

# Childbearing Motivations and Fertility Desires: An Empirical Analysis for Norway\*

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**Abstract:** Understanding the motivations that underpin fertility decision-making can shed light on why people in low-fertility countries are increasingly having fewer or no children. Using data from the 2020 Norwegian Generations and Gender Survey, we examine 3,024 people of childbearing age and their childbearing motivations. We find that the childbearing motivations receiving the highest ratings are lifelong joy, fulfilling parental instinct, and the satisfaction of raising a child. Non-parents exhibit more negative motivations than parents, especially regarding care responsibilities. Gender differences in childbearing motivations emerge, with women giving a higher rating than men to the fulfilment of parental instinct, and men rating the time and energy burden of having children more highly. As expected, individuals with more positive and less negative childbearing motivations have higher fertility desires. However, on the whole, fertility desires appear to be influenced more by positive motivations than negative ones. This study emphasises the importance of individual perceptions and predispositions towards parenthood when examining fertility preferences.

**Keywords:** Fertility desires · Childbearing motivations · Norway · T-D-I-B · Childlessness

## 1 Introduction

Low fertility rates are a persistent reality in many high-income countries, with both researchers and policymakers focused on addressing the reasons behind this trend. A substantial corpus of empirical evidence highlights how objective factors, such as socioeconomic circumstances and structural conditions, are closely intertwined with fertility dynamics (for an overview, see *Balbo et al.* 2013). Uncertain or unstable

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\* This article has an Online Appendix with supplementary material:  
<https://www.comparativepopulationstudies.de/index.php/CPoS/article/view/650/454>

economic conditions (Alderotti et al. 2021; Scherer/Brini 2023) and the absence of family policies to alleviate the economic costs of childrearing (Bergsvik et al. 2021; Esping-Andersen 2007; Scherer/Brini 2023) are key drivers of low fertility across countries. In addition, a major theoretical framework in demography associates below-replacement fertility levels with a broader value shift towards individualism and self-fulfilment – the Second Demographic Transition (Lesthaeghe 2020; van de Kaa 1987). Yet the role of individual values and motivations in guiding fertility choices remains understudied.

This study contributes to this literature in three key ways. First, we explore childbearing motivations – an individual's predispositions in terms of how they feel and think about having children. These intrinsic motivations accompany people throughout their fertility decision-making process and are important for understanding the most salient dimensions of both positive and negative aspects of childbearing in contemporary societies.

Second, drawing on Miller's (1994) Traits-Desires-Intentions-Behaviour (T-D-I-B) model, which conceptualises childbearing as a sequential process based on motivational traits, we study how childbearing motivations relate to fertility desires. While fertility intentions (conscious plans to have children) are widely studied, fertility desires (the wish to have children) remain less explored, even though they may offer a purer insight into why individuals remain childless or limit their family size. Fertility desires capture a more intrinsic wish for parenthood, as they are less directly influenced by external barriers than fertility intentions or actual childbearing behaviour (Hayford/Agadjanian 2012; Brehm/Schneider 2019). Fertility desires reflect the ideal number of children wanted by an individual and offer a clearer view of underlying motivations before external constraints – such as partnership availability, perceived opportunities in the labour market, or health issues – come into play. Unlike fertility intentions, fertility desires better capture ambivalence, as the motivational traits associated with desires can be simultaneously positive, negative, or indifferent (Brehm/Schneider 2019). Investigating fertility desires thus provides a privileged standpoint from which to examine the fundamental motivations behind parenthood, helping us to understand whether emerging fertility patterns reflect shifts in cultural norms around parenthood and family or are the result of circumstantial pressures.

Third, we integrate Miller's model by incorporating the dimensions of gender and parity. Although the T-D-I-B model provides a robust framework for understanding the transition from motivational predispositions to childbearing behaviour, it was developed in gender-neutral terms with an implicit focus on first births, whereas factors influencing people's intentions to have children may be gender-specific (Albertini/Brini 2021; Billari et al. 2009; Iacovou/Tavares 2011; Lappegård et al. 2022; Mynarska/Rytel 2020; Testa/Rampazzo 2018). Moreover, as individuals transition into parenthood, their childbearing motivations may evolve, reflecting the transformative nature of motherhood and fatherhood (Umberson et al. 2010). In this study, we investigate whether childbearing motivations hold distinct significance for childless people and parents and whether the association between motivations and fertility desires among parents is influenced by their number of children. Our study therefore extends beyond the scope of earlier studies which solely explored childbearing

motives among childless people (Mynarska/Brzozowska 2022; Mynarska/Rytel 2018, 2020). Including parents in the study is crucial as it allows us to understand how childbearing motivations relate not only to preferences for childlessness but also to preferences for smaller families.

Norway serves as an ideal setting for investigating childbearing motivations within a gender and parenthood perspective. Within the framework of the Second Demographic Transition (Lesthaeghe 2020; van de Kaa 1987), Nordic countries are seen as forerunners in this process (Liefbroer/Billari 2010), characterised by a widespread acceptance of single living, unmarried cohabitation, and out-of-wedlock births (Billari/Liefbroer 2010). As other countries increasingly reflect such demographic trends, examining childbearing motivations in a context where these shifts are already well-established offers valuable insights. Although the fertility rate in Norway has historically been high, it has fallen substantially since 2010, reaching a historic low of 1.48 in 2020, with first birth rates having decreased more than higher-order birth rates (Statistics Norway 2022). Unlike other low-fertility countries, this decline does not appear to be related to falling GDP, mass unemployment during the two economic crises (Dølvik/Oldervoll 2019), or the Covid-19 pandemic (Ursin et al. 2020). Norway's welfare system offers generous packages of policies supporting families with young children while promoting a dual-earner family model (Comolli et al. 2021). As such, it is an attractive setting to explore reasons for low fertility beyond socio-economic factors and to understand individual motivations for having, or not having, children.

Our analysis draws on a dedicated module in the 2020 Norwegian Generations and Gender Survey (GGS), developed to capture relevant dimensions of childbearing motivations (Mynarska/Raybould 2020). We analyse the wide spectrum of individual predispositions regarding feelings and thoughts about having children (i.e. *childbearing motivations*) to understand the most salient dimensions of both positive and negative aspects of childbearing. We also ask whether individual predispositions towards the positive and negative aspects of parenthood correlate with fertility desires, and whether childbearing motivations and their association with fertility desires vary by gender and parity.

