Review of Sociology 34(2): 24–54

# Tomorrow's parents? Exploring the fertility intentions of young adults in Hungary

# Jövőbeli szülők? Egy feltáró kutatás a hazai fiatal felnőttek gyermekvállalási terveiről.

Dávid Erát [1] – Adrienn Bognár [2]

https://doi.org/10.51624/SzocSzemle.12099
Manuscript received: 15 June 2023.
Modified manuscript received: 6 September 2023.
Acceptance of manuscript for publication: 3 October 2023.

**Abstract:** In Hungary, where current fertility is below replacement, it is important to explore the fertility intentions of potential future parents. In our paper, we use a novel representative database to explore the future childbearing intentions of young adult Hungarians (18–29) and to estimate the potential effect of a wide range of demographic, socioeconomic and value-related independent variables. According to our results, fertility intentions are shaped by the individual's economic status, current domicile, parental education, religiosity, parental separation, relationship status and positivity towards Hungary. Additionally, interaction models show that fertility intentions vary by age and gender: a critical period of late young adulthood is highlighted when stronger intentions notably decline for women. Finally, using subsamples, we examine the effect of climate anxiety and green behaviour. Results suggest that those who plan to have more children are more likely to behave in an environmentally conscious way.

**Keywords:** Fertility intentions, young adults, childlessness, demography, climate anxiety

**Összefoglaló:** Magyarországon, ahol a jelenlegi termékenység nem éri el a reprodukcióhoz szükséges szintet, fontos vizsgálni a potenciális jövőbeli szülők gyermekvállalási terveit. Elemzésünkben egy új, reprezentatív adatbázis felhasználásával feltárjuk a fiatal magyar felnőttek (18–29) gyermekvállalási terveit és megbecsüljük különböző demográfiai, társadalmi-gazdasági és értékhez köthető változók hatását e tervekre. Eredményeink szerint kiemelt hatása van a tervekre az egyén gazdasági helyzetének, lakóhelyének, a szülői végzettségi háttérnek, a vallásosságnak, a szülők szeparációjának, a jelenlegi párkapcsolati helyzetnek, valamint az országgal szemben érzett pozitív attitűdnek. Továbbá, az interakciós modellek rávilágítanak arra, hogy a tervek nemenként eltérnek, és életkorban változóak: e tekintetben kritikus időszak a kései fiatal felnőttkor, amikor a magasabb gyermekvállalási tervek háttérbe szorulnak a nők esetében. Végül, almintákon megvizsgáljuk a klímaszorongás és a zöld viselkedés hatásait is, mely esetben a több gyermeket tervező személyeket környezettudatosabb viselkedés jellemzi.

**Kulcsszavak:** Gyermekvállalási tervek, fiatal felnőttek, gyermektelenség, demográfia, klímaszorongás

1 University of Pécs, Department of Sociology, email: erat.david@pte.hu
2 University of Pécs, Department of Sociology, email: bognar.adrienn@pte.hu

# 1. Introduction

The issue of sub-replacement fertility levels, changing fertility behaviour, and their subsequent consequences are a major part of the demographic and political discourse in Europe. The second demographic transition (SDT) brought major changes to the region, including the rise of non-married cohabitation and singlehood, increasing age of first marriage and first birth, lower fertility and a greater likelihood of childlessness (Lesthaeghe 2010, 2020; Brini 2020). These developments are theorized to be rooted in ideational changes towards individualism, self-actualization and post-materialistic needs (Inglehart, 1970). Importantly, the SDT process is present in Central and Eastern Europe as well, especially after the fall of the communist regimes in 1989 (Lesthaeghe 2010; Billari and Kohler 2004).

Hungary, the focus of our study, is not an exception to the transformation of demographic behaviour. Although there were some major upturns due to policy changes, such as a brief ban on abortion in the fifties, the total fertility rate (TFR) declined after the Second World War and reached a decade-long low point (below 1.30) around 1999–2011, followed by a period of recuperation (Őri and Spéder 2020). While fertility in Hungary in recent years can be described as average from a comparative European perspective, the current upturn in the TFR is (at least partially) attributed to pronatalist policies and the weakening effect of postponement (Kapitány and Spéder 2021). Overall, fertility behaviour in Hungary has shifted as well. Spéder notes that changes in fertility have been accompanied by later first births, increasing heterogeneity in timing, and greater division based on educational attainment (2021). Life-course analyses also reflect this emerging heterogeneity, as multiple paths of late childbearing (after education or early entry into the workforce) coexist with earlier timing scenarios in Hungary (see Murinkó 2019).

In this context of below-replacement fertility, individuals' childbearing intentions are a key issue. In the scientific literature, the intended number of children is well established (see Schoen et al. 1999) to be a strong determinant of realized fertility, and demographers often use intentions to help predict future fertility rates (Philipov 2011). However, this evident linkage is not deterministic in nature, as underachieving or overachieving can often be observed, forming a gap between intentions and actual behaviour (Demeny 2003). For example, in the United States, Quesnel-Vallée and Morgan (2003), and later, Morgan and Rackin (2010) demonstrated that by age 40–45, less than half of all respondents fulfilled their childbearing intentions, with underachieving being a more common phenomenon. Some results also show that fertility desires eventually adjust to sub-replacement levels of actual fertility, as in Austria and Germany, low fertility goes hand-in-hand with the intention to have fewer than two children (Goldstein, Lutz and Testa 2003; Sobotka 2009).

In summary, a link between intentions and behaviour exists, and studying the former should provide insights into the latter. Based on this, our study aims to contribute to the understanding of fertility in Hungary by exploring a wide variety of

factors that influence the childbearing intentions of childless Hungarian young adults using a new representative sample. First, we present the major theoretical approaches to fertility intentions to provide a theoretical background, then we present possible influential factors. After establishing the theoretical framework, we discuss the unique Hungarian social context of fertility. Finally, we present our modelling strategy, interpret the main results, and discuss the implications and limitations of our study.

## 2. Theoretical framework

### *2.1. Understanding fertility intentions*

In the effort to understand fertility intentions, the most often-used approach is the theory of planned behaviour (TPB) (Ajzen 1991). TPB proposes that an individual's intention to have a child is shaped by three factors (Ajzen 1991; Ajzen and Klobas 2013; Klobas and Ajzen 2015): (1) behavioural beliefs which encompass the perceived consequences of having a child and the evaluation of these consequences, which together result in childbearing attitudes; (2) normative beliefs about having a child and the social pressure to adhere to these norms, creating the subjective childbearing norms of an individual; (3) and perceived belief of control (such as overcoming constraints and adversity) concerning having a child (or not) which stems from beliefs about enabling and interfering circumstances. These three factors that shape intentions (and, in turn, realized fertility) are affected by a range of socioeconomic, demographic and personal characteristics (Ajzen and Klobas 2013).

While TPB offers a concise framework for understanding intentions, critiques highlight that it puts too much emphasis on conscious behaviours and beliefs, while realized fertility is often an unintended outcome as unplanned pregnancies happen en masse (Morgan and Bachrach 2011). Bachrach and Morgan (2013) proposed an alternative approach to reconcile this issue – the so-called cognitive-social model (CSM), which posits that intentions are complex mental states originating both from deliberative (conscious) and automatic (not conscious) cognitive processes.

According to the CSM, automatic cognitive processes create schemas, which contain knowledge, sensations and feelings, and the system of these schemas defines "what and who we are in relation to the world" (Bachrach and Morgan 2013: 462) and have a motivational force in our life. Schemas are created during interaction with social structures and are triggered by a relevant context or situation (Bachrach and Morgan 2013: 465), shaping decisions. The different choices of individuals come from the fact that people interact with dissimilar social structures during their life course.

According to the CSM, the intention to have a child is based upon schema(s) related to parenthood (positive experiences, values, knowledge about children, being a parent, etc.), which the individual incorporates as a part of their self because of their positive nature. However, the essential notion is that positive schemas can be related to childbearing without intentions (Bachrach and Morgan 2013: 466). Specifically, an intention requires

a commitment to act in a given situation, motivated by a strong link between positive schemas and necessary actions. But positive schemas can also result in the same outcome without previous intentions. For example, positive attitudes about motherhood can reduce the likelihood of an abortion in the event of an unwanted pregnancy. Additionally, unrelated intentions can have similar outcomes, such as the intention to have intercourse, which can result in childbearing. Finally, intentions affect the content of other schemas: the intention to become a parent weakens the positivity of schemas related to career development, which becomes a less important part of the self.

To summarize, with TBP, we can claim that if a factor is positively (or negatively) related to intentions, it is due to its influence over at least one of the three components (consequences, norms, or control). With CSM, we can similarly argue that a given factor plays a role in forming strong positive schemas (or the absence of them), which becomes an important part of the self, creating a commitment to act (or not). An added benefit of CSM is that it highlights age-specific variability: at older ages, with a better-formed self, intentions might be more clearly established.

From a theoretical perspective, the intention to voluntarily (as opposed to involuntarily, see Veevers 1980) remain childless has to be highlighted as a unique outcome, as forgoing parenthood altogether is distinct compared to having a certain number of children. For our study, the difference between early articulators, late articulators and perpetual postponers has to be made: the former two make an active decision to be childless early or late in their life course, while the latter passively postpone and eventually abandon the idea of childbearing (see Avison and Furnham 2015). For late articulators, the preference for childlessness is thought to be more stable (Albertini and Brini 2020).

In understanding the decision to remain childless, theoretical perspectives offer economic, personality-based and societal frameworks. From an economic viewpoint of childbearing, having children can be disadvantageous as the cost (both in terms of financial resources and opportunities) of raising offspring overshadows the gains from parenthood (Blossfeld and Huinink 1991; Becker 1991: 138). From a personality-based viewpoint, men and women have specific preferences (Hakim 2003), which compete (Demeny 2003) with parenthood. If someone has a stronger disposition for having a career than being a parent, then the probability of childlessness increases. However, for both economic and personality-based explanations, the societal context has to be emphasized, as it plays a role in demographic decisions (Liefbroer and Billari 2010). Simply, in a context where socially prescribed conditions prior to childbearing are not met by the couple (Gribaldo, Judd and Kertzer 2009; Bernardi, Mynarska and Rossier 2015) or prevailing norms accept childlessness, forgoing parenthood is a more likely option.

