Culture, uncertainty, and expected social support: a comprehensive perspective on what's behind young adults' fertility preferences.

Francesca Luppi Department of Statistical Sciences, Università Cattolica del Sacro Cuore (Milan, Italy; 20123); francesca.luppi1@unicatt.it

Andrea Bonanomi Department of Statistical Sciences, Università Cattolica del Sacro Cuore (Milan, Italy; 20123) andrea.bonanomi@unicatt.it

Alessandro Rosina Department of Statistical Sciences and Center for Applied Statistics in Business and Economics, Università Cattolica del Sacro Cuore (Milan, Italy; 20123) alessandro.rosina@unicatt.it

Abstract

High-income countries have been grappling with a declining fertility for decades, along with an increasing incidence of childlessness. This has raised questions about the factors behind these trends, which have been partially addressed by pointing to cultural, economic, and institutional explanations. Most of these mechanisms have been explored separately. What is still lacking is a comprehensive study that considers the potential joint impact of all these dimensions. In this study, we used unique survey data collected in 2022 on a representative sample of childless young adults (aged 25-34) living in France, Germany, Italy, Spain, and the UK. We construct an ideal continuum of combinations of fertility preferences, ranging from people who desire, intend, and are motivated to have children in life to childfree individuals. By running a stepwise multinomial logistic regression model, we show that while economic issues and family support are crucial for positive fertility intentions, especially among motivated people, general uncertainty and perceived low support from the welfare state and family are associated with higher likelihood of being on the other side of the continuum, i.e., being childfree or unmotivated and not intending. Finally, anticipated low support from the local community is detrimental to fertility motivation.

Keywords: fertility preferences, postmaterialism, social support, uncertainty

Introduction

Starting from the late 1960s, the fertility of European women has decreased due to a profound cultural shift that has multiplied opportunities and lifestyles of the younger generation. These changes have been effectively described within the framework of the Second Demographic Transition (Lesteaghe 1995, 2010, 2014). This theory relates the spread of postmaterialistic values in wealthy societies during the second half of the 20th century with the negative fertility trends observed in Western countries since the end of the 1960s. In a series of studies, Inglehart (1971, 1977, 1997) refers to postmaterialism as a shift in values from materialist concerns (such as economic stability and physical security) to post-materialist concerns (such as self-expression, gender equality, wellbeing, quality of life, freedom, and autonomy). Inglehart argues that as societies undergo economic development and people's basic material needs are met, there is a tendency for a shift in values toward greater emphasis on non-materialistic values.

In this framework, while the value of having children seems not have been diminished, it changed in its substance (Friedman et al. 1994). Traditional societies placed high values on childbearing as an unavoidable step of the ideal pattern of transition to adulthood. In contemporary times, having children, instead, is predominantly perceived as a choice and a mean to fulfil the emotional and relational needs of individuals and couples (Trommsdorff and Nauck, 2010; Nauck, 2014). Thus, under this perspective, part of the fertility gap - i.e., the distance between the realized fertility and the desired one - experienced in Western countries (Beaujouan and Berghammer 2019) can be explained by the fact that, for postmaterialistic people, childbearing is one among many conflicting life goals which are considered all relevant for the individual's self-realization and wellbeing (Van de Kaa 2001). In other words, when people perceive difficulties to reconcile childbearing with other relevant life spheres (e.g., work, leisure time, partnership etc.) this would hamper their wellbeing; thus, fertility decisions are postponed or even foregone.

As a result of this cultural revolution, the manner and especially the timing of forming a family have changed, shifting further into individual life stages. Consequently, the average age at which individuals have their first child has increased. At a micro-level perspective, delaying the decision to have the first child has reduced the possibility of having additional children, while an increasing share of women were unable to have even the first child. At the macro level, the postponement effect has, in turn, led to a temporary decline in the period fertility rate; meanwhile, also the share of childless women has increased for the cohorts of women who enter their fertile periods in those years (Sobotka 2004, 2017).

In the early 2000s, many European countries experienced a recovery in fertility that had been lacking in the preceding decades. However, this recovery was only partial and came to a halt - indefinitely, for the time being - with the onset of the Great Recession (Comolli 2017). Since then, alongside cultural factors, the negative impact of economic uncertainty on young Millennials' life plans in those years began to be considered as the main driver of the fertility postponement (and low period-fertility). In addition to the labour market flexibilization initiated through the reforms of the 1990s, the subsequent recessions further destabilized the employment prospects of those who entered the job market for the first time during that period, often securing precarious and low-paying positions (Alderotti 2021).

While the role of economic and employment uncertainty has been supported by various studies (e.g., Vignoli et al. 2020), it is also true that this alone is not sufficient to provide a universