

# The Theory of Planned Behavior and the Realization of Fertility Intentions

Lars Dommermuth<sup>a</sup> and Jane Klobas<sup>b</sup>

<sup>a</sup> Statistics Norway, Research department, Oslo, Norway (ldo@ssb.no)

<sup>b</sup> Carlo F. Dondena Centre for Research on Social Dynamics, Bocconi University, Milan, Italy

*Presented at the 2013 meetings of the Population Association of America*

*Work in progress – please do not cite without permission from the authors*

Since the 1960s there has been a dramatic drop in birth rates across Europe, and fertility below replacement levels has captured the attention of researchers, policymakers, and society at large. In research this is reflected by analysis on possible reasons for the fertility decline, including studies of fertility intentions and subsequent outcomes. Fertility intentions are an essential factor to understand changing fertility rates at macro level as well as individual family transitions. Studies suggest that not all fertility intentions are realized (Schoen et al. 1999; Voas 2003) and expected number of children is generally higher than completed number of children (Noack & Østby 2000). One of the most prominent social psychological models used to explain or predict behaviors is the Theory of Planned Behavior (TPB). According to this theory the intention is not only a direct pre-condition to the behavior, but actually mediates between a set of explanatory factors and the possible outcome (Ajzen 2005).

To understand the gap between expressed intentions and actual births the timing of fertility intentions seems relevant. The TPB states that the longer the time interval between forming an intention and performing the actual behavior, the more likely it is that intentions change in response to other events (Fishbein & Ajzen 2010). Consequently, people might be less determined to realize their fertility intention if they have given themselves a broader time frame to have a child than if they want a child in the near future. A recent study of the relationship between the explanatory factors of the TPB and timing of fertility intentions suggest that the various factors of the TPB influence the time frame of people's fertility intentions (Dommermuth et al. 2011).

The aim of this study is to investigate the relationship between the determinant elements of the TPB and realization of fertility intentions. We believe that the TPB is a fruitful framework to understand the pathways from underlying background factors, individual considerations and perception of norms towards fertility intentions and their possible realization. First, we test whether the factors included in the TPB influence people's fertility outcomes. Second, we focus on the time frame of people's fertility intentions and analyze whether different time frames of the intention lead to different fertility outcomes. Although we include only people who intend to have a child within the next three years, almost half of them indicated that they wanted a child now. Third, our analysis has a life course perspective and we do parity specific analysis, i.e. childless and parents. These analyses will both give better understanding of the pathways from intentions to behavior and new insight into whether the time frame of fertility intention influence fertility outcomes differently for specific groups. We combine data from the Norwegian Generations and Gender Survey conducted in 2007 with information from the Norwegian administrative register on subsequent childbirths, which means that we have longitudinal birth histories after the survey for the whole original sample.

## Background

The TPB is a social psychological model usually used to explain or predict behavior, but it can also be applied to understand goal attainment (Ajzen 2005). The framework claims that intentions are the antecedents of corresponding behavior. Developing an intention and then performing the behavior is in this sense a result of a reasoned decision. The formulation or non-formulation of an intention (or the

degree of an intention) is based on three factors of consideration: attitudes, subjective norms and perceived behavioral control. The three factors can act as good indicators of fertility intentions, but according to the theory these factors should not have a direct effect on the fertility outcomes, rather their impact should be mediated through the intention, which in turn should have a significant effect on realization – births in this case.

The framework of the TPB is well known, but has rarely been used in analysis of fertility. Two studies using panel data from the US refer to the TPB and focus especially on the direct effect of attitudes on outcomes in the form of birth rates (Barber et al. 2002; Barber 2001). They not only include attitudes towards childbearing, but also attitudes towards competing behaviors (education, career and consumer spending). The results show that positive attitudes towards childbearing increase birth rates, while positive attitudes towards a work career and luxury goods decrease birth rates (Barber 2001).

In an analysis of Bulgaria, Billari, Philipov and Testa (2009) studied whether attitudes, subjective norms and perceived behavioral control had an impact on parity-specific fertility intentions. They find that the three factors of the TPB are simultaneous determinants of fertility intentions, even when background factors are controlled for. However, perceived behavioral control matters only for second birth intentions, and normative pressure (subjective norms) are especially relevant for intentions to become a parent, rather than for intentions to have another child. Attitudes in contrast are more relevant for those who are parents already (Billari et al. 2009).