Studies generally confirm all three theories. Couples with high-earner women are more likely to opt for having no children (Gobbi 2012), and tertiary-educated women have a more positive outlook on childlessness (Waren and Pals 2013) as the opportunity cost for them is higher (Merz and Liefbroer 2012). Also, childless persons generally score higher on independence and lower on agreeableness (Avison

and Furnham 2015) traits. Regarding the societal effect, family-oriented values reduce the odds of childlessness for both men and women (Waren and Pals 2013), and Albertini and Brini (2020) note that normative pressure plays a part in abandoning plans to remain childless. In their detailed multilevel approach, Liefbroer, Merz and Testa (2015) show that cross-country variance in the acceptance of childlessness is high, and more progressive countries accept childlessness to a greater degree.

### *2.2. What influences intentions?*

So far, we have established that beliefs and schemas affect fertility intentions and that voluntary childlessness can be regarded as a distinct category of possible intentions. As both TPB and CSM note, background factors shape the elements of intentions, influencing outcomes. Consequently, it is important to review recent results on possible determinants. It should be reiterated that realized fertility is different from intended fertility, and due to this, our review of empirical results is limited to studies focusing on intentions in general, or specific outcomes such as voluntary childlessness or higher-order intentions.

*Age*. A primary candidate for an influential factor in childbearing intention is the age of the respondent, as intentions are revised due to age-specific circumstances, experiences and other life-course events. In their recent study, Iacovou and Tavares note (2011) that younger people are more likely to adjust their expectations (both upwards and downwards), and for women, there is a gender-specific effect of reduced intentions after 30. Liefbroer's results (2009) also indicate an adjustment (on average downwards) after the age of 18. However, he notes that in addition to the adjustment effect, intentions become more heterogeneous with older age.

*Socioeconomic factors*. Results clearly support the influence of socioeconomic factors on fertility intentions, as better economic circumstances are related to a higher degree of control and greater affordability of children. Studies demonstrate that employment (Fahlén and Oláh 2015) and household wealth (Modena, Rondinelli and Sabatini 2013) are positive determinants of stronger childbearing intentions. Conversely, worsening employment conditions increase the risk of abandonment of fertility intentions for men and women (Hanappi et al. 2017). In Germany, Berninger, Weiß and Wagner (2011) found support for the direct effect of income, job security and partner's employment on the intention to have a first child for men only, which they interpret as a consequence of the gendered division of labour and the normative pressure for men to be the main breadwinners. Novelli et al. (2021) highlight the role of country-level economic uncertainty: after the 2007–2008 recession, employment status and housing conditions became more important determinants of short-term fertility plans in Italy. Vignoli et al. (2022) corroborate this by studying the effects of economic narratives on intended childbearing in Italy and Norway. Their data show that both genders react strongly to changing economic situations regardless of objective economic position, as negative prospects are linked with lower intended fertility.

From the plethora of socioeconomic factors, educational attainment has received considerable attention in recent empirical research. Analyzing 27 European nations,

Testa (2014) found an individual and macro-level positive association between women's education and fertility intentions. As highly educated women have more resources (and therefore control) to overcome the negative costs of childbearing, and tertiary educated women observe the possibility of reconciling parenthood with a career (from other mothers), women's higher educational attainment increases fertility intentions. Conversely, from an examination of 11 European countries, Beaujouan and Berghammer (2019) note that highly educated women are more likely to display intentions to remain childless if reconciling parenthood and careers are difficult in a given societal setting. Apart from additional control and resources, tertiary educated women (possibly due to their better bargaining position in a relationship) also receive more help from their partners, which increases the likelihood of wanting to have more children after the first birth (Cheng and Hsu 2020). De Wachter and Neels (2011) highlight that a positive educational gradient can be observed for women, not just regarding their own, but their partner's education as well, as those with tertiary-educated male partners have higher fertility intentions. However, the positive influence of education might not be present for all intended outcomes: in their meta-analysis of 86 studies from 13 European countries between 1990 and 2011, Testa and Stephany (2017) only found a positive educational effect for first and second-intended births, but none when examining third or higher-order intentions.

*Exposure to parental and relationship dynamics*. As all theoretical perspectives put significant emphasis on beliefs about parenthood and the social structure from which an individual gathers experiences regarding childbearing and parenthood, they are important determinants of fertility intentions. Kotte and Ludwig (2011) demonstrate that fertility preferences are transmitted intergenerationally, as having more siblings is related to a higher intended number of children in Germany. In their detailed analysis, Lois and Becker (2014) also note that a social network with more parents is positively related to the intention of having children, especially for younger persons. Regarding negative events, Karhunen, Jokela and Golovina (2023) show that growing up in a single-parent household and the negative perception of parents is associated with a lower number of ideal children, and Merz (2012) posits that the experience of parental divorce in the childhood increases the intention to remain childless / to not have more children in the Netherlands.

Another important factor is the difference between singlehood, cohabitation and marriage. Being in a partnership is evidently important, as it is a prerequisite for realising childbearing intentions (Testa and Toulemon 2006). However, the difference between relationship types is less evident. Cohabitations are generally thought to be relationships with different dynamics, lower levels of commitment and institutionalization compared to marriages, depending on the country-level prevalence of cohabitation (Liefbroer and Dourleijn 2006). Hiekel and Castro-Martín show that marital intentions and marriage are positively related to fertility intentions, while the opposite is true for cohabitation without marriage or specific plans to marry (2014).

*Norms and values*. As discussed earlier, norms, values, and their related normative pressure are theorised to affect fertility intentions. A principal variable in this regard

is religiosity: results generally show that higher religiosity is associated with higher fertility intentions (Hayford and Morgan 2008) regardless of gender (Buber-Ennser and Berghammer 2021), but cross-country variability is notable, as research indicates that religiosity has a stronger influence in more traditional countries. Results from Poland also uncover an important mechanism: religiosity moderates the perceived costs of childbearing for women, and religious people see more positive benefits of childbearing than non-religious ones (Bein, Mynarska and Gauthier 2021).

Another aspect of an individual's values is their subjective attitude about gender roles. In Finland, Miettinen, Gietel-Basten and Rotkirch (2011) find that childless men with more egalitarian attitudes had higher fertility intentions, while Lappegård, Neyer and Vignoli (2021) highlight the multidimensional nature of the issue. Mothers with egalitarian attitudes about fathers' roles are inclined to have more children. However, egalitarian attitudes about women in the public sphere also reduce fertility intentions for childless women and mothers. Okun and Raz-Yurovich (2019) note that women who do more housework tend to form a consensus with their partners about the intention not to have more children and that progressive gender attitudes reduce the intention to have at least one more child due to the already unequal division of labour paired with the newer need to have a career. A recent analysis of 25 European nations (Han, Gowen and Brinton 2023) corroborates this, finding that country-level gender ideology affects fertility decisions: for full-time working women in countries where norms prescribe dual responsibilities (work and household), the intention to have a second child is less likely to be present.

Finally, in recent years, the importance of attitudes about climate change and their link to fertility intentions has been proposed. Although still an under-researched field of study, some empirical results exist on which we can base our expectations. In their multilevel model, De Rose and Testa (2015) show that while around a fifth of all men and women (ages 20–45) in the EU-27 highlight climate change as the biggest problem for the future, they find a positive effect in relation to fertility intentions instead of a negative one, as individuals who are concerned with climate change plan to have more children. This suggests that future parents worry about the changing climate and its effects to a greater degree. This corresponds well with more recent studies that highlight younger individuals' greater concern for climate change and the well-being of their existing and future expected children (Schneider-Mayerson and Ling 2020) and that living a more climate-friendly life and/or educating future children about environmentalism resolves the ethical dilemma of having/planning to have children in an age of climate change (Bodin and Björklund 2022).

## 3. The Hungarian context

From a theoretical standpoint, both TPB and the CSM emphasize the importance of the social environment, which affects childbearing intentions through expectations and norms. In this regard, Hungary shows a complex picture. While early studies after the transition link the post-socialist period with the pluralization of values (Füstös

and Szakolczai 1994, 1999), traditionality is still noted to be prevalent (Keller 2009). However, the contradiction of traditional opinions paired with progressive behaviour is often observable (Utasi 1996; Dupcsik and Tóth 2008). for example, Pongráczné and S. Molnár (2011) show that women's paid work and financial contribution are increasingly important for couples, while Murinkó (2014) notes that Hungarians are also likely to think that women's higher relative income is detrimental to marriage. These contradictions imply that SDT theory (which proposes both behavioural and value changes) has limited applicability in the Hungarian context.

Regarding childbearing, parenthood and overall gender norms, the picture is similar. Even though Hungarian women entered the workforce early after the Second World War, the traditional norm of familism still remains dominant today (Pongráczné 2005) as there was no particular alternative after the transition, and it remained unchallenged from a political standpoint (Dupcsik and Tóth 2008). Corresponding to this, recent results show that the majority of adult Hungarians still think that childbearing is essential for happiness (Szalma and Takács 2016), and even for young university-educated women, motherhood as an identity is very important (Pápay et al. 2014). After the economic crisis in the late 2000s, when women's economic contribution became essential and, in turn, could have accelerated a change towards egalitarianism, traditional familism remained and was later supported by the subsequent conservative policies (Gregor 2016), as gender-based inequalities and a gendered role division were further legitimized (Csányi 2019). Consequently, in an environment where women participate in the workforce and their financial contribution is regarded as important (Pongráczné and S. Molnár 2011), women are expected to do all the housework and childrearing while men are still characterized as breadwinners (Pongráczné 2005; Blaskó 2005, 2006; Makay and Spéder 2018), although some empirical analyses also highlight the presence of dual expectations for men (Spéder 2011; Makay and Spéder 2018).

In this unique Hungarian context, several recent studies examined childbearing intentions. Educational attainment and socioeconomic attributes are especially important determinants of fertility intentions: Veroszta and Györgyi (2021) found that for mothers expecting their first child, higher education is linked with future intentions to have more children, and Spéder and Kapitány (2009, 2015) observed that higher educational attainment is associated with an increased probability of realizing fertility intentions. Conversely, negative socioeconomic factors such as unemployment and low household wealth are connected with weaker intentions (Spéder and Kapitány 2009, 2015; Veroszta and Györgyi 2021). However, employment might have a gender and parity-specific effect. According to Bognár (2008), a couple is more likely to plan for a first child if the man is employed but less likely to plan for a second one (after the first one) if the woman is in employment. It should be noted that childbearing plans differ across regions in Hungary: in rural, economically deprived villages, women plan to have more children and aim to have their first birth earlier in the life course (Boros and Bucher 2020).

