free rooms might have already chosen an adequate apartment or house for a family in order to fulfil their childbearing plans. Finally, health status has a significant effect only among childless people, i.e. those with a self-reported bad health status or serious illness compared to those without health problems are more likely to want a child now rather than within the next three years. At first glance, this might come as a surprise, but as all persons included here intend to have a child, this suggests that those with health problems might be afraid that their health will be even worse in the future and therefore want to fulfil their intention to become a parent as soon as possible.

An interesting question here is whether there is an interaction effect between perceived behavioural control and any external variables that might influence actual or perceived constraints on having a(nother) child. It might be that people in certain situations have a stronger perception that they are able to overcome the constraints of having a child than other people. When testing for interaction effects in both Model II and Model III (non-reported estimates) we only find significant effects among parents; the effect of perceived behavioural control does not vary across people in different situations for childless people. For parents, we find a positive interaction between perceived behavioural control and housing situation and between perceived behavioural control and health status (for housing situation, only in Model II). The positive effect of perceived behavioural control on parents' intentions to have a child now relative to within the next three years are stronger among parents with two or more free rooms than those with no free rooms. As we discussed above, people with extra room might have organised this in order to fulfil their fertility plans, which in turn might give these parents some extra confidence that they are able to overcome the constraints of having another child compared to parents with no extra rooms in their house. The positive effect of perceived behavioural control is stronger among parents who report serious illness or bad health. People in bad health who are already parents and who want another child are a select group. These parents have shown that they are able to have a

child even with bad health, which might have given them a stronger perception that they are able to overcome the constraints of having another child than persons that have no serious illness or bad health.

5.3. Effect of demographic background variables

Turing to the demographic variables: Living with a partner has no effect on timing of the intention to have a child among parents, while childless people with a non-residential partner have a lower likelihood of wanting a child now relative to within the next three years than those without a partner. Childless people without any partner might be more certain of their plans to have a child while childless people with a non-resident partner might be following a life-course plan where, for instance, having a child is part of the plan but not until they are living with their partner. Time since last birth and intended number of additional children both have a positive effect among parents; the longer the time-span and the higher the number of intended children the higher likelihood of wanting a child now relative to within the next three years. The intended number of children makes no difference among childless people, indicating that the transition to parenthood itself is the important transition for these people, not how many children they plan to have all in all. There are more differences by age and gender among childless people than among parents. Childless women have a stronger likelihood of wanting a child now relative to within the next three years than childless men. Among parents there are no such differences by sex. Age has a very strong effect among childless people on the timing of the fertility intentions should occur. This can be related to the observation that the level of certainty of fertility intention increases with age (Morgan, 1981). Among parents, only the oldest have a significantly higher odds ratio of wanting a child now compared to child intentions during the next three years. This result is not surprising, as for this age group, and especially the women among them, it is more urgent to fulfil their additional child wish, while the younger parents have more time to postpone additional childbearing. High educational attainment is associated with less concrete childbearing plans, which are found both among childless people and parents.

We tested to see which demographic variables might be responsible for the disappearance of the significant effect of perceived behavioural control in Model III. Among childless people, age is the most important factor, especially in combination with intended family size or partner status. This means that these variables have a stronger effect on the timing of the fertility intentions of childless people than their perception that they are able to overcome constraints of having a child. Among parents, perceived behavioural control loses its significant effect when either the age of the youngest child or the intended number of children is included in the model. This means that it is the structure of the planned family (the spacing between the siblings and the total number of wanted children) that overrules the effect of the perceived behavioural control for the timing of fertility intentions for parents.

6. Summary and conclusion

In this article we presented analysis of the role of attitudes, subjective norms and perceived behavioural control on parity-specific fertility intentions to have a child now compared to within the next three years. The theoretical framework was based on the theory of planned behavior (Ajzen, 1985, 2005) and implemented into demographic analysis through the Generations and Gender Survey (Vikat et al., 2007). Analysis of fertility intentions is normally focused on whether persons intend to have a child within a certain time frame or not, while the analysis in this article focuses on the timing of the intended birth among persons who all have already formed an intention to have a child. Instead of focusing on the determinants of fertility intentions, we have focused on influences on whether persons who have already formed an intention to have a child intend to have that child now or within the next three years.