## 2 Background

### 2.1 The Trait-Desire-Intentions-Behaviour (T-D-I-B) framework

Research on fertility decision-making often leans on generic psychosocial models, such as the Theory of Planned Behavior (Ajzen 1991; Ajzen/Klobas 2013; Miller et al. 2004). The T-D-I-B framework (Miller 1994) is specifically tailored to fertility behaviour. It conceptualises reproductive behaviour as the outcome of a four-step process: from latent childbearing motivations to fertility desires, intentions, and ultimately behaviour. *Childbearing motivations* (or motivational traits) are non-conscious dispositions to react favourably or unfavourably to aspects of childbearing, reflecting enduring individual propensities towards parenthood or having more children

(Miller 1994; Miller/Pasta 1993). This explicit focus on the underlying motivations for childbearing is another factor that sets this framework apart from others since it incorporates an emotional component within the decision-making process (Miller 1994). Childbearing motivations are shaped during an individual's psychological and life-course development and, at a general level, are captured along two dimensions: *Positive Childbearing Motivations* (PCM), reflecting favourable dispositions to various aspects of having a child, and *Negative Childbearing Motivations* (NCM), reflecting unfavourable ones. At a more specific level, PCM and NCM are further divided into narrower sub-dimensions, such as the experience of joy during pregnancy and infancy or concerns about parental responsibility, which can be directly measured and are indicative of people's general disposition towards parenthood (Miller 1992, 1994, 1995; Miller 2021). Summing these sub-dimensions gives an indication of how positively or negatively individuals feel about having children.

Childbearing motivations, although they develop over the life-course, are conceptualised as being relatively stable compared with other components of the T-D-I-B sequence. In the course of individual development, and in combination with personal characteristics (such as personality traits or value system) and in reaction to pivotal life-course events, they are activated and transformed into *fertility desires*, i.e. the wish to have (more) children or remain childless. Compared with fertility intentions and behaviour, fertility desires are influenced to a lesser degree by situational factors and are linked closely to childbearing motivations (Miller 2011b) which could, however, be shaped by gender and parental status.

The sequential relationship between motivations, desires, intentions and behaviour has been evaluated by the founders of the theoretical model (Miller 1994; Miller/Pasta 1993; Miller 2021). In addition, there is substantial cross-cultural evidence supporting the T-D-I-B framework in empirical application, including in the United States (US), Italy, Honduras, Iran, and Poland (e.g. Miller 1995; Sina et al. 2010; Kennedy 2005; Pezeshki et al. 2005; Mynarska/Rytel 2018, 2020).

## 2.2 Gender, parenthood, and childbearing motivations

Societal norms often assign roles and responsibilities based on gender (West/Zimmerman 1987, 2009), which might influence people's emotional connection to parenthood. Accordingly, childbearing motivations likely differ between men and women.

Earlier studies indicated mixed results regarding gender differences in PCM and NCM (Miller 1995; Mynarska/Rytel 2018), suggesting contextual variation in how gender relates to childbearing motivations. In California, men scored lower on the PCM sub-scale and higher on the NCM sub-scale compared with women (Miller 1995), whereas in Poland, men scored higher than women on both scales (Mynarska/Rytel 2018). These studies did not consider the various sub-dimensions of childbearing motivations, thus limiting the understanding of gender-specific differences.

Recent studies have addressed this gap by investigating gender differences in distinct dimensions of childbearing motivations. In Poland, men prioritised aspects

associated with traditional parenthood (e.g. having children strengthens a marriage, fulfils religious traditions) and instrumental values (e.g. knowing they are fertile) more than women, but they also attached greater importance to parental stress and the joys of parenthood than was the case among women (Miller 2021; Mynarska/Rytel 2020). These findings differed in the US, with women giving less importance than men to parental stress and attaching greater importance to aspects linked to pregnancy joy, childrearing satisfaction, and feelings of being needed and connected, while also emphasising traditional parenthood. In Iran, on the other hand, gender differences in childbearing motivations were less pronounced overall (Miller 2021). Given the established reliability and validity of the measurement scale across multiple contexts, it is likely that the observed differences reflect cultural and contextual differences rather than measurement artifacts.

In the Norwegian context, given the relatively high level of gender equality (World Economic Forum 2024), the gender dimensions behind childbearing motivations may exhibit another pattern of variation. Specifically, *we hypothesise that in Norway gender differences in positive and negative childbearing motivations will not be pronounced; if they do emerge, however, they are likely to be within sub-dimensions of PCM and NCM (H1).*

Within the T-D-I-B framework, experiences across psychosocial developmental stages contribute to defining childbearing motivations. The transition to parenthood is considered one of the most important transitions in an individual's life (Hogan/Astone 1986), distinct from other important transitions like employment or relationships on account of its irreversibility. Parents and childless individuals have been shown to differ in terms of socio-economic and personality attributes (Tanturri et al. 2015). Whether these differences arise from selection or causation remains debatable, and personality theories also provide conflicting interpretations (e.g. van Scheppingen et al. 2016). Recognising that the transition to parenthood profoundly transforms life paths and that childless people and parents differ in their personality traits, childbearing motivations may diverge between parents and childless individuals. Parents might value positive parenting aspects from their own experiences or adjust their perspectives on negative aspects through recalibration, with these adjustments varying based on the number of children. Thus, *we test the hypothesis that single-child parents and parents with multiple children will score higher on PCM and lower on NCM than childless individuals (H2).* By analysing distinct sub-dimensions of childbearing motivations by parental status, we further investigate potential differences in PCM and NCM dimensions.

### **2.3 Childbearing motivations and fertility desires across parenthood and gender**

The T-D-I-B framework posits a strong link between an individual's childbearing motivations and their fertility desires. This notion finds support in previous research among childless individuals in the US (Miller 1994), where those who reacted favourably to the joys of pregnancy and childrearing tended to express higher fertility desires, particularly among partnered individuals, while a greater emphasis

on negative aspects tended to hamper fertility desires. In our exploration of Norway, we test the overarching hypothesis that *higher PCM scores will be positively linked to fertility desires, while higher NCM scores will be negatively associated with fertility desires (H3)*.