Individual and societal norms also exert an influence over intentions in Hungary. In a comparative study, Philipov, Spéder and Billari (2006) noted that religiosity and the importance of children compared to work have a positive effect, while high societal anomie and low social capital negatively influence fertility intentions. Other studies also highlight that religiosity in Hungary is linked with a positive attitude towards marriage and a higher number of intended children (Ragadics 2018), and general social pressure increases the probability of realized fertility intentions (Spéder and Kapitány 2021).

A few studies have also examined the topic of voluntary childlessness in Hungary specifically. Miettinen and Szalma (2014) show that voluntary childlessness in Hungary is low compared to other countries (around 4% for men and 5% for women of ages 18–40), and Spéder and Kapitány (2007) emphasize that even amongst this small group, intentions to remain childless might not be permanent for some individuals. According to their results, 16.2% of childless persons would reconsider if certain circumstances changed, and 10.3% would be open to changing their opinions later on. Other results imply the importance of family dynamics, education, employment and green attitudes for childlessness. Based on qualitative interviews, Nagy and Pári (2021) demonstrate that voluntary childlessness is linked with exposure to bad parental dynamics: those who expressed an intention not to have children mentioned a previously difficult family life, conflict and neglect. Szalma and Takács (2012) found that women with a tertiary education and a career are more prone to postpone first childbearing. Green behaviour might also influence decisions about childlessness. Some respondents in the study of Nagy and Pári (2021) said they do not want to expose potential children to the effects of climate change. This corresponds with the fact that most adults (79.2%) in Hungary are concerned with the future of their children due to the changing environment (KINCS 2020).

## 4. Data and methods

To explore the fertility intentions of young Hungarian adults, we used data from a survey of Hungarian youth conducted in 2020 (Magyar Ifjúság Kutatás 2020). The survey has been administered every four years since 2000, and the 2020 wave has an original sample size of 8,000 and is representative of the 15–29-year-old Hungarian population in terms of age, gender, domicile, region and education. Respondents were interviewed on various topics such as family, health, environmentalism, politics, life-course events, plans, and consumption-related habits, with smaller subsamples (N = 2,000) responding to different survey modules. The 2020 wave was conducted using computer-assisted personal interviewing (CAPI), with an average interview duration of 41–43 minutes, depending on the subsample. Because the fieldwork was done between September and December of 2020, results are potentially impacted by the effects of the COVID-19 pandemic, as the first documented case was in early March, and restrictions that impacted the life of young adults (such as those attending

universities) were introduced shortly after. Luppi, Arpino and Rosina (2020) note that people under 30 have potentially been more impacted by the crisis, resulting in the abandonment of fertility plans, especially in countries where the labour market and economic situation is less optimistic.

As we are interested in the fertility intentions of childless young adults, from this original sample, we selected a sample of adult men and women (ages 18–29) who were childless, born in Hungary, and who provided answers to the main dependent and all independent variables (sample selection and non-response detailed in appendix table A1).[3] The final sample consists of 4,340 respondents. In our analysis, our main dependent variable is long-term fertility intentions. Respondents were asked to state the number of children they want to have without specifying an exact time frame.[4] Responses ranged from 0 to 10 children. As intentions of four children or more were rare amongst the childless at the time of the survey, these respondents were omitted. We argue that grouping them with persons of other outcomes would have biased our results, as they have highly distinct aims representing unique circumstances, personalities, and social mechanisms. Therefore, we study fertility intentions from voluntary childlessness to planning to have three children.

Corresponding to the previously detailed possible determinants of fertility intentions, we employed a wide range of independent variables in our models. From the socioeconomic factors, we included employment (as a dichotomous variable), subjective household economic status (collapsed from four categories into a dichotomous variable indicating the presence or absence of considerable economic hardship), and the respondent's domicile (measured as Budapest, city or village) which (in part) accounts for regional socioeconomic differences. We measure educational attainment as a four-category variable, indicating elementary or lower, secondary or tertiary education, with secondary education split into those who are enrolled into tertiary education and those who are not to account for respondents without a finished educational track. We also included parental education (elementary or lower, secondary or tertiary) as an indicator of socioeconomic origin, following the dominance method: either the highest educated parent's attainment or the one with a valid answer is used as an indicator of origin. The second group of variables entail the gender of the respondent, parental separation (separated or not) as a proxy for childhood parental dynamics and relationship status (single, cohabiting or married).

The third and final set of dependent variables are related to the individual's norms and values. First, we measured religiosity as a three-category variable, differentiating between non-religious, religious but in their own way, and religious (church-following)

3 It could be argued that while 18 is the legal age of adulthood, from a sociological sense, those in education might still be considered not full adults. All analyses presented in our study were redone on a sample of individuals whose main activity was not being in education. Results did not change substantially compared to those presented in this paper.

4 The original question stated: "How many children do you want to have?". If respondents already had children or were pregnant at the time of the survey, the question refers to the number of children they want together with those they already have/are already expecting.

persons. Second, we included a scale (0 to 7) of political attitudes, where higher values indicate more conservative attitudes. Third, we created an index of positivity towards Hungary from the mean of six items in the survey,[5] with higher values signalling a more positive attitude. In our interpretation, this latter variable partially reflects young adults' evaluations of their country, their level of patriotism and adherence to the country's prevalent pro-natalist norms, which affect plans for the future.

It is important to note that a fairly large number of respondents refused to answer/ did not provide any meaningful response to the intention question (see Appendix Table A1). Supplementary analyses (available from the authors) using a binary logistic model where the outcome variable was refusal / non-response revealed that men, younger individuals, those in a bad economic situation and those who were less positive towards Hungary were less likely to provide meaningful answers. Therefore, our results are potentially biased in this regard.

**Table 1:** *Fertility intention according to gender*

| Intention | Men | Women |
|---|---|---|
| Childless | 13.9% | 9.8% |
| 1 child | 22.6% | 18.8% |
| 2 children | 54.2% | 58.6% |
| 3 children | 9.3% | 12.8% |

*Note: N = 4,340.*
*Source: Magyar Ifjúság Kutatás 2020.*

Table 1 shows fertility intentions by gender, and Table 2 presents the descriptive statistics of the final sample. Gender differences in intentions are not significant: slightly more men intend to be childless or to have only one child, while women lean towards having two or three children to a greater degree. The mean age of our sample is 23.3, and men are slightly better represented (52.6%) than women due to the fact that we selected childless respondents and as women's first childbearing age is lower in Hungary, this results in potential bias. Two-thirds of the sample is employed (67.9%), and only 3% reported daily economic hardships at the time of the interview. Nearly a fifth of the sample lives in Budapest (17.7%), more than every fourth in a village (27.7%), and more than half in a city (54.6%) other than the capital. Half of all members of the sample have a secondary education (49.4%), with an additional 23% secondary educated respondents attending tertiary education at the time of the survey. Only a tenth (11.2%) have an elementary or lower education, and 16.4% already

5 The items asked the respondent to rate whether he or she agrees with certain statements ("I feel Hungarian", "Generally, I like Hungarian people more than people from other nations", "I am proud to be Hungarian", "I love the Hungarian language", "I love Hungary", "I am proud to be a Hungarian citizen") on a 1-5 scale, where higher values indicate agreement. Two questions were not used because they tapped into future plans ("I want to live the majority of my life in Hungary") or questions that were more economic in nature ("Hungary is the best country to live in"). As such, they loaded into a different factor in exploratory factor analysis (results available from authors). The remaining six items were loaded onto one common factor (71% cumulative variance, with Cronbach alpha = 0.92).

have at least a BA diploma. Regarding parental educational background, the highest-educated parent of most of the respondents has a secondary degree (71.2%), followed by tertiary (22.6%) and elementary or lower (6.2%) education. Only every tenth person has separated parents (10.5%). Most respondents were single (78.7%), 15.8% had a cohabiting partner, and 5.5% were already married. Looking at attitudes and values, only 5.2% reported that they were church-following religious persons, while most are either religious in their own way (50.7%) or non-religious (44.1%). Most respondents leaned towards centrist and non-conservative values (with a 3.6 mean on a 0–7 scale) and had a positive attitude towards Hungary (with a mean of 4.3 on a 1–5 scale).

**Table 2:** *Descriptive statistics of the sample*

| Variable | Mean / Percentage |
|---|---|
| **Age** | **23.3 (3.3)** |
| **Gender** | |
| Male | 52.6% |
| Female | 47.4% |
| **Employment** | |
| Employed | 67.9% |
| Not employed | 32.1% |
| **Subjective economic status (of the household)** | |
| At least managing | 97.0% |
| Economic hardships | 3.0% |
| **Domicile** | |
| Budapest | 17.7% |
| Other city | 54.6% |
| Village | 27.7% |
| **Educational attainment** | |
| Elementary or lower | 11.2% |
| Secondary | 49.4% |
| Secondary. in education | 23.0% |
| Tertiary | 16.4% |
| **Parental educational attainment** | |
| Elementary or lower | 6.2% |
| Secondary | 71.2% |
| Tertiary | 22.6% |
| **Parental separation** | |
| Separated parents | 10.5% |
| Non-separated parents | 89.5% |
| **Relationship status** | |
| Single | 78.7% |
| Cohabiting | 15.8% |
| Married | 5.5% |
| **Religiosity** | |
| Non-religious | 44.1% |
| Religious, own way | 50.7% |
| Religious | 5.2% |
| **Political attitude** | 3.6 (1.5) |
| **Positivity towards Hungary scale** | 4.3 (0.8) |
| **N** | **4340** |

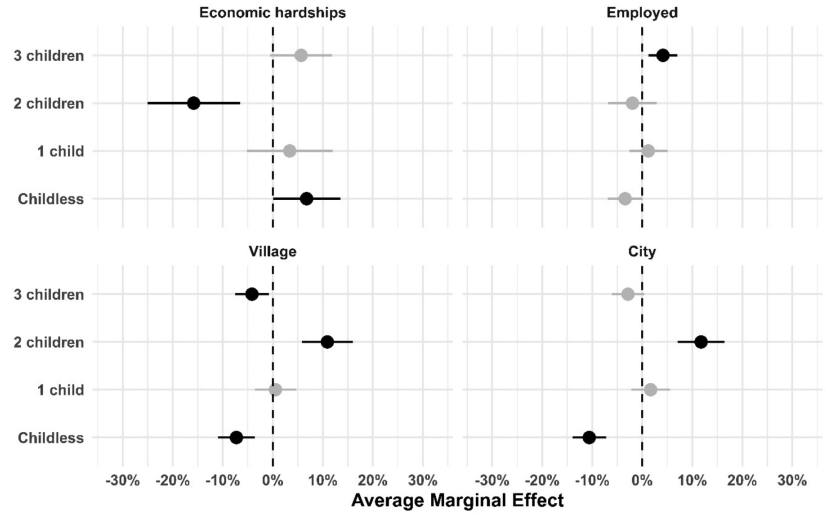
*Note: Values in parentheses indicate standard deviations. Source: Magyar Ifjúság Kutatás 2020.*

To estimate the childbearing intentions presented in Table 1, we used multinomial logistic regression models (Korosteleva 2019: 71–105), which treated the four distinct intentions (childless, one child, two children and three children) as separate outcomes. Although other methods are also applied in relevant studies (such as OLS linear regressions, ordinal models or count-based estimations), we argue that these intention outcomes are very different, especially childlessness, and should be modelled using an approach that properly distinguishes them.[6] Apart from a main model containing all the selected independent variables, we examined possible interactions based on age and/or gender. For ease of interpretability and comparability across models, we present the average marginal effects (AME) of the models, which is an unbiased measure in the presence of unobserved heterogeneity (Mood 2010; Bartus, Kisfalusi and Koltai 2019). All multinomial models with multiple specifications and AMEs are available in the online supplement.