A study using panel data from Italy focuses on the relationship between TPB and fertility outcomes (Mencarini et al. 2011). The findings are in line with the theoretical model of the TPB and suggest that attitudes, subjective norms and perceived behavioral control are good indicators of fertility intentions, while they do not have a significant effect on the outcomes.

Some studies differentiate between the time frames of intentions. A study using data from Norway showed that all three proposed antecedents in the TPB distinguished between short-time fertility intention and long-term intention (Dommermuth et al. 2011). Positive attitudes were associated with stronger intentions to have a child now among parents. A higher level of perceived behavioral control was also associated with a higher likelihood for short term fertility intentions, but only before controlling for socio-economic background factors. Subjective norm was the strongest factor for both childless respondents and parents, indicating that the strength of respondents' beliefs that others want them to have a child directly affects the strength of their intention to have a child now rather than later (Dommermuth et al. 2011).

Two studies from the US analyzed the effect of different time frames of fertility intentions on fertility outcomes. One study distinguishes between two broad time frames: within the next four years, and after four or more years or with no specific time in mind (Schoen et al. 1999). More people with shorter term intentions realized their outcomes in this study, even when a separate measure of certainty of intention was taken into account. Miller and Pasta (1995) compare the effect of seven time-related levels of intention on fertility outcomes. Their timing indicator ranged from *12 months or as soon as possible* to *over five years*. The shorter the timing of the intention, the more likely childless people were to realize their fertility intentions. For parents with one child, a similar but weaker timing effect was observed for men but not women, and when the couple agreed on timing.

Based on the TPB-framework and previous findings we will test three hypotheses. First, following the TPB, we expect the three factors – attitude, subjective norms and perceived behavioral control – to be mediated through fertility intentions and thus to have no direct influence on fertility outcomes (Hypothesis 1). Second, we expect the time frame of people's fertility intentions to influence the outcomes: those who want a child now have a higher realization rate of their intention than those who intend to have a child within the next three years (Hypothesis 2). Third, we expect a higher realization rate among parents, for both immediate and long term fertility intentions (Hypothesis 3). The argument for this is that parents have an experience with one or several children and possibly are more realistic in their fertility intentions.

## Data and method

We use data from the Norwegian Gender and Generations Survey (GGS) conducted in 2007 and subsequent birth histories from administrative registers up to August 2011. All births are reported to the Population Register which means that we do not have the usual problem of attrition in panel data. The sample includes men and women aged 18-40 years at the time of the interview who were physically able to have children, but currently not pregnant (or female partner not pregnant). The sample of respondents who intended to have a child during the next three years consists of 1,303 individuals.

Based on factors analysis, four factors for the TPB based on 21 items included in the questionnaire were established: *positive attitudes*, *negative attitudes*, *subjective norms* and *perceived behavioral control (PBC)*. For the time frame of the expressed fertility intention we distinguish between intention to have a(nother) child within the next three years and wanting a child “now” (i.e., at the time of the interview). We control for two types of background variables. The first type consists of actual enablers and constraints. They are related to the factor of PBC, which measures how the respondents perceive the degree to which they are able to overcome constraints on having a(nother) child. The actual enablers and constraints are variables that measure the actual situation of the respondent in these fields (including income, employment status, housing conditions and health status). In addition, we control for socio-demographic variables that have been shown to have an impact on fertility outcomes (including union status, number of intended children, age at interview, gender, highest educational level and the age of the youngest child among parents). We run separate models for childless and parents. We use proportional hazard models (Cox regression) with the time between the interview and a possible birth (measured in months) as the dependent variable. All respondents were given the same time frame of 36 months after the interview.

## Preliminary results

The graphs below display the results from life table analysis and show the cumulative percentages of births during the 36 months following the interview. Almost half (47%) of our sample had a(nother) child in this period. Parents (59%) realized their fertility intention more often than childless (38%) and the time frame seems especially important among those originally without children.

### *Births within three years of the interview*



The preliminary results from our proportional hazard models provide three interesting findings. First, there is no significant direct effect of any of the TPB factors on fertility outcomes. This is in line with the TPB framework, claiming that the impact of these factors should be channeled through the intention, or in our case the time frame of the intention. Instead the TPB factors contributed to the time

frame of the fertility intention, which had a substantive effect on the realization of the intention among childless persons. These results therefore support our first hypothesis.