As much as life-course experiences are integral to the development of childbearing motivations (H2), they can also play a key role in activating childbearing motivations into fertility desires. Among these experiences, parenthood introduces unique perspectives through which childbearing motivations are understood and translated into fertility desires. Research suggests that a parent's experience with their firstborn could influence their decision as to whether to have a second child (Miller 1994; Preis et al. 2020). Given a documented two-child norm in Norway (Hart/Kravdal 2020), individual childbearing motivations may be less integral to the transition to a second child, but more relevant in terms of the decision to become a parent or the desire for a larger family. Following the logic that those with stronger PCM than NCM are more likely to desire, intend and go on to have children, we would expect those individuals who are already parents to place greater value on PCM compared with childless individuals in our study. Parenthood offers direct exposure to the positive aspects of raising children, which may reinforce PCM despite possible challenges of parenthood. Childless individuals, even if they value PCM in a similar way to parents, lack direct exposure to the positive aspects of parenthood, thus potentially weakening the association between PCM and their fertility desires.

As far as NCM are concerned, parents and childless individuals may perceive negative aspects of parenthood, such as worries about the loss of personal freedom and career opportunities, similarly. However, childless individuals who have not experienced parenthood firsthand may be more strongly influenced by NCM in their fertility desires.

In sum, theoretical expectations suggest that parenthood moderates the association between childbearing motivations and fertility desires (H4). Specifically, because parents have direct experience of the rewarding aspects of childbearing, which activate and reinforce PCM, *we expect PCM to be more strongly associated with fertility desires among parents than among childless individuals (H4a)*. Conversely, because childless individuals lack firsthand experience of parenthood and may rely more on anticipated costs, *we expect NCM to be more strongly associated with fertility desires among childless individuals than among parents (H4b)*.

A gender perspective further suggests that the links between overall PCM/NCM scores and fertility desires may vary between men and women. Gender norms and gender disparities in balancing work and family responsibilities (Kleven et al. 2023) may lead women to weigh the negative aspects of parenthood more highly than the positive aspects in their fertility decision-making process when compared with men. In particular, work-family trade-offs may be particularly salient for women in contexts with high female employment rates given that they are also expected to provide the majority of care for children (Goldscheider et al. 2015). However, the opposite could also be true, with women being more likely to find fulfilment in parenting because of social expectations around motherhood (Metzger/Garcia 2023). While we acknowledge such competing perspectives, *we anticipate that*

*the associations between PCM, NCM, and fertility desires will differ by gender, with childless women showing a stronger negative association between NCM and fertility desires and a weaker association between PCM and fertility desires compared with childless men (H5).*

Life-cycle events and overall value systems are important factors in how childbearing motivations translate into fertility desires (Miller 1992, 1994). Accordingly, our analysis considers respondents' age, relationship status, and educational attainment, all of which are factors known to be associated with fertility preferences (e.g. Berrington/Pattaro 2014).

### **3 Data and methods**

#### **3.1 Data and variables**

Data for our analysis come from the Generations and Gender Survey (GGG) conducted in 2020 in Norway as part of the Generations and Gender Programme (GGP) (GGG-II Wave 1, V1.0; Dommermuth *et al.* 2021). The survey employed a web-based questionnaire, with data collected between November and December 2020. It included 5,031 respondents representing the population aged 18 to 54 years in Norway. With a response rate of 33.54 percent, the GGG exhibits a slight overrepresentation of women and underrepresentation of individuals with primary and lower secondary education (Dommermuth/Lappegård 2021); nevertheless, GGG-based fertility estimates align with population-based estimates (Leocádio *et al.* 2023). To address response rate biases and gross-to-net sample disparities, sampling weights based on register data are utilised (for further information, see Dommermuth/Lappegård 2021).

The basic Norwegian questionnaire followed the baseline GGP questionnaire (Gauthier *et al.* 2018), thereby offering extensive information on individual fertility and respondents' socio-demographic characteristics. An experimental module adapted from the T-D-I-B framework was implemented in the new round of the Norwegian GGG to measure childbearing motivations (Mynarska/Raybould 2020), which allows examination of the links between fertility desires, intentions and childbearing motivations.

Our starting sample included 4,349 people of childbearing age, i.e. women under the age of 50 and men under 55. We excluded men partnered with a woman aged 50 or older, as well as pregnant women or men with a pregnant partner as the factors driving the decision to have another child in these phases of life can be highly selective. The sample was further refined by considering 3,605 valid data observations on fertility desires, socio-demographic characteristics, and PCM or NCM items. We excluded individuals with more than one non-response to items on positive or negative childbearing motivations, reducing the sample by 581 units instead of 1,083 with a listwise deletion. The final sample included 1,736 women and 1,288 men. Online Appendix Table A1 outlines the sample selection process in detail.

As the Norwegian GGS data were collected through a self-administered web-survey, the ongoing Covid-19 pandemic had no direct practical impact on the fieldwork in November 2020. However, the pandemic's context may have affected respondents' answers regarding their childbearing motives and fertility desires. A study on the first phase of the Covid-19 pandemic in Norway confirms a rise in the actual number of births in 2021 due to the pandemic, followed by a subsequent decline (Lappegård *et al.* 2024). This temporary increase was primarily among women with children, indicating that the Covid-19 pandemic had no major effect on the childbearing behaviour of childless individuals in Norway, while some mothers may have fulfilled their fertility desires somewhat earlier than originally planned. We discuss further possible implications of Covid-19 on our results in the final part of the study.

The T-D-I-B framework distinguishes between positive and negative childbearing motivations. Within these categories, it draws a further distinction between specific aspects related to childbearing. These different aspects can be evaluated in surveys through specific questions or items. The module on childbearing motivations in the Norwegian GGS includes twelve items (see Table 1) based on *Miller's* childbearing questionnaire (Miller 1995). Respondents were asked to evaluate the importance of each motivational aspect using a five-point scale ranging from 1 (completely unimportant) to 5 (strongly important), where 3 (neither important nor unimportant) represents a neutral mid-point. The first six items (*a* to *f*) relate to people's evaluation of different positive consequences of childbearing and thus capture the five aspects of *PCM* outlined by Miller: joy of pregnancy (*a*), traditional parenthood (*b* and *c*), feeling needed and connected (*d*), instrumental values of children (*e*), and satisfaction of childbearing (*f*). The remaining six items (*g* to *l*) were included to cover the four aspects of *NCM* outlined by Miller: discomfort of pregnancy and childbirth (*g*), fears and worries of parenthood (*h*), negatives of childcare (*f*, *j* and *k*), and parental stress (*l*).