## *Results*

### *4.1. Main effects*

**Figure 1:** *Effect of economic hardships (ref.: at least managing), employment (ref.: not in employment) and current domicile (ref.: Budapest)*

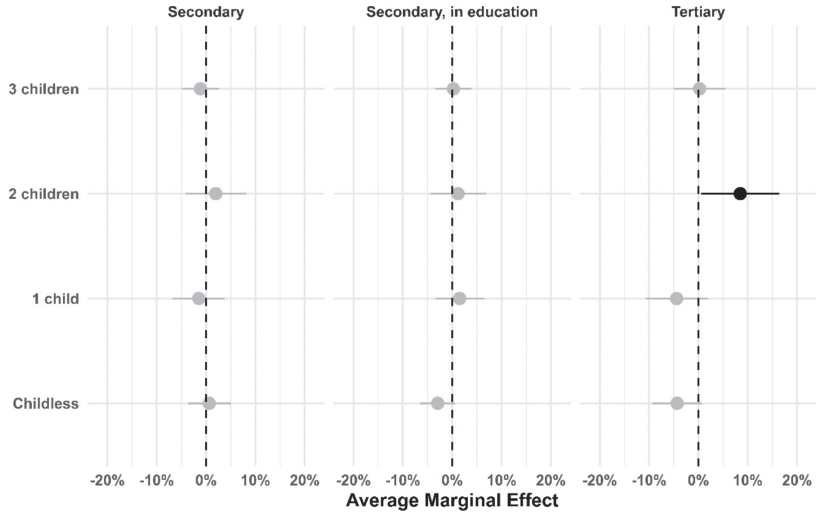



*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

6 As an alternative approach, we also fitted a model using an ordinal instead of a multinomial logistic regression. In the case of the ordinal model, the proportionality assumption (at $p < 0.05$ and $p < 0.01$ as well) did not hold for nearly all included variables, which required that outcome-specific effects had to be specified – which resulted in a final model specification highly similar to the multinomial logistic models presented in the paper.

First, we start the discussion of our results based on the main model, where we control for the effect of all independent variables without interactions. Looking at socioeconomic attributes, Figure 1 presents the AMEs of economic hardships, employment and current domicile. Results show that young adults who struggle economically are more likely to consider childlessness (+6.8%) and, conversely, less prone to having two children (-15.8%) than those in a manageable situation. Employment only had a weak effect, as those who are employed have a slightly higher probability of planning to have three children (+4.2%). Current domicile has an interesting influence: compared to those who live in the capital, individuals from other cities or villages are less likely to aim for a childless future (-10.6% and -7.3%, respectively) but intend to have two children (+11.8% and +10.9%). We also detected a weak (-4.2%) negative effect of village-living for three children. All in all, socioeconomic variables, especially economic hardships and current domicile, have a detectable effect on childbearing intentions.

**Figure 2:** *Effect of respondent's education (ref.: elementary or lower)*

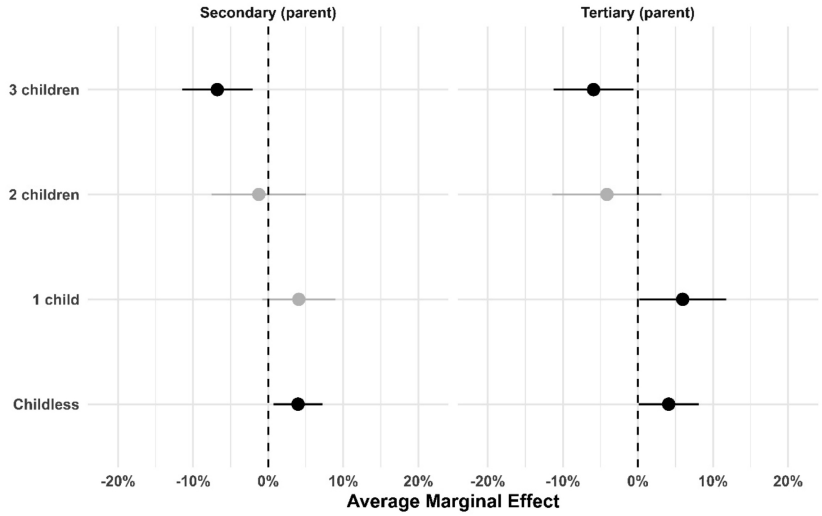



*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

While previous Hungarian results emphasized the role of education, educational attainment (Figure 2) has no overarching influence over fertility intentions based on our models. We only found a positive, significant result for tertiary education; compared to those with elementary or lower education, tertiary-educated young adults are +8.6% more likely to intend to have two children. Because the models also include parental

education, we tested whether the omission of parental educational background affects the above-presented results. Comparison of the two models (available from authors) indicates that without the inclusion of parental education, the individual educational attainment of young adults still has the effect presented in Figure 2. Also, significant interaction between individual and parental education is not present.

**Figure 3:** *Effect of parental educational attainment (ref.: elementary or lower)*



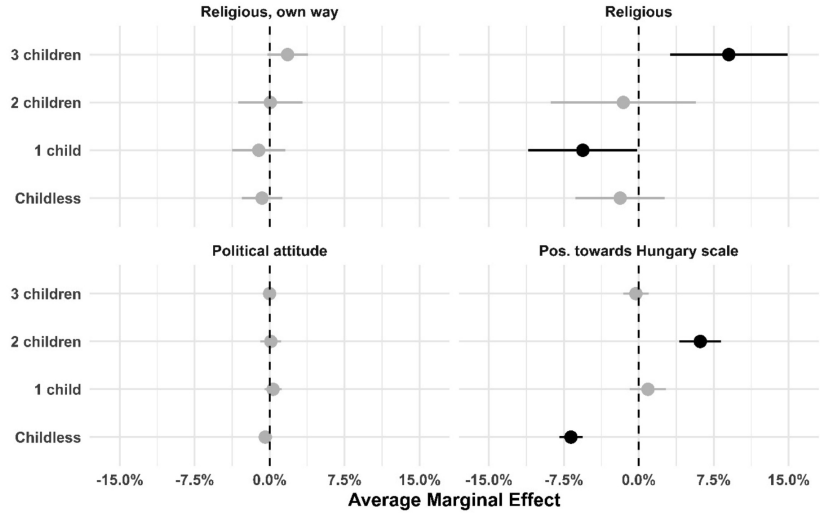

*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

Compared to individual educational attainment, parental education proved to be more influential (Figure 3) in relation to the fertility intentions of young adults. Unlike those with elementary or lower educated parents, those with secondary/tertiary educated parents are slightly more likely to consider forgoing childbearing (+4.0% and +4.1%) and less likely to aim for three children (-6.8% and -5.9%). Also, tertiary parental education increases the likelihood of single-child intentions (+6%). In further models (not shown), we tested whether there is a two-way interaction between respondent and parental education or a three-way interaction between gender, respondent education and parental origins. However, both models failed to show significance for the interactions.

Figure 4 depicts the AMEs of the value-related variables. Compared to non-religious persons, only church-following religiosity had a significant effect, as these young adults are more likely to intend to have three children (+9%) and less likely to plan to have only one (-5.6%). The individual's political attitude had no effect. Last, those who are more

positive towards Hungary are more likely to intend to have two children (+6.2% per scale point) and less likely to choose childlessness (-6.8% per scale point).

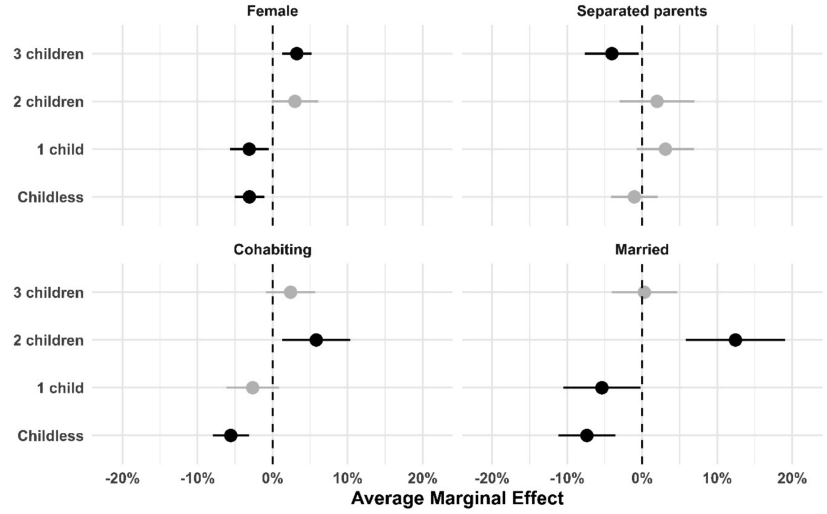
**Figure 4:** *Effect of religiosity (ref.: non-religious), political attitude (higher indicates more conservative) and positivity towards Hungary scale (higher indicates more positive attitudes)*




*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

Looking at the final set of variables, the gender effect mirrors the results of Table 1; compared to men, young adult women are somewhat less likely to intend to be childless (-3.1%) or want to have one child (-3.1%), but more prone to aim for three children (+3.2%). Parental separation has a negative effect according to our model: if the individual's parents separated, then they have a lower probability of intending to have three children (-4%). Those in partnerships generally want more children, especially if they are married. Both cohabiting (-5.6%) and married (-7.4%) young adults are less likely to aim to be childless or intend to have only one child if married (-5.4%) but have a higher probability of wanting two children (+5.8% for cohabitors and +12.4% for married persons).