Second, the time frame of the intentions had different impact on fertility outcomes among childless and among parents. For childless, expressed short-term fertility intention had a much stronger positive impact on realization than long-term intentions. In addition, low income, not having a partner and a higher age were the strongest constraints for the realization of the intention among childless. Among parents, the time frame of the intention did not have a significant impact on the fertility outcomes. It seems that, for parents, the intention itself to have or not to have another child is more important than the specific intended timing of the birth. Our second hypothesis is therefore only supported for childless persons.

Third, we expected parents to have a higher realization rate than childless people, and our results confirmed this hypothesis. This means, when they express their intention to have another child, they are more committed to this goal than childless persons. One possible explanation is that parents have better knowledge about what to expect with another child. It should be noted that also among the parents more than 40% expressed an intention and nevertheless did not realize this intention three years after the interview.

Our analysis shows different pathways from fertility intentions to realization. For the transition to parenthood the time frame seems to be especially relevant. For childless, a shorter time frame of the intention seems to indicate a stronger commitment to their fertility intention. Previous analysis show that their level of intention is strongly influenced by what they believe significant others want them to do and, less so, by their perceived behavioral control (Dommermuth et al. 2011). For parents, the time frame is less important than the general decision to have another child when they make the decision to have their next child.

These findings provide new insight into the connection between fertility intentions and realization. Working with much shorter time-frames than Schoen et al. (1999) and with individuals rather than the couples who were the focus of Miller and Pasta's (1995), we have confirmed that shorter time frames are better indicators of fertility intentions than longer time frames for childless people. For parents, time frame is less relevant. We have confirmed the value of using the TPB as a theoretical framework for studying the relationship between fertility intention and realization by showing how indicators of actual control, such as financial situation, partnership status and ageing, can be modeled as enablers or constraints on realization of intentions. The results have implications for the role of fertility intentions on people's fertility behavior and the role of psychological factors on the levels of these intentions.

## Acknowledgements

The used longitudinal data were provided through the *ACCESS Life Course Infrastructure Project* funded by the Research Council of Norway (grant no. 195403) and NOVA. The research and paper is part of the project *Family Dynamics, Fertility Choices and Family Policy (FAMDYN)*, funded by the Research Council of Norway (project no. 202442/S20) and Statistics Norway.

## References

- Ajzen, Icek. 2005. *Attitudes, Personality, and Behavior*. Maidenhead, Berkshire, England: Open University Press.
- Barber, Jennifer, William G. Axinn, and Arland Thornton. 2002. "The influence of attitudes on family formation processes." Pp. 45-95 in *Meaning and choice: Value orientations and life course decisions*, edited by Ron Lesthaeghe. The Hague: NIDI/CBGS Publications.
- Barber, Jennifer S. 2001. "Ideational influences on the transition to parenthood: attitudes toward childbearing and competing alternatives." *Social Psychology Quarterly* 64(2):101-27.
- Billari, Francesco C., Dimiter Philipov, and Maria Rita Testa. 2009. "Attitudes, Norms and Perceived Behavioural Control: Explaining Fertility Intentions in Bulgaria." *European Journal of Population* 25 (4):439-465.
- Dommermuth, Lars, Jane Klobas, and Trude Lappegård. 2011. "Now or later? The Theory of Planned Behavior and timing of fertility intentions." *Advances in Life Course Research* 16(1):42-53.
- Fishbein, Martin, and Icek Ajzen. 2010. *Predicting and Changing Behavior: The Reasoned Action Approach*. New York: Psychology Press.
- Mencarini, Letizia, Daniele Vignoli, and Anna Gottard. 2011. "Fertility intentions and outcomes. Implementing the Theory of Planned Behavior with graphical models." *Working paper, Statistical department 'Giuseppe Parenti', University of Firenze* 2011(15).
- Miller, Warren B., and David J. Pasta. 1995. "Behavioral Intentions: Which Ones Predict Fertility Behavior in Married Couples?" *Journal of Applied Social Psychology* 25(6):530-55.
- Noack, Turid, and Lars Østby. 2000. "Free to choose - but unable to stick to it? Norwegian fertility expectations and subsequent behaviour in the following 20 years." Pp. 103-116 in *Dynamics of fertility and partnership in Europe. Insights and lessons from comparative research*, edited by Erik Klijzing and Martin Corijn. New York: United Nations.
- Schoen, Robert, Nan Marie Astone, Young J. Kim, and Constance A. Nathanson. 1999. "Do fertility intentions affect fertility behavior?" *Journal of Marriage and the Family* 61:790-99.
- Voas, David. 2003. "Conflicting preferences: A reason fertility tends to be too high or too low." *Population and Development Review* 29(4):627-46.