We used both the individual components of *PCM/NCM* and aggregated indices of these components. Employing confirmatory factor analysis (CFA), we assessed a two-factor model that identified *PCM* and *NCM* within the data (Online Appendix Table A2). In the CFA, the single items were allocated to the general indices in accordance with the underlying theoretical model and both factors showed acceptable reliability with a Cronbach's alpha of almost .7 for *PCM* and more than .8 for *NCM*. The correlation between the two indices was close to zero ( $r = .003$ ), indicating that *PCM* and *NCM* are independent dimensions rather than opposite ends of a single continuum. This suggests that individuals may hold ambivalent fertility orientations, simultaneously recognising both the joys and the costs of childbearing, and justifies the treatment of *PCM* and *NCM* as independent predictors in our analyses.

Next, we computed two indices of *PCM* and *NCM* in a range from 1 to 5 by averaging the scores of all items pertaining to each sub-dimension. It should be noted that the response rate varied across items and was specifically lower for items pertaining to pregnancy and delivery being strenuous for women (item *g*) and having a child adding strain to the relationship (item *l*). Furthermore, unpartnered people, childless women, and respondents with a relatively low level of educational

**Tab. 1:** Childbearing motivations. Items included in the Norwegian GGS and the scale they relate to from T-D-I-B

Label	Item in GGS: "There are many reasons why people choose to have a child or choose not to have a child. Please specify how important the following reasons are to you personally"	Aspects of PCM and NCM in Miller's T-D-I-B
<i>Six items on PCM</i>		
a) Parental instinct	A strong maternal instinct/father instinct	Joys of pregnancy, birth, and infancy
b) Strengthen relationship	Having a child makes the relationship stronger	Traditional parenthood
c) Religious values	Having children allows parents to fulfil their religious values about family life	Traditional parenthood
d) Lifelong joy	Having children brings lifelong joy	Feeling needed and connected
e) Confirm fertility	A child is a confirmation of parental fertility	Instrumental values of children
f) Satisfying experience	Raising and guiding a child is very satisfying for parents	Satisfaction of childrearing
<i>Six items on NCM</i>		
g) Pregnancy and giving birth is demanding	Pregnancy and childbirth are demanding for women	Discomfort of pregnancy and childbirth
h) Parental responsibility	It is difficult to be responsible for a child	Fears and worries of parenthood
i) Limits freedom	Raising a child limits parents' freedom to do other things	Negatives of Childcare
j) Time/energy burden	Raising a child is a big burden on parents' time and energy	Negatives of Childcare
k) Work-childcare conflict	It is difficult to combine work and childcare	Negatives of Childcare
l) Relationship burden	Having children is an added burden for the relationship between parents	Parental stress

Source: Authors' elaboration adapted from Miller (1995) and Mynarska/Rytel (2020).

attainment provided fewer valid answers about childbearing motivations. In all cases where the response to one of the items relating to PCM or NCM was missing, the value of the missing item was replaced by the mean of the other five items to minimise observation loss<sup>1</sup> and enhance the statistical power of our analyses.

Assessing possible links between childbearing motivations and fertility desires is the next step in our analyses. Fertility desire, child-number desire, and personal ideal number of children are often used interchangeably in research (e.g. *Berrington/Pattaro* 2014). According to *Miller* (2011a,b), personal child-number ideals are a construct comparable with fertility desire and emerge from childbearing motivations (*Miller* 1995). Our variable on fertility desire is based on a question capturing the personal ideal number of children (“For you personally, what would be the ideal number of children you would like to have or would have liked to have had?”). We cross-referenced this information with the respondent’s current number of children. The resulting dichotomous variable indicates *positive fertility desire* for respondents who desire more children than they currently have (60 percent). Conversely, respondents who express an ideal number of children that is not greater than the number of children they currently have (including 4 percent of cases where respondents had more children than they ideally desired), are coded as not having positive fertility desires.

Our analyses are stratified by gender (women vs men) and parental status (childless, parents of one child, parents of two or more children). Childless individuals were identified as those who had never had any adopted or biological children. Our models, as specified in the “Methods” section below, also control for respondent’s age, highest level of educational attainment, and partnership status. Education was categorised into low (including primary education and vocational secondary education, not providing direct access to tertiary education), medium (general secondary education, providing direct access to tertiary education), and higher levels (tertiary education). Partnership status distinguished between people currently in a partnership, whether cohabiting or not, and people who are single.

Table 2 provides descriptive statistics about the analysed sample and the variables included in the analyses. A look at the fertility desires of respondents in our sample confirms that a two-child family ideal is most common in Norway, including among those without children (52 percent), and those with one (57 percent) or multiple children (50 percent). Interestingly, a small proportion of respondents (132 out of 3,024) reported zero as their ideal number of children, highlighting the presence, albeit limited, of voluntary childlessness or ambivalence towards parenthood, while still indicating that the majority maintain a preference in favour of having children. Consistent with general population statistics, childless individuals in our sample are younger on average than parents and are less represented among those with a low level of education. They also include a higher proportion of respondents that never had a partner, and exhibit a higher proportion of childless men than childless

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<sup>1</sup> A listwise deletion would have led to the loss of 20 percent of the observations relating to PCM and 13 percent of the observations relating to NCM, reducing the sample to 2,522 cases.