**Figure 5:** *Effect of gender (ref.: male), parental separation (ref.: not separated) and relationship status (ref.: single)*



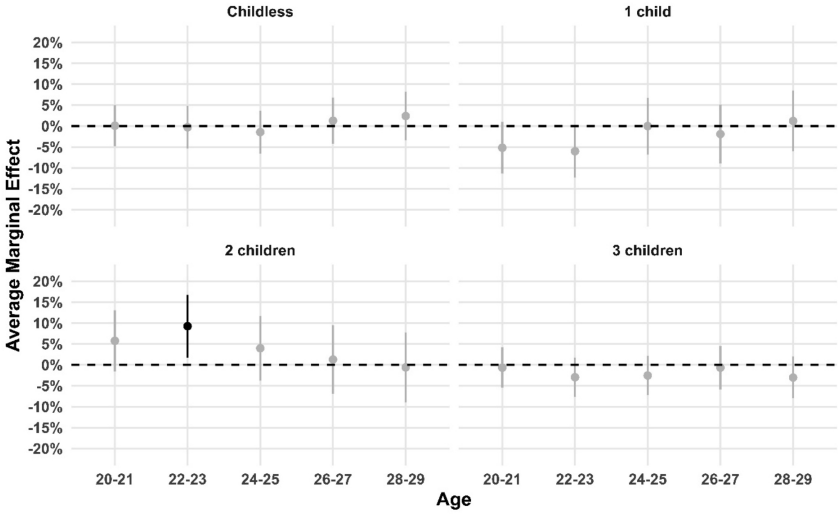

*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

## *4.2. Variability of intentions by age and gender*

In our second model, we further explored the age and gender effect on fertility intentions. To avoid overly uncertain estimations and to facilitate the understanding of the interaction, we created six two-year age groups and included an interaction term between the age groups and gender. According to our results, age has a significant effect, which varies by gender. Figure 6a shows the AMEs for men and Figure 6b for women. Our results reveal that intentions do not seem to change substantially for male young adults compared to those aged 18–19. Only in the case of the two-children outcome do we see a positive increase at ages 22–23 (+9.2%).

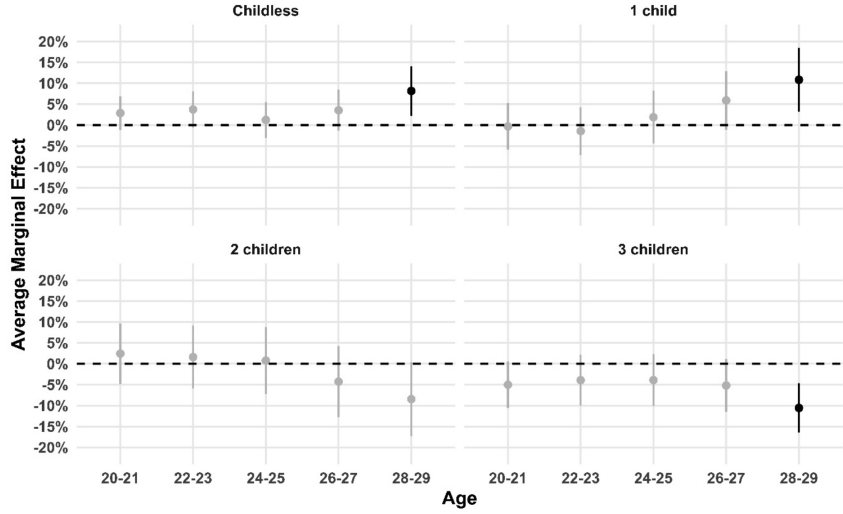
For women, the picture is quite different. Compared to the age group of 18–19, women who are at the end of their young adulthood change their fertility intentions substantially. They are more likely to opt for childlessness (+8.2%) or having one child (+10.8%) and less prone to aim for three children (-10.6%). Opinions regarding the intention to have two children do not seem to change across age groups for women.

**Figure 6a:** *The effect of age on fertility intentions, men*




*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

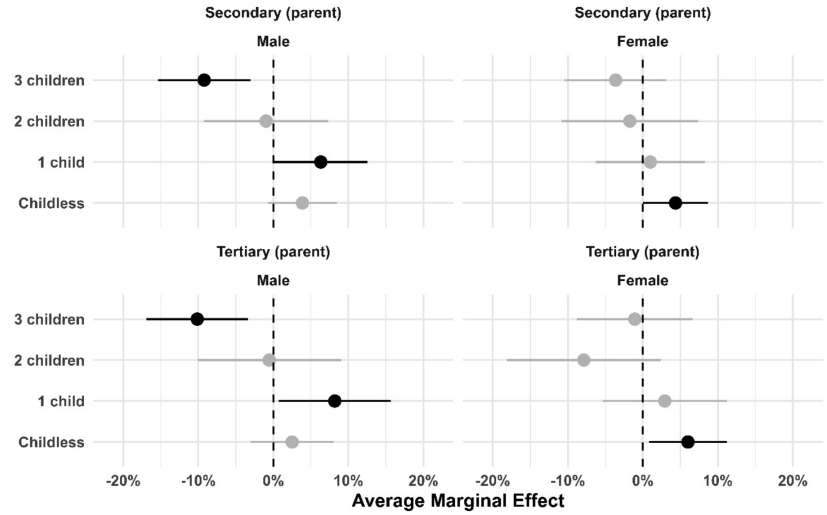
**Figure 6b:** *The effect of age on fertility intentions, women*




*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

## *4.3. Gender interactions*

**Figure 7:** *Gender-specific effect of parental education (ref.: elementary or lower) on fertility intentions*

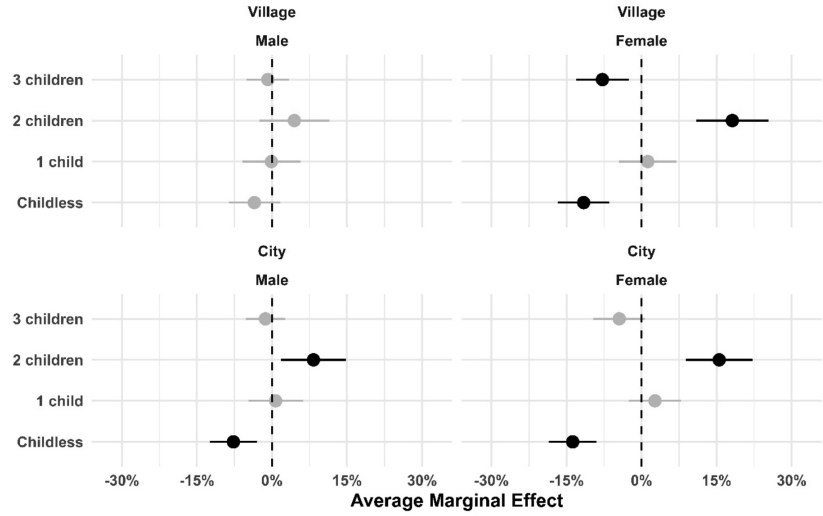



*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

In the third part of our analysis, we examine gender interactions for all independent variables that were included. Results show that parental education (model 3) and current domicile (model 4) have a gender-specific influence on fertility intentions. Regarding the former, while the main effect model suggested that both secondary and tertiary-educated parents have weaker intentions to have three children, the interaction suggests that this is only true for men (-9.2% and -10.1%). For men, compared to elementary or lower educated parents, both secondary (+6.3%) and tertiary (+9.2%) parental education increases the probability of intending to have only one child, but this effect is not visible for women. The previously observed childlessness effect of parental education is observable only for women (+4.4% for secondary-educated parents and +6.3% for tertiary).

In the case of current domicile, the previously described effects from the main model hold true for women (-11.6% for childlessness, +18.1% for two children and -7.8% for three for women in villages, and -13.8% for childlessness and + 15.5% for two children for those from cities) and men who live in cities (-7.7% for childlessness and +8.3% for two children). However, interestingly, men who live in villages have no different fertility intentions than those from the capital.

**Figure 8:** *Gender-specific effect of current domicile (ref.: Budapest) on fertility intentions*




*Note: N = 4340. Estimates stem from multinomial logistic regression models. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020.*

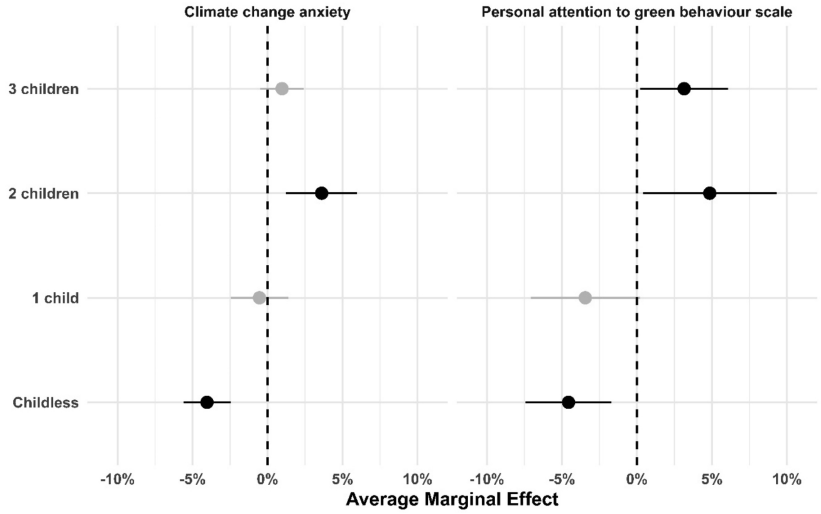
## *4.4. Exploring the effect of climate change anxiety and green behaviour*

In the final part of our analysis, we selected two subsamples (N = 1.115 and N = 1.161 childless young adults aged 18–29) from the original survey in which respondents answered questions about their anxiety concerning climate change or their personal green behaviours. As detailed earlier, the subsamples reflect the different modules addressed to specific respondents instead of the whole sample, hence the smaller sample size. While the anxiety variable is a single-item scale (1 to 5, where higher values indicate more anxiety), we created a simple mean scale from four items where individuals indicated on a 1–4 scale how likely they are to behave in a way that is beneficial to the environment.[7]

As these samples were associated with considerably fewer responses, we could only control for gender and age effects in the multinomial logistic regression models (model 5a and model 5b). Figure 9 shows the results. Generally, it can be said that those with higher climate change anxiety (-4% per scale point) and attention to green behaviour (-4.6% per scale point) are less likely to intend to be childless and more prone to plan for two children (+3.6% and +4.9% per scale point, respectively). In the case of green behaviour, a positive effect is visible for three children as well (+3.1% per scale point).