Our analysis provides several new insights. First, positive attitudes are a significant determinant of intending to have a child now among parents, even when background factors are controlled for. This suggests that the formation of parents' fertility intentions is influenced by their experiences of positive consequences of having a child. On the other hand, negative attitudes or expected negative outcomes of having a child do not influence the time frame of the intention to have a child. If we were looking at differences in the formation of intention to have a child relative to the intention to not have a child, it is more likely that negative attitudes would influence the decision. Third, the decision to have a child now is influenced by an individual's sense of normative pressure. The opinion of significant others is therefore an important determinant for the time frame of a formed fertility intention. Fourth, perceived behavioural control is a significant determinant for both childless people and parents, but only as long as demographic factors are not controlled for. While people with stronger perceptions that they are able to cope with having a child are more likely to intend to have a child now than within the next three years, inclusion of age, partnership status and (particularly among parents) desired family structure and educational attainment, makes this effect disappear. Lastly, cognitive factors seem to operate somewhat differently as childless people and parents make decisions about whether to have a child now or later, but the main difference is that positive attitudes have an effect only for parents.

Other studies have shown that the social psychological factors included in the TPB influence the formation of fertility intentions (Billari et al., 2009). The main conclusion from this article is that such factors also influence the time frame of formed intentions to have a child. Comparison between the work of Billari et al. and this study also suggests that the TPB provides insights into fertility decision making not only in the lowest-low national fertility context in which their research was conducted but also in higher fertility contexts.

This article also provides some insights into how social psychological factors can be combined with socio-economic and demographic factors to improve understanding of fertility decision making,

while at the same time raising some additional questions and suggesting opportunities for further research. We have shown that the TPB provides a model of how the cognitive factors that are taken into account when people make decisions about having a child might reflect the other 'objective' factors defined by their personal background and institutional contexts that might either enable or act as barriers to having a child. Our results show that perceived behavioural control can act as an accurate indicator of actual barriers and constraints, at least in the context of a country with strong institutional support for childrearing such as Norway, but further research would be needed to discover whether this is the case in other policy contexts.

On the other hand, the failure of perceived behavioural control to have an effect once individual background factors were taken into account raises the question of whether the TPB does not adequately account for the effect of background factors or whether some other mechanism is at play. One possible explanation is that perceived behavioural control is measured imperfectly in the GGS. The items measured the perceived importance of different constraints to the respondent, but do not directly measure the extent to which the individual feels they have control over those constraints. When measurement of a mediating variable is flawed, antecedent variables may incorrectly appear to have a direct effect, a possibility in this case. Another possible explanation is that different background characteristics create different contexts within which the effects of the TPB factors affect the timing of intentions to have a child in different ways. There might be very different perceptions of behavioural control among subgroups of the population and very different effects of perceived behavioural control on the timing of the fertility intention, and these might cancel out the aggregate effect. One principle of TPB research is that each set of relationships between attitudes, subjective norms and perceived behavioural control is specific to the context within which they are formed (the principle of compatibility, Fishbein and Ajzen, 2010). Different sets of background factors can define different contexts, e.g., people who already have a young child might reason quite differently about having another child now than those who have an older child, different parities – not just a parent as distinct from childless, as we were able to study in this article – might define different contexts, and factors that are important to older women might be of no consequence for women in different age groups. With sufficient data, future research could specifically study contextual differences.

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Figure 1. A model of fertility decision-making based on the Theory of Planned Behavior