**Tab. 2:** Descriptive statistics of the analytical sample, by parental status

	Childless	1 Child	N of children 2+ Children	Total
N	1,311	396	1,317	3,024
N of desired children				
0	9.50%	1.63%	0.53%	132
1	8.36%	14.95%	1.13%	157
2	52.48%	56.91%	49.67%	1,552
3+	29.66%	26.52%	48.68%	1,183
Positive fertility desires				
No	9.50%	16.58%	78.80%	1,189
Yes	90.50%	83.42%	21.20%	1,835
PCM index (mean)	3.03	3.21	3.24	3.14
NCM index (mean)	3.27	3.01	2.84	3.05
Age of respondent (mean)	27.88	37.4	41.35	34.88
Highest level of education				
Low	25.76%	35.01%	29.58%	614
Medium	31.14%	16.29%	16.58%	603
High	43.10%	48.70%	53.84%	1,807
Partnership history				
R has a partner	53.12%	87.01%	92.35%	2,276
R had a partner	9.04%	11.33%	7.31%	261
R has never had a partner	37.85%	1.66%	0.33%	487
Gender				
Woman	48.62%	50.88%	49.99%	1,736
Man	51.38%	49.12%	50.01%	1,288

Weighted estimates (N not weighted).

Source: Norwegian GGS-II W1, V1.0.

women. Notably for our research, the PCM index has a higher mean score among parents than among childless individuals. Conversely, childless individuals score higher on the NCM index.

### 3.2 Methods

To address our first hypothesis that gender differences will be more likely on the item level than the aggregate level of PCM and NCM, we computed average scores of items relating to positive and negative childbearing motivations among Norwegians, differentiated by gender (Fig. 1) and parental status (Fig. 2). Second, to investigate the relationship between childbearing motivations and fertility desires, we estimated the association between PCM/NCM and positive fertility desires using logistic regressions (Table 3). To consider potential gender and parenthood

differences in the associations between childbearing motivations and positive fertility desires, we first incorporated separate interactions with parental status (0, 1 or 2+ children; Fig. 3, Online Appendix Table A3-A4) and then combined this with gender (Fig. 4, Online Appendix Table A5-A6). All models included sample weights and controls for socio-demographic characteristics, namely age (modelled linearly), educational level, partnership status, gender and number of children unless already interacted with the PCM and NCM indices. Due to the limited sample size, we were unable to explore age-specific patterns in the relationship between childbearing motivations and fertility desires. Nevertheless, we conducted sensitivity checks by excluding respondents aged older than 35. Fertility desires above this age threshold may be shaped by a decrease in (perceived) fecundity or an ex-post reduction of previously higher fertility desires, the fulfilment of which is less likely at this stage of the life course. Substantive results remained unchanged (see Online Appendix Fig. A1-2, Tables A3-A6 Model 4, and Table 3 Model 5). Moreover, we estimated models specifying age as a quadratic term, as categorical age groups (18-25, 26-35, 35+), and as single-year dummies (available upon request) and found that the results were substantively unchanged across all specifications. Additional model specifications reveal that omitting controls for socio-demographic characteristics (i.e. education and partnership status) from the analysis did not significantly change the outcomes of our main variables (Online Appendix Tables A5-A6, Models 1-2).

## 4 Results

### 4.1 Childbearing motivational profiles

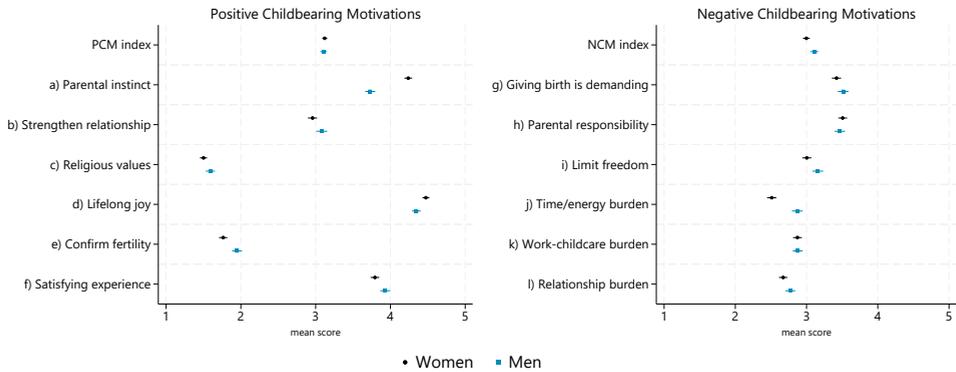
We first examine gender differences in positive and negative childbearing motivations (H1). Given the relatively high level of gender equality in Norway, we expected limited differences between men and women overall, with some variation in specific sub-dimensions.

Figure 1 shows the mean scores of specific PCM and NCM items by gender (see Table 1).<sup>2</sup> Overall, both women and men score lifelong joy (item *d*), parental instinct (*a*), and the satisfaction of raising a child (*f*) as the most important PCM items, whereas religious fulfilment (*c*) and confirming fertility (*e*) were ranked lowest. Overall, women and men rank the single items of PCM very similarly, except for parental instinct (*a*), which women rank significantly higher (see left panel of Fig. 1).

Among NCM (see right panel Fig. 1), pregnancy and birth discomfort (*g*) and parental responsibilities (*h*) are rated as most important by both women and men, followed by concerns about freedom to do other things (*i*), work-family balance (*k*), and relationship strain (*l*). Again, women and men rank five out of six NCM items

<sup>2</sup> Descriptive statistics are based only on valid answers from respondents. Missing values were not imputed for these descriptive analyses.

**Fig. 1:** Mean scores on each PCM and NCM item, by gender



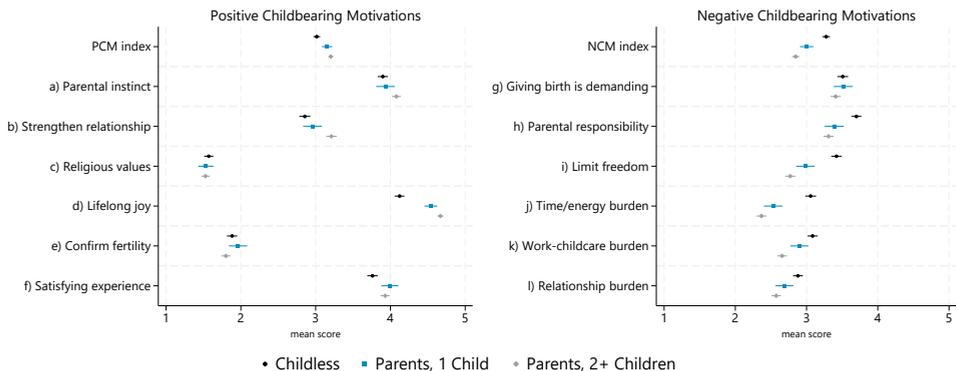
Source: Norwegian GGS-II W1, V1.0 (N = 2,522).

very similarly, with the exception that men score the childbearing burden item higher on average.