7 The questions included whether the person pays attention to collecting garbage selectively, tries to create the least amount of waste, chooses to travel in the least climate-impacting way and tries to conserve electricity, heating or water. The four items were loaded onto one factor according to exploratory factor analysis (74% cumulative variance and Cronbach alpha = 0.91).

**Figure 9:** *Climate change anxiety and green behaviour*




*Note: N = 1.115 for the climate change anxiety scale and N = 1.161 for the green behaviour scale. Estimates are from different subsamples of the main sample, using multinomial logistic regression models. Models only control for gender and age. The dashed lines indicate zero effect. The ranges represent the 95% confidence interval of the estimates. Black data points are significant, at least at the 0.05 level. Source: Magyar Ifjúság Kutatás 2020 subsamples.*

## 5. Discussion

In our study, we explored the fertility intentions of Hungarian young adults using a novel representative survey. From a theoretical perspective, we proposed that a wide range of factors shape beliefs (TPB) and schemas (CSM), which result in expressed childbearing intentions. In the Hungarian context of sub-replacement fertility, changing childbearing behaviour and enduring familism / pro-natalism, our study makes an important contribution to understanding childlessness, childbearing, and changing intentions.

While we highlight multiple important mechanisms, our examination is not without limitations. First, the sample is restricted to childless young adults, which introduces selection bias, as those who already had a child before age 30 are absent from the sample. Second, as the fieldwork was done during the COVID-19 pandemic, intentions might be biased due to the negative effect of the crisis on young adults' fertility plans (Luppi, Arpino and Rosina 2020). Third, the refusal / non-response is fairly high regarding fertility intentions. Men, younger individuals, those experiencing economic hardships and those who are less positive towards Hungary were less likely to provide meaningful answers. Fourth, we only studied intentions of having up to three children. Therefore, we cannot formulate conclusions about those who intend to have large families during their life course. Fifth, most studies we cited as previous results (from Hungary or otherwise) do not employ samples of just young adults;

therefore, the comparability of our data to other empirical work is limited. This is especially true for childlessness, as we mainly examine early articulators. Sixth, we used a simplistic measure of regional differences due to sample size limitations, and the issue of regionality should be examined more thoroughly. Finally, although the effect of climate anxiety and environmental issues is an emerging topic which needs systematic examination and contribution, we could only analyse the topic on restricted samples with limited controls.

In our empirical approach, we used multinomial logistic regression models where the outcome variable was fertility intentions from childlessness to having three children. Apart from testing the main effects of the selected socioeconomic, demographic, parental, relationship-specific and value-related variables, we also analysed possible interactions with age and gender. Our main findings can be summarized as the following:

(1) The socioeconomic circumstances of young adults clearly influence fertility intentions. Those who experience economic hardship are less likely to aim for two children but lean towards childlessness, and employed individuals are more likely to intend to have three children. Those not living in the capital city are less prone to choose childlessness and instead plan to have two children, especially women. Overall, these results confirm previous international (Fahlén and Oláh 2015; Modena, Rondinelli and Sabatini 2013; Hanappi et al. 2017) and Hungarian (Spéder and Kapitány 2009, 2015; Veroszta and Györgyi 2021) data on the importance of socioeconomic factors and current domicile (Boros and Bucher 2020). However, our interaction models did not find evidence for the gendered effect of employment (Bognár 2008) for young adults.

(2) While educational attainment is emphasized as a major factor in childbearing intentions across countries (Testa 2014; Beaujouan and Berghammer 2019; De Wachter and Neels 2011; Testa and Stephany 2017) and in Hungary (Veroszta and Györgyi 2021; Spéder and Kapitány 2009, 2015), we only found limited support for this effect for those aged 18–29, as tertiary educated young adults intended to have two children with increased probability. Interaction models did not show any evidence of age- or gender-specific effects. Additionally, these results do not change with the omission of parental education, and there is no significant interaction between the two (models available from the authors). It can be proposed that individual educational attainment has less influence on the intention of childless young persons than previously thought, or perhaps the relatively recent (conducted in 2020) nature of our data indicates a certain level of convergence of intentions across educational groups in Hungary.

(3) Contrary to the relatively weak influence of individual educational attainment, parental educational origins had a more profound and gender-specific effect according to our models. Young adult men with non-elementary educated parents have weaker intentions to have three children and an increased

probability of aiming for only one child. However, the probability of voluntary childlessness is slightly higher for women with non-elementary educated parents. In summary, our results indicate that parental education exerts a complex influence on fertility intentions, which can partially be attributed to the role of parental education in socioeconomic origins.

(4) Regarding individual values, our results confirm that church-following religiosity increases fertility intentions for both genders (Hayford and Morgan 2008; Buber-Ennser and Berghammer 2021; Philipov, Spéder and Billari 2006; Ragadics 2018). Political attitude had no noticeable effect, while positivity towards Hungary was related to stronger intentions of having two children and a smaller likelihood of childlessness. As the positivity scale is built from items related to feelings of national identity, we propose that this variable taps into young persons' evaluation of their country, patriotism, and adherence to the dominant norms, which can be described as pro-natalist. Expectedly, those who are more positive about being Hungarian at the time of the interview might feel more content with the country's overall state and, therefore, plan to have more children in the future.

(5) Experience of parental dynamics and current relationship status influences fertility intentions in an expected way. Verifying previous results, those with separated parents (implying a non-positive dynamic) are less likely to plan for three children (Karhunen, Jokela and Golovina 2023; Merz 2012; Nagy and Pári 2021). Although the effect was found to be relatively weak and the number of children exposed to parental divorce is decreasing in Hungary, the total divorce rate of marriages is still 0.33 (Makay and Murinkó 2021), implying that it can affect a relatively large proportion of future men and women of childbearing age. Our results also corroborate the findings of Hiekel and Castro-Martín (2014) and general observations regarding the difference between cohabitation and marriage (Liefbroer and Dourleijn 2006). Although there is a level of similarity between both relationship types (reducing the likelihood of childlessness and increasing the probability of having two children), marriage has a stronger positive effect on two-children intentions. Also, it reduces the risk of aiming for only one child. Marriage seems to be a more positive determinant of stronger intentions than cohabitation, which is important as marriage rates are on the rise in Hungary (Murinkó and Spéder 2021).

(6) Age and gender have a complex and interacting influence on young adults' fertility intentions in Hungary. Compared to younger respondents, women at the end of their early adulthood (ages 28–29) turn towards childlessness or having one child, with a smaller probability of intending to have three children, while men's fertility plans are not as age-dependent as women's. Although the results are from a cross-sectional comparison instead of a longitudinal study, they have important implications. First, we corroborate that intentions are

age-dependent, as other studies noted earlier (Iacovou and Tavares 2011; Liefbroer 2009; Spéder and Kapitány 2007). Second, in light of the fact that the average age at first birth is 28.3 (Kapitány and Spéder 2021), the late twenties for women are highlighted as a critical period in the formulation of fertility intentions before realized fertility behaviour. We argue that this is the time when young adult women finalize their transition into adulthood, consider the competing aims of childbearing and a career, and examine the possible pros and cons of larger family size (Murinkó 2019) – which, at the end of the day, results in a weakening of intentions.

(7) Finally, we used two separate models to estimate the effect of climate change anxiety and green behaviour using two smaller subsamples. Although our results should be considered in light of their limitations as we could not control for some important factors such as education, we found that those who are more anxious about climate change and behave in a more environmentally conscious way intend to have two or three children instead of opting for childlessness. This cross-sectional association may be a sign that those who plan to be future parents worry more (Schneider-Mayerson and Ling 2020; Bodin and Björklund 2022) about climate change and the environment (which entails the future conditions under which their children will have to live), corroborating the evidence presented by De Rose and Testa (2015). Still, this question requires further examination with more controls and larger sample sizes.

As our study is exploratory, we encourage future work that challenges our results and methods, examines specific topics in greater detail, and employs different methodologies to study fertility intentions. Potential avenues of future research include the issue of regionality for young adults and the deeper examination of effects related to living in villages, cities and the capital. Another interesting topic is the role of education, where parental origins seem to have a more substantial influence than individual attainment in young adults. A comparative approach (young adults compared to a general adult sample) could perhaps illuminate potential mechanisms. The effect of parental dynamics should be examined with finer measures as well. Depending on the timing of separation and the severity of the conflicts leading to it, effects on childbearing intentions can differ. While our analyses shed light on gendered age-specific changes in intentions, their scope is limited due to the cross-sectional nature of our sample of young adults. Using longitudinal samples, trajectories of intentions and their fulfilment may be tracked more precisely and for longer. Finally, the link between climate anxiety, environmentalism and fertility has to be explored further, as the current literature with representative samples is highly limited. All in all, the topic of childbearing intentions still raises many unanswered questions.

## 6. Literature

Ajzen, I. – Klobas, J. (2013): Fertility intentions: An approach based on the theory of planned behavior. *Demographic Research*, 29(8): 203–232. https://dx.doi.org/10.4054/DemRes.2013.29.8

Ajzen, I. (1991): The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2): 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Albertini, M. – Brini, E. (2020): I've changed my mind. The intentions to be childless, their stability and realisation. *European Societies*, 23(1): 1–42. https://doi.org/10.1080/14616696.2020.1764997

Avison, M. – Furnham, A. (2015): Personality and voluntary childlessness. *Journal of Population Research*, 32(1): 45–67. https://doi.org/10.1007/s12546-014-9140-6

Bachrach, C. A. – Morgan, S. P. (2011): Is the Theory of Planned Behaviour an appropriate model for human fertility? *Vienna Yearbook of Population Research*, 9: 11–18.

Bachrach, C.A. – Morgan, S. P. (2013): A cognitive–social model of fertility intentions. *Population and Development Review*, 39(3): 459–485. https://doi.org/10.1111/j.1728-4457.2013.00612.x

Bartus, T. – Kisfalusi, D. – Koltai, J. (2019): Logisztikus regressziós együtthatók összehasonlítása. *Statisztikai Szemle*, 97(3): 221–240. https://doi.org/10.20311/stat2019.3.hu0221

Beaujouan, E. – Berghammer, C. (2019): The gap between lifetime fertility intentions and completed fertility in Europe and the United States: A cohort approach. *Population Research and Policy Review,* 38(4): 507–535. https://doi.org/10.1007/s11113-019-09516-3

Becker, G. (1991): *A Treatise on the Family (extended edition)*. Cambridge: Harvard University Press.