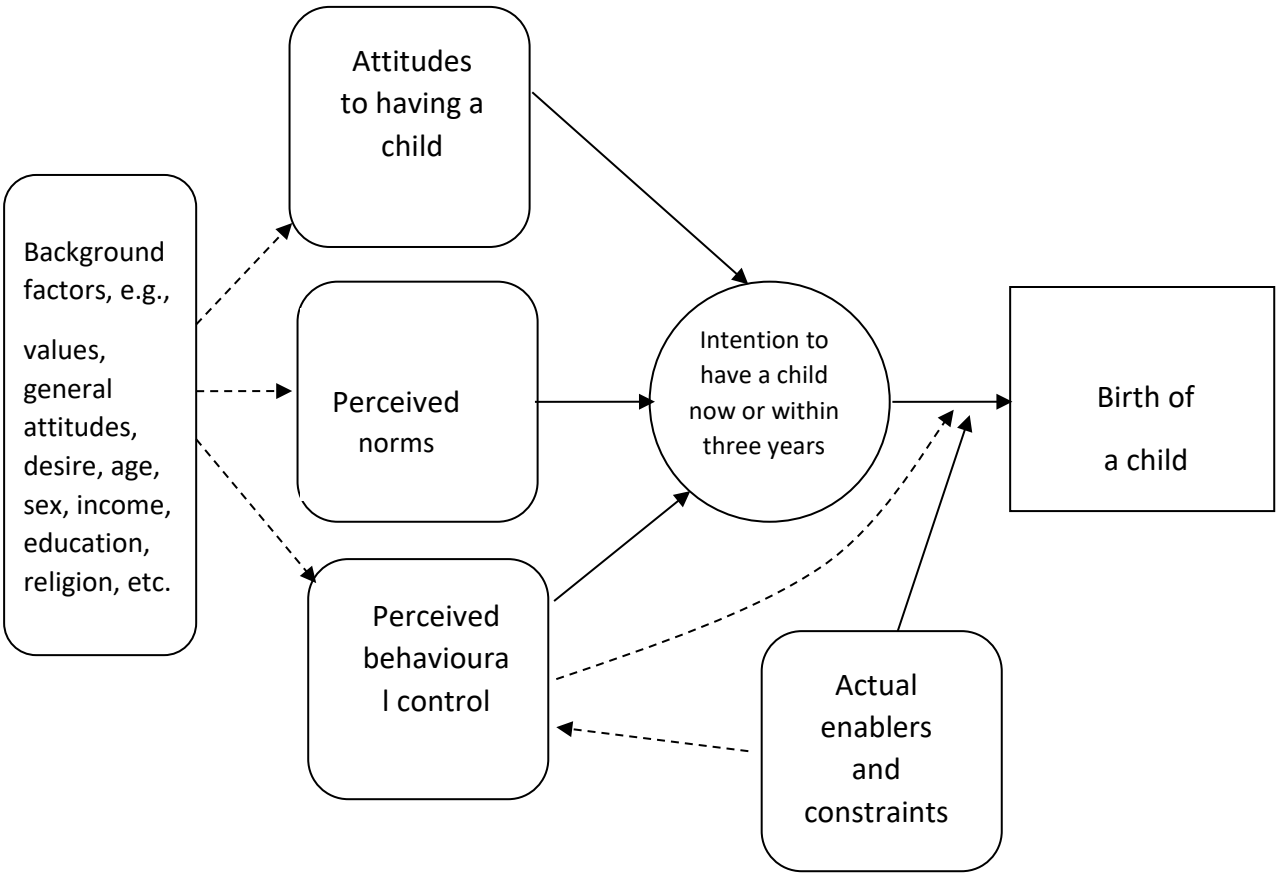

Table 1. Intentions to have a(nother) child now and within the next three years, 18-40 year olds.

	Intend a(nother) child within the next three years			
Want a(nother) child *now*		Yes	No	N
	Yes	14%	3%	809
	No	15%	68%	3,932
	N	1,395	3,346	4,741

Source: GGS Norway 2007, own calculations.

Table 2. Factor Loadings and Factor Alpha Coefficients of items of perceived behaviour control, subjective norms & attitudes towards the intention to have a(nother) child within the next three years

	Factor 1 Positive attitudes	Factor 2 Negative attitudes	Factor 3 Subjective norms	Factor 4 PBC
"Suppose you will have a(nother) child during the next three years, would it be worse or better for...?"				
your employment opportunities	-0.04	**0.61**	0.00	-0.01
your financial situation	-0.02	**0.68**	0.01	-0.02
your sexual life	0.13	**0.55**	-0.03	0.03
what people around you think of you	**0.50**	0.17	0.08	0.00
your general quality of life	**0.68**	0.03	-0.02	-0.03
the closeness between you and your partner	**0.67**	0.13	-0.07	0.02
the care and security you might get in old age	**0.55**	-0.07	0.02	-0.03
the contact between you and your parents	**0.66**	-0.08	0.03	0.05
"Others might think about you having a(nother) child during the next three years, do you disagree or agree with these statements?"				
My parents think I should have a(nother) child	0.02	-0.06	**0.83**	-0.04
Most of my relatives think I should have a(nother) child	0.00	0.00	**0.94**	0.02
Most of my friends think I should have a(nother) child	0.01	0.04	**0.78**	0.01
"How much would the decision on whether to have a(nother) child during the next three years depend on the following?"				
Your financial situation	-0.04	0.03	0.04	**0.61**
Your work	0.00	-0.02	-0.05	**0.64**
Your housing conditions	0.07	-0.01	-0.02	**0.58**
Your health	0.01	-0.04	0.02	**0.67**
Your partner's employment	-0.02	0.02	-0.03	**0.72**
Your partner's health	0.01	-0.07	0.02	**0.60**
The availability of childcare	-0.01	0.03	-0.01	**0.65**
Your opportunity to go on parental leave	0.01	-0.03	-0.08	**0.61**
The life situation of your parents	-0.03	0.07	0.08	**0.54**
Factor Alpha Coefficient	0.70	0.56	0.88	0.94

Source: GGS Norway 2007, own calculations.