For both men and women, scores for the PCM items show greater variability than the NCM item scores, suggesting more heterogeneous orientations towards the positive consequences of childbearing.

We next compare childbearing motivations by parental status in Figure 2. We expected parents, especially those with more children, to score more highly on positive motivations (PCM) and record lower scores on negative motivations (NCM) than childless individuals (H2). Parents, especially those with multiple children, systematically record higher scores on PCM and lower scores on NCM than childless individuals. In particular, parents had higher scores for the PCM items on lifelong joy (d) and relationship strengthening (b), and childless individuals had a higher score for the NCM items on childcare burdens (i, j, k) and parental responsibilities (h).

**Fig. 2:** Mean score on each PCM and NCM item, by parental status



Source: Authors' calculations based on Norwegian GGS-II W1, V1.0 (N = 2,522).

Overall, these differences are more pronounced between childless individuals and parents with two or more children, than between first-time parents and parents of multiple children.

The observed patterns are replicated among individuals under the age of 36 (Fig. A1-A2 in Online Appendix), but with slightly higher ratings among men for the NCM items regarding limitations on freedom and the burdens on time and energy. Age-adjusted mean levels of PCM and NCM by parental status confirm that differences in PCM and NCM do not reflect age composition. When considering the intersection of gender with parental status (Fig. A3 in the Online Appendix), similar patterns by parental status are shown for women and men, with two exceptions. First, childless women express that parental instinct (*a*) is a less important reason for them to have children than mothers do, regardless of the number of children they have, while there is no such difference among fathers and childless men. Additionally, while fathers and childless men place similar importance on the idea that giving birth is demanding (*g*), mothers of two children attribute less significance to this dimension than childless women.

## 4.2 Childbearing motivations and fertility desires

Table 3 presents Average Marginal Effects (AMEs) from a series of nested logistic regression models examining the association between PCM and NCM indices, and positive fertility desires. The initial model controls for the respondent's age and number of children (Model M1), and higher-order models progressively introduce additional controls for gender (M2), level of education (M3), and partnership status (M4). Prior to the analysis, we expected higher PCM/NCM scores to be positively/negatively correlated with fertility desires (H3), as reflected in the results: there is a positive association between higher scores on the PCM index and the probability of having positive fertility desires across models, and a negative correlation between higher scores of NCM with positive fertility desires. Model M5 confirms the pattern in the sub-group of people aged 35 or younger.

The AMEs for both PCM and NCM remain mostly stable across models, even with the inclusion of sociodemographic controls, which contribute little additional explanatory power, as reflected in the pseudo R-squared values. In line with the T-D-I-B theoretical framework, this may suggest that fertility desires are only marginally shaped by contextual factors, while childbearing motivations are a key determinant.

We then examine whether the link between childbearing motivations and fertility desires differs by parental status. As hypothesised in H4, we expect childbearing motivations to matter differently for childless individuals than for parents, with a stronger association for PCM among parents (H4a) and for NCM among childless individuals (H4b).

Figure 3 shows how a one-point difference in the PCM index (left panel) and the NCM index (right panel) is associated with a different probability of having positive fertility desires, by parental status. We find that a one-point increase in the PCM index is associated with a greater probability of positive fertility desires among childless people (+11 percentage points), first-time parents (+8 percentage points),

**Tab. 3:** Average Marginal Effects from logistic regression models of PCM and NCM indices on positive fertility desires

	M1	M2	M3	M4	M5 (aged <36 years)
PCM index	0.118*** (0.01)	0.118*** (0.01)	0.123*** (0.01)	0.123*** (0.01)	0.128*** (0.01)
NCM index	-0.029*** (0.01)	-0.028*** (0.01)	-0.024*** (0.01)	-0.023** (0.01)	-0.024** (0.01)
Age of respondent	-0.007*** (0.00)	-0.007*** (0.00)	-0.008*** (0.00)	-0.008*** (0.00)	-0.008*** (0.00)
1 Child	-0.047* (0.02)	-0.049* (0.02)	-0.043 (0.02)	-0.055* (0.02)	-0.082** (0.03)
2+ Children	-0.620*** (0.02)	-0.626*** (0.02)	-0.621*** (0.02)	-0.640*** (0.02)	-0.589*** (0.04)
Men		-0.033* (0.01)	-0.019 (0.01)	-0.020 (0.01)	-0.010 (0.02)
Low education			-0.091*** (0.02)	-0.089*** (0.02)	-0.092*** (0.02)
Medium education			-0.050** (0.02)	-0.048** (0.02)	-0.018 (0.02)
No partner				-0.036* (0.02)	-0.054** (0.02)
Pseudo R-squared	0.447	0.449	0.459	0.460	0.463
AIC	6605.4	6587.0	6471.6	6460.1	2302.7
BIC	6641.5	6629.1	6525.7	6520.3	2356.2
Observations	3,024	3,024	3,024	3,024	1,556

Notes: Reference categories: Childless, Women, High education, Partnered.

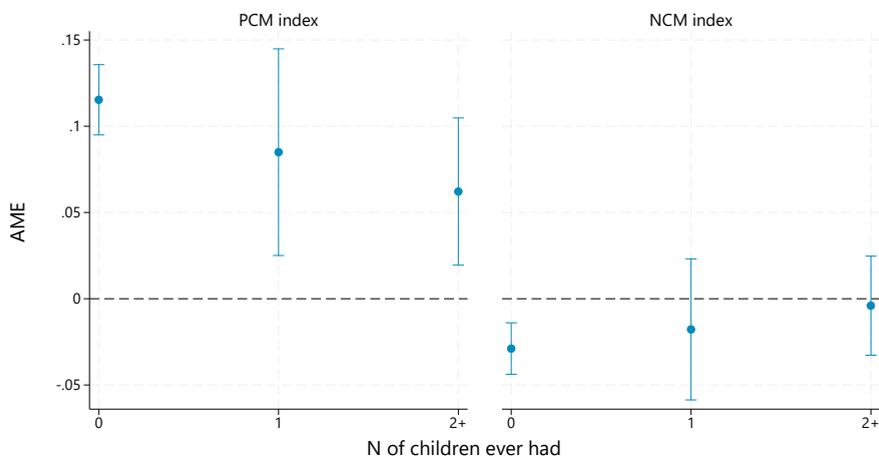
\*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .1$ .