Bein, C. – Gauthier, A.H. – Mynarska, M. (2021): Religiosity and fertility intentions: Can the gender regime explain cross-country differences? *European Journal of Population*, 37(2): 443–472. https://doi.org/10.1007/s10680-020-09574-w

Bein, C. – Mynarska, M. – Gauthier, A. (2021): Do costs and benefits of children matter for religious people? Perceived consequences of parenthood and fertility intentions in Poland. *Journal of Biosocial Science*, 53(3): 419–435. https://doi.org/10.1017/S0021932020000280

Bernardi, L. – Mynarska, M. – Rossier, C. (2015): Uncertain, changing and situated fertility intentions. In Philipov, D. – Liefbroer, A. C. – Klobas, J. (eds.): *Reproductive decision-making in a macro-micro perspective*. Dordrecht: Springer, 113–141.

Berninger, I. - Weiß, B. – Wagner, M. (2011): On the links between employment, partnership quality, and the desire to have a first child: The case of West Germany. *Demographic Research*, 24(24): 579–610. DOI: https://dx.doi.org/10.4054/DemRes.2011.24.24

Billari, F. C. – Kohler, H.-P. (2004): Patterns of low and lowest-low fertility in Europe. *PopulationStudies*,58(2):161–176.https://doi.org/10.1080/0032472042000213695

Blaskó Zs. (2006): Nők és férfiak - keresőmunka, házimunka. *KSH Népességtudományi Kutatóintézet Kutatási Jelentések 82*. Budapest: KSH Népességtudományi Kutatóintézet.

Blaskó, Zs. (2005): Dolgozzanak-e a nők? A magyar lakosság nemi szerepekkel kapcsolatos véleményének változásai, 1988, 1994, 2002. *Demográfia, 48*(2-3): 259-287.

Blossfeld, H.-P. – Huinink, J. (1991): Human capital investments or norms of role transition? How women's schooling and career affect the process of family formation. *American Journal of Sociology*, 97(1): 143–168. https://doi.org/10.1086/229743

Bodin, M. – Björklund, J. (2022). "Can I take responsibility for bringing a person to this world who will be part of the apocalypse!?": Ideological dilemmas and concerns for future well-being when bringing the climate crisis into reproductive decision-making. *Social Science & Medicine,* 302: 114985. https://doi.org/10.1016/j.socscimed.2022.114985

Bognár V. (2008): Gyermekvállalási tervek - munkaerő-piaci helyzet. *Demográfia*, 51(4): 356–375.

Boros, J. – Bucher, E. (2020): Szerepváltozások hátrányos helyzetű településeken élő családokban. *Esély*, 31(4), 3–31.

Brini, E. (2020): Childlessness and low fertility in context: Evidence from a multilevel analysis on 20 European countries. *Genus,* 76(6): 1–38. https://doi.org/10.1186/s41118-020-00074-7

Buber-Ennser, I. – Berghammer, C. (2021): Religiosity and the realisation of fertility intentions: A comparative study of eight European countries. *Population, Space and Place*, 27(2): e2433. https://doi.org/10.1002/psp.2433

Cheng, Y. A. – Hsu, C. (2020): No more babies without help for whom? Education, division of labor, and fertility intentions. *Journal of Marriage and Family*, 82(4): 1270–1285. https://doi.org/10.1111/jomf.12672

Csányi, G. (2019): Genderrezsim és „nőpolitika" Magyarországon 2008-2018. Történeti politikai gazdaságtani elemzés. *Fordulat, 2019*(26): 116–141.

De Rose, A. – Testa, M. R. (2015): Climate change and reproductive intentions in Europe. In Strangio, D. – Sancetta, G. (eds.): *Italy in a European context. Research into business, economics and the environment.* London: Palgrave Macmillan, 194–212.

De Wachter, D. – Neels, K. (2011): Educational differentials in fertility intentions and outcomes: family formation in Flanders in the early 1990s. *Vienna Yearbook of Population Research*, 9: 227–258.

Demeny, P. (2003): Population policy dilemmas in Europe at the dawn of the twenty-first century. *Population and Development Review*, 29(1): 1-28. http://dx.doi.org/10.1111/j.1728-4457.2003.00001.x

Dupcsik, CS. – Tóth, O. (2008): Feminizmus helyett Familizmus. *Demográfia,* 51(4): 307–328.

Fahlén, S. – Oláh, L. (2015): The impact of economic uncertainty on childbearing intentions in Europe. Families and Societies Working Paper Series 36.

Füstös, L. - Szakolczai, Á. (1994): Értékek változásai Magyarországon, 1978-1993. Kontinuitás és diszkontinuitás a Kelet-Közép-Európai átmenetben. *Szociológiai Szemle,* 4(1): 57–90.

Füstös, L. - Szakolczai, Á. (1999): Kontinuitás és diszkontinuitás az értékpreferenciákban (1977-1998): *Szociológiai Szemle*. 9(3), 54–72.

Gobbi, P. E. (2012): A model of voluntary childlessness. *Journal of Population Economics*, 26(3): 963–982. https://doi.org/10.1007/s00148-012-0457-1

Goldstein, J. – Lutz, W. – Testa, M.R. (2003): The emergence of sub-replacement family size ideals in Europe. *Population Research and Policy Review,* 22(5) :479–496. https://doi.org/10.1023/B:POPU.0000020962.80895.4a

Gregor, A. (2016): A nemi szerepekkel kapcsolatos attitűdök a 2000-es években Magyarországon. *Socio.hu,* 6(1): 89–111.

Gribaldo, A. – Judd, M. D. – Kertzer, D. I. (2009): An imperfect contraceptive society: Fertility and contraception in Italy. *Population and Development Review*, 35(3): 551–584. https://doi.org/10.1111/j.1728-4457.2009.00296.x

Hakim, C. (2003): A new approach to explaining fertility patterns: Preference theory. *Population and Development Review*, 29(3): 349–374. https://doi.org/10.1111/j.1728-4457.2003.00349.x

Han, S. W. – Gowen, O. – Brinton, M. C. (2023): When mothers do it all: Gender-role norms, women's employment, and fertility intentions in post-industrial societies. *European Sociological Review*, 2023: jcad036. DOI: https://doi.org/10.1093/esr/jcad036

Hanappi, D. – Ryser, V.-A. – Bernardi, L. – Le Goff, J.-M. (2017): Changes in employment uncertainty and the fertility intention–realization link: An analysis based on the Swiss household panel. *European Journal of Population*, 33(3): 381–407. https://doi.org/10.1007/s10680-016-9408-y

Hayford, S. R. – Morgan, S. P. (2008): Religiosity and fertility in the United States: The role of fertility intentions. *Social Forces*, 86(3): 1163–1188. https://doi.org/10.1353/sof.0.0000

Hiekel, N. – Castro-Martín, T. (2014): Grasping the diversity of cohabitation: Fertility intentions among cohabiters across Europe. *Journal of Marriage and Family*, 76(3): 489–505. https://doi.org/10.1111/jomf.12112

Iacovou, M. – Tavares, L. P. (2011): Yearning, learning, and conceding: Reasons men and women change their childbearing intentions. *Population and Development Review*, 37(1): 89–123. https://doi.org/10.1111/j.1728-4457.2011.00391.x

Inglehart, R. (1970): *The silent revolution*. Princeton: Princeton University Press.

Kapitány, B. – Spéder, Zs. (2021): Gyermekvállalás. In Monostori, J. – Őri, P. – Spéder, Zs. (eds.): *Demográfiai Portré 2021*. Budapest: KSH Népességtudományi Kutatóintézet, 45–65.

Karhunen, O. – Jokela, M. – Golovina, K. (2023): Associations between early family environment and ideal number of children. SocArXiv, 14 Apr. 2023. http://dx.doi.org/10.31235/osf.io/ea7rg

Keller, T. (2009): *Magyarország helye a világ értéktérképén*. Budapest: TÁRKI.

KINCS (2020): *Gyorselemzés a "családok és a környezetvédelem" című kutatás eredményeiről*.

Klobas, J. – Ajzen I. (2015): Making the decision to have a child. In Philipov, D. – Liefbroer, A. C. – Klobas, J. (eds.): *Reproductive decision-making in a macro-micro perspective*. Dordrecht: Springer, 41–78.

Korosteleva, O. (2019): *Advanced regression models with SAS and R*. Boca Raton: CRC Press.

Kotte, M, – Ludwig, V. (2011): Intergenerational transmission of fertility intentions and behaviour in Germany: The role of contagion. V*ienna Yearbook of Population Research*, 9, 207–226.

Lappegård, T. – Neyer, G. – Vignoli, D. (2021): Three dimensions of the relationship between gender role attitudes and fertility intentions. *Genus,* 77(15): 1–26. https://doi.org/10.1186/s41118-021-00126-6

Lesthaeghe, R. (2010): The unfolding story of the second demographic transition. *Population and Development Review*, 36(2): 211–251. https://doi.org/10.1111/j.17284457.2010.00328.x

Lesthaeghe, R. (2020): The second demographic transition, 1986–2020: Sub-replacement fertility and rising cohabitation – A global update. *Genus,* 76(10): 1–38. https://doi.org/10.1186/s41118-020-00077-4

Liefbroer, A. C. – Billari, F. C. (2010): Bringing norms back in: A theoretical and empirical discussion of their importance for understanding demographic behaviour. *Population, Space and Place*, 16(4): 287–305. https://doi.org/10.1002/psp.552

Liefbroer, A. C. – Dourleijn, E. (2006): Unmarried cohabitation and union stability: Testing the role of diffusion using data from 16 European countries. *Demography*, 43(2): 203–221. https://doi.org/10.1353/dem.2006.0018

Liefbroer, A. C. – Merz, E-M. – Testa, M. R. (2015): Fertility-related norms across Europe: A multi-level analysis. In Philipov, D. – Liefbroer, A. C. – Klobas, J. (eds.): *Reproductive decision-making in a macro-micro perspective*. Dordrecht: Springer, 141–165.