Note: Loadings highlighted in bold indicate the factor on which the item was placed.

Table 3. Mean score on each TPB factor, Childless people and parents.

	Childless people	Parents
Factors for the Theory of Planned Behavior		
Positive attitudes	7.2	6.6
Negative attitudes	4.8	4.9
Subjective norms	5.3	4.7
Perceived behavioural control	5.7	6.3

Source: GGS Norway 2007, own calculations.

Table 4. Proportion of respondents by category of background factor, Childless people and parents.

	Childless people	Parents
Respondents income after tax		
Lowest quartile	25%	25%
Second quartile	25%	25%
Third quartile	25%	25%
Highest quartile	25%	25%
Respondents employment status		
Permanent contract or self-employed	73%	78%
Temporary contract	17%	12%
Not working	10%	11%
Dwelling size		
No free room	24%	33%
One free room	35%	28%
Two or more free rooms	41%	39%
Respondents health status		
No serious illness or bad health	89%	89%
Serious illness or bad health	11%	11%
Partner status		
Single	26%	5%
Non-residential partner	23%	4%
Co-residential partner	51%	91%
Age of youngest child		
0 years		28%
1 to 3 years		48%
4 or more years		24%
Intended number of children		
One more child	4%	69%
Two more children	62%	27%
At least three more children	34%	5%
Respondents age		
18-24 years	25%	7%
25-29 years	37%	29%
30-34 years	25%	40%
35-40 years	12%	24%
Sex		
Women	47%	48%
Men	53%	52%
Respondents highest education		
Low	18%	15%
Medium	35%	40%
High	47%	45%
Total	758	549

Source: GGS Norway 2007, own calculations.

Table 5. Effects of factors from the Theory of Planned Behavior and background factors on wanting a child now compared to within the next three years. Logistic regression models, odds ratios.

	CHILDLESS PEOPLE			PARENTS		
	Model I	Model II	Model III	Model I	Model II	Model III
Factors for theory of planned behavior						
Positive attitudes	1.14	1.17	1.15	**1.27**	**1.33**	**1.29**
Negative attitudes	1.06	1.05	1.09	0.99	0.99	0.93
Subjective norms	**1.55**	**1.48**	**1.34**	**1.36**	**1.37**	**1.50**
Perceived behavioural control	**1.29**	**1.18**	1.08	**1.32**	**1.30**	1.18
Respondents income after tax (ref. first quartile)						
Second quartile		1.55	1.17		1.05	1.25
Third quartile		**1.70**	1.06		1.02	0.94
Highest quartile		**1.82**	0.95		1.00	0.97
Respondents employment status (ref. permanent contract or self-employed)						
Temporary contract		0.93	0.91		1.09	1.23
Not working		0.64	0.66		0.76	0.62
Dwelling size (ref. no free room)						
One free room		1.09	1.15		1.42	1.30
Two or more free rooms		**1.65**	**1.64**		**2.15**	**2.10**
Respondents health status (ref. no serious illness or bad health)						
Serious illness or bad health		**2.04**	**2.12**		1.31	1.06
Partner status (ref. single)						
Non-residential partner			**0.56**			0.53
Co-residential partner			1.43			1.37
Age of youngest child (ref. 0 years)						
1 to 3 years						**2.63**
4 or more years						**6.17**
Intended number of children (ref. one more child)						
Two more children			0.58			0.89
At least three more children			0.90			**4.52**
Respondents age (ref. 18-24 years)						
25-29 years			**1.64**			1.43
30-34 years			**3.83**			2.13
35-40 years			**9.20**			**3.46**
Sex (ref. men)						
Women			**1.44**			1.07
Respondents highest education (ref. medium)						
Low			0.98			1.73
High			**0.57**			**0.63**
Number of observations used	758	758	758	549	549	549
R-Square	0.07	0.10	0.18	0.05	0.08	0.20

Note: bold type indicates $p < 0.05$
Source: GGS Norway 2007, own calculations.