Standard errors in parentheses

Source: Authors' calculations based on Norwegian GGS-II W1, V1.0.

and parents with multiple children (+6 percentage points). Pairwise comparisons of AMEs across groups (Online Appendix Fig. A4) show that the association is stronger for childless individuals than for parents with two or more children, with the difference statistically significant at the 5 percent level ( $p = .02$ ). However, differences between childless individuals and single-child parents, and between single-child and multiple-child parents, are not statistically significant.

With regard to NCM, a single point higher score on the NCM index among childless individuals is associated with a lower probability of expressing positive fertility desires (-2.8 percentage points). None of the between-group contrasts are statistically significant at the 10 percent level (all  $p > .10$ ; Online Appendix Fig. A4). Therefore, we cannot rule out that the association between NCM and fertility desires does not differ by parental status.

**Fig. 3:** Average Marginal Effects of PCM and NCM indices on positive fertility desires, by number of children ever had

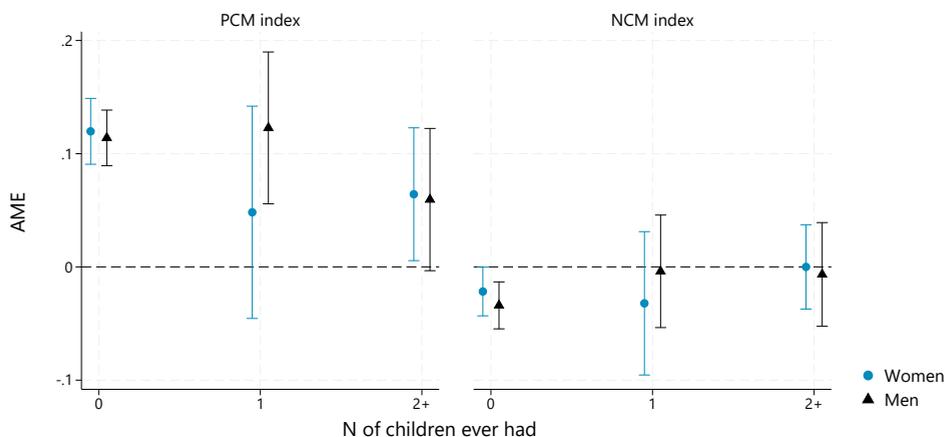
Notes: AMEs and 95% CI derived from logistic regression models of PCM and NCM indices on positive fertility desires. Models include interactions with parity and control for gender, age, level of education, and partnership status, while including sample weights. The estimates presented in the graph correspond to the fully specified model (Model M3) in Online Appendix Tables A3-A4. Pairwise t-tests of differences in AMEs across parenthood groups are reported in Online Appendix Figure A4.

Source: Norwegian GGS-II W1, V1.0 (N = 3,024).

These findings remain unchanged even when controls for partnership status and educational level are removed from the models (Online Appendix Table A3-A4, Models 1-2). The sensitivity check restricted to individuals below the age of 36 (Online Appendix Tables A3-A4, Model 4) shows patterns consistent with the main results. Among childless individuals, PCM remains positively and NCM negatively associated with fertility desires, though with slightly smaller magnitudes. For parents, the estimated associations of PCM are comparable with or greater than in the full sample, but the substantially smaller number of younger parents (N = 183 with one child, N = 261 with two or more children) results in wider confidence intervals and reduced precision. Associations with NCM remain absent among parents. This pattern likely reflects the fact that fertility desires are less heterogeneous among younger respondents, especially younger childless individuals, 93 percent of whom report desiring a child, leaving less variation to be accounted for by childbearing motivations.

We then introduce interactions with gender to examine whether the association between childbearing motivations and fertility desires among the childless and parents with different numbers of children varies by gender. Figure 4 illustrates these associations, with results shown separately for women (blue dots) and men (black triangle) as in Figure 3. It was our expectation that, in comparison with childless men, childless women would exhibit a weaker association between PCM and fertility desires and a more pronounced negative association between NCM and

**Fig. 4:** Average Marginal Effects of PCM and NCM indices on positive fertility desires, by number of children ever had and gender



Notes: AMEs and 95% CIs derived from logistic regression models of PCM and NCM indices on positive fertility desires. Models include interactions with gender and parity, and control for age, partnership status and educational attainment while including sample weights. The estimates presented in the graph correspond to the fully specified model (M3) in Appendix Tables A5-A6. Pairwise t-tests of differences in AMEs across gender-parenthood groups are reported in Online Appendix Fig. A5.

Source: Norwegian GGS-II W1, V1.0 (N = 3,023).

fertility desires (H5). We found no substantial gender differences in the association between PCM or NCM and fertility desires among men and women both with and without children. For example, higher NCM scores are associated with a slightly lower probability of expressing positive fertility desires for both childless women (-2 percentage points) and men (-3 percentage points), but these differences are minor and are not statistically significant ( $p > .41$ , Online Appendix Fig. A5). Excluding partnership status and educational attainment as controls (Online Appendix Table A5, M1 and M2) or restricting the analysis to individuals under 36 (Online Appendix Table A5, M4) does not alter the substantive interpretation. Regarding overall patterns in motivations between parents and childless individuals, we find that no meaningful association between NCM fertility desires emerges among parents, thus signalling that the negative association between them in Table 3 is primarily driven by childless individuals.

## 5 Conclusions and discussion

Using nationally representative survey data, this study examined the fertility decision-making process in Norway. Despite factors that historically protect against low fertility, such as generous family policies, stable labour markets, and comprehensive welfare conditions, fertility rates in Nordic countries have fallen well below

replacement levels. The decline has been driven by delayed entry into parenthood and rising childlessness (*Jalovaara et al.* 2019), even though most individuals still aspire to become parents (*Dommermuth et al.* 2025). This pattern challenges rational economic models of fertility behaviour (*Becker* 1991), emphasising the need to consider individual perceptions and predispositions towards parenthood in order to better understand contemporary fertility trends.