Liefbroer, A. C. (2009). Changes in family size intentions across young adulthood: A life-course perspective. *European Journal of Population*, 25(4): 363–386. https://doi.org/10.1007/s10680-008-9173-7

Lois, D. – Becker, O. (2014): Is fertility contagious? Using panel data to disentangle mechanisms of social network influences on fertility decisions. *Advances in Life Course Research*, 21: 123–134. https://doi.org/10.1016/j.alcr.2013.10.001

Luppi, F. – Arpino, B. – Rosina, A. (2020). The impact of COVID-19 on fertility plans in Italy, Germany, France, Spain and the United Kingdom. *Demographic Research,* 43(47): 1399–1412. https://doi.org/10.4054/DemRes.2020.43.47

Makay, Zs. – Murinkó, L. (2021). Válás, élettársi kapcsolatok felbomlása. In Monostori, J. – Őri, P. – Spéder, Zs. (eds.): *Demográfiai Portré 2021*. Budapest: KSH Népességtudományi Kutatóintézet, 29–45.

Makay, Zs. – Spéder, Zs. (2018): Apaság, a férfiak gyermekvállalása és családi szerepei. In Monostori, J. – Őri, P. – Spéder, Zs. (Eds.): *Demográfiai Portré 2018*. Budapest: Központi Statisztikai Hivatal Népességtudományi Kutatóintézet, 65–83.

Merz, E.-M. – Liefbroer, A. C. (2012): The attitude toward voluntary childlessness in Europe: Cultural and institutional explanations. *Journal of Marriage and Family*, 74(3): 587–600. https://doi.org/10.1111/j.1741-3737.2012.00972.x

Merz, E.-M. (2012): Fertility intentions depend on intergenerational relations: A life course perspective. *Family Science*, 3(3-4): 237–245. https://doi.org/10.1080/19424620.2013.789976

Miettinen, A. – Gietel-Bastern, S. – Rotkirch, A. (2011): Gender equality and fertility intentions revisited: Evidence from Finland. *Demographic Research*, 24(20): 469–496. https://dx.doi.org/10.4054/DemRes.2011.24.20

Miettinen, A. – Szalma, I. (2014): Childlessness intentions and ideals in Europe. *Finnish Yearbook of Population Research*, *49*, 31–55. https://doi.org/10.23979/fypr.48419

Modena, F. – Rondinelli, C. – Sabatini, F. (2013): Economic insecurity and fertility intentions: The case of Italy. *Review of Income and Wealth*, 60 (S1): S233–S255. https://doi.org/10.1111/roiw.12044

Mood, C. (2010): Logistic Regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review*, 26(1): 67–82. https://doi.org/10.1093/esr/jcp006

Morgan, S. P. – Rackin, H. (2010): The correspondence between fertility intentions and behavior in the United States. *Population and Development Review*, 36(1): 91–118. https://doi.org/10.1111/j.1728-4457.2010.00319.x

Murinkó, L. – Spéder, Zs. (2021). Párkapcsolatok, házasságkötés. . In Monostori, J. – Őri, P. – Spéder, Zs. (eds.): *Demográfiai Portré 2021*. Budapest: KSH Népességtudományi Kutatóintézet, 9–29.

Murinkó, L. (2014): A nemi szerepekkel és a családdal kapcsolatos attitűdök európai kitekintésben: Értékek és gyermekgondozás. *Szociológiai Szemle, 24*(1): 67–101.

Murinkó, L. (2019): A felnőtté válás életúttípusai, előzményei és kimenetei a 2000-es években Magyarországon. *Demográfia*¸ 62(2–3): 153–198. https://doi.org/10.21543/Dem.62.2–3.1

Nagy, E. – Pári, A. (2021): A tudatos gyermektelenség lehetséges okai egy kvalitatív felmérés alapján. *Kapocs*, 4(3-4): 98-105.

Novelli, M. – Cazzola, A. – Angeli, A. – Pasquini, L. (2021): Fertility intentions in times of rising economic uncertainty: Evidence from Italy from a gender perspective. *Social Indicators Research,* 154(1): 1–28. https://doi.org/10.1007/s11205-020-02554-x

Okun, B. S. – Raz-Yurovich, L. (2018): Housework, gender role attitudes, and couples' fertility intentions: Reconsidering men's roles in gender theories of family change. *Population and Development Review*, 45(1): 169–196. https://doi.org/10.1111/padr.12207

Őri, P. – Spéder, Zs. (2020): Folytonos átmenet: Magyarország népesedése 1920 és 2020 között. *Statisztikai Szemle*, 98(6): 481–521. https://doi.org/10.20311/stat2020.6.hu0481

Pápay, N. – Rigó, A. – Nagybányai Nagy, O. – Soltész, A. (2014): A gyermekvállalási attitűdök alakulásának pszichoszociális meghatározói = Psychosocial factors influencing the motivation for parenthood. *Mentálhigiéné és Pszichoszomatika*, 15 (1): pp. 1-30.

Philipov, D. – Spéder, Zs. – Billari, F. C. (2006): Soon, later, or ever? The impact of anomie and social capital on fertility intentions in Bulgaria (2002) and Hungary (2001). *Population Studies*, 60(3): 289–308. https://doi.org/10.1080/00324720600896080

Philipov, D. (2011): Theories on fertility intentions: A demographer's perspective. *Vienna Yearbook of Population Research,* 9: 37-45. https://doi.org/10.1553/population yearbook2011s37.

Pongráczné, T. - S. Molnár, E. (2011): Nemi szerepek és a közvélemény változásának kölcsönhatása. In Nagy, I. - Pongráczné, T. (Eds.): *Szerepváltozások: Jelentés a Nők és Férfiak Helyzetéről, 2011*. Budapest: TÁRKI, 192–206.

Quesnel-Vallée, A. – Morgan, S. P. (2003). Missing the target? Correspondence of fertility intentions and behavior in the U.S. *Population Research and Policy Review*, 22(5–6): 497–525. https://doi.org/10.1023/b:popu.0000021074.33415.c1

Ragadics, T. (2018): Marriage and cohabitation in recent Hungarian Society. *Nova prisutnost,* 16(1), 89–98. https://doi.org/10.31192/np.16.1.6

Schneider-Mayerson, M. (2022): The environmental politics of reproductive choices in the age of climate change. *Environmental Politics*, 31(1): 152–172. https://doi.org/10.1080/09644016.2021.1902700

Schoen, R. – Astone, N. M. – Kim, Y. J. – Nathanson, C. A. – Fields, J. M. (1999): Do fertility intentions affect fertility behavior? *Journal of Marriage and the Family*, 61(3): 790–799. https://doi.org/10.2307/353578

Sobotka, T. (2009): Sub-replacement fertility intentions in Austria / Intentions de fécondité inférieures au seuil de remplacement en Autriche. *European Journal of Population,* 25(4): 387–412. https://doi.org/10.1007/s10680-009-9183-0

Spéder, Zs. – Kapitány, B. (2007): *Gyermekek: Vágyak és tények. Dinamikus termékenységi elemzések.* Életünk fordulópontjai Műhelytanulamányok 6.

Spéder, Zs. – Kapitány, B. (2009): How are time-dependent childbearing intentions realized? Realization, postponement, abandonment, bringing forward. *European Journal of Population*, 25(4): 503–523. https://doi.org/10.1007/s10680-009-9189-7

Spéder, Zs. – Kapitány, B. (2015): Influences on the link between fertility intentions and behavioural outcomes. Lessons from a European comparative study. In Philipov, D. – Liefbroer, A. C. – Klobas, J. (eds.): *Reproductive decision-making in a macro-micro perspective*. Dordrecht: Springer, 79–112.

Spéder, Zs. (2011): Ellentmondó elvárások között… Családi férfiszerepek, apaképek a mai Magyarországon. In Nagy, I. - Pongrácz, T. (Eds.): *Szerepváltozások: Jelentés a Nők és Férfiak Helyzetéről, 2011*. Budapest: TÁRKI, 207-228.

Spéder, Zs. (2021): Termékenységi mintaváltás – a családalapítás átalakulásának demográfiai nyomvonalai Magyarországon. *Szociológiai Szemle*, 31(2): 4–29. https://doi.org/10.51624/SzocSzemle.2021.2.1

Szalma, I. – Takács, J. (2012): A gyermektelenséget meghatározó tényezők Magyarországon. *Demográfia*, 55(1): 44-68.

Szalma, I. – Takács, J. (2016) Gyermektelenség Magyarországon. Mítoszok és kutatási eredmények. *Magyar Tudomány*, 177(2): 159–167.

Testa, M. R. – Stephany, F. (2017): The educational gradient of fertility intentions: A meta-analysis of European studies. *Vienna Yearbook of Population Research,* 15: 1–38.

Testa, M. R. – Toulemon, L. (2006): Family formation in France: Individual preferences and subsequent outcomes. *Vienna Yearbook of Population Research*, 4: 41–75.

Testa, M. R. (2014): On the positive correlation between education and fertility intentions in Europe: Individual- and country-level evidence. *Advances in Life Course Research*, 21: 28–42. https://doi.org/10.1016/j.alcr.2014.01.005

Utasi, Á. (1996): Házasság és válás középosztályi identitással - praxisok és attitűdök. *Szociológiai Szemle,* 6(2): 57-70.

Veevers, J. E. (1980): *Childless by choice.* Toronto & Vancouver: Butterworth Co.

Veroszta Zs. – Györgyi Z. (2021): Képzési háttér és gyermekvállalási tervek. *Educatio*, 30(2): 184–205. https://doi.org/10.1556/2063.30.2021.2.2

Vignoli, D. – Minello, A. – Bazzani, G. – Matera, C. – Rapallini, C. (2022): Narratives of the future affect fertility: Evidence from a laboratory experiment. *European Journal of Population*, *38*(1): 93–124. https://doi.org/10.1007/s10680-021-09602-3

Waren, W. – Pals, H. (2013): Comparing characteristics of voluntarily childless men and women. *Journal of Population Research*, 30(2): 151–170. https://doi.org/10.1007/s12546-012-9103-8

# Appendix

**Table A1***: Sample selection*

| Reason for omission | Omitted N |
|---|---|
| Original sample | 8,000 |
| Not adult | 1,354 |
| Missing fertility intentions | 913 |
| Too high intention (4 or above) | 109 |
| Missing current number of children | 34 |
| Not childless | 1,021 |
| Not born in Hungary | 20 |
| Missing data on independent variables | 209 |
| Final sample size | 4,340 |

*Source: Magyar Ifjúság Kutatás 2020.*