This study focused on the motivations underpinning fertility decision-making by mapping dispositions towards positive and negative aspects of parenthood and investigating how these relate to family-building preferences across gender and parental status. Unlike fertility intentions, which are strongly influenced by contextual constraints, fertility desires more accurately reflect individuals' fertility preferences and are less directly influenced by external barriers.

Our results showed that in Norway, affective PCM items such as the lifelong joy of having children, parental instinct, and the satisfaction of raising a child are scored more highly than instrumental dimensions (e.g. strengthening the relationship, fulfilling religious duties, and confirming fertility), in contrast with findings in other countries (*Mynarska/Rytel* 2020 for Poland; *Pezeshki et al.* 2005 for Iran). This likely reflects Norway's low level of religiosity (*Pew Research Center* 2018) and its advanced position in the Second Demographic Transition (*Lesthaeghe* 2020). Among the NCM items, respondents emphasised the discomfort of pregnancy and childbirth as well as parenting burdens, though there was less variation in NCM scoring than for PCM scoring, suggesting that positive affective dispositions may weigh more heavily on childbearing decision-making in Norway.

In terms of gender, unlike previous US findings where men rated NCM higher than women and PCM lower (*Miller* 1995, 2021), Norwegian men and women rated most motivations in a similar fashion. Women placed slightly more importance on parental instinct and lifelong joy of parenthood (nurturing-related motivations), while men were slightly more concerned about time/energy burdens and confirmation of fertility (instrumental values). These findings support our hypothesis (H1) that gender roles may influence childbearing motivation sub-dimensions, even in a gender-egalitarian context like Norway. Studies in Iran and Poland also found gender differences in the scoring of specific PCM and NCM items, albeit using different indicators (*Miller* 2021; *Mynarska/Rytel* 2020). Interestingly, no differences emerged on the dimensions we might have expected to be more important for women than for men (e.g. the strain of pregnancy and giving birth or the challenges of balancing work and childcare), thereby highlighting the need for more cross-country comparisons in order to understand whether this finding is unique to Norway.

We also found that childbearing motivations differed by parental status (H2). Parents, especially those with multiple children, reported higher positive and lower negative motivations for childbearing, while the reverse was observed among childless individuals. While both parents and childless individuals scored the joy of parenthood PCM highest, childless individuals emphasised it to a lesser degree and had higher scores for NCM items on freedom, time and relationship burdens, parental responsibilities, and work-childcare conflicts than parents. These variations suggest that childlessness may be shaped not only by external factors, such as

partner availability, income, or lack of comprehensive family policies, but also by internal perceptions and evaluations of childbearing. In light of the fact that fewer young people are making the transition into parenthood in Norway, it is interesting that childless individuals place less emphasis on the joy of parenthood as the most important motivation for having children. However, this cross-sectional data cannot determine whether childless individuals' motivations are stable or are adaptive to their current circumstances. This makes the evolution of childbearing motivations throughout an individual's life a key focus for future research.

Childbearing motivations partly explained variability in fertility desires (H3). Positive childbearing motivations were associated with positive fertility desires, and vice versa for negative childbearing motivations. These associations were robust after controlling for education and partnership status, emphasising the central role of affective dispositions in fertility decisions. This interpretation is reinforced by the stronger association (higher AMEs) between fertility desires and positive, rather than negative, childbearing motivations.

The association between childbearing motivations and fertility desires also varied by parental status (H4). Contrary to H4a, PCM were most strongly associated with fertility desires among the childless, while a negative association with NCM emerged only among childless individuals, partly in line with H4b. This may be because childless individuals are less likely to have already achieved their ideal family size.<sup>3</sup> Moreover, whereas among parents, PCM remained significantly associated with fertility desires regardless of parity, NCM mattered only for the childless group. This highlights the importance of affective motives for childbearing in Norway across groups.

Contrary to our fifth hypothesis (H5), we found no significant gender differences in the relationship between childbearing motivations and fertility desires, underscoring the importance of cross-country analyses in order to understand whether this pattern is unique to Norway.

As the Norwegian GGS was conducted during the Covid-19 pandemic, we tested for the potential influence of broader perceptions of uncertainty on our findings by including an index of concerns about the future<sup>4</sup> as a control variable. This uncertainty index was not significantly associated with fertility desires and did not affect the relationship we observed between motivations and fertility desires. It should also be said that previous studies on childbearing behaviour found no significant fertility shift among childless women due to the pandemic in Norway (*Lappegård et al.* 2023).

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<sup>3</sup> Statistical t-tests show that only childless individuals and parents with several children differ in the strength of the relationship between motivations and desires, while no significant differences were found between childless individuals and first-time parents, or between first-time parents and those with two or more children. Furthermore, the differences observed earlier in the effect sizes and significance of the PCM and NCM scales remain.

<sup>4</sup> The uncertainty index includes respondents' worries about issues such as terrorism, climate change, overpopulation, economic crises, the increasing number of refugees, high unemployment, organised crime, military conflict, global epidemics, weakened democracy, rising social inequality, political extremism, and the prospects for future generations.

Our findings were also robust across alternative model specifications. Analyses using listwise deletion yielded nearly identical factor structures and regression estimates, and analyses restricted to partnered individuals produced substantively similar results.

In sum, our findings show that Norwegian contemporary fertility desires are largely shaped by positive affective reactions to childbearing. In a context in which research on low fertility has mostly been focused on the obstacles to having children and possible policy solutions to prevent or alleviate such obstacles, this raises the fundamental question of whether policies addressing external barriers to childbearing can universally promote higher fertility. To properly answer this question, future research should replicate our analysis in other contexts, particularly countries where the work-life balance is weaker. This is because Norway's long and solid tradition of policies in support of a work-life balance may reduce the salience of childbearing burdens for fertility decisions compared with other countries.

Moreover, future research should adopt a longitudinal perspective to clarify whether changes in childbearing motivations precede or follow changes in fertility preferences. Such an approach would also shed light on the persistent gap between desired and realised fertility, which is a key feature of rising childlessness in Norway and other low-fertility societies (*Friedrich/Bujard* 2025). Although it has not been possible in this study to directly address realised fertility, it contributes to the current literature on fertility by underscoring the analytical importance of fertility desires as well as childbearing motivations for fertility decision-making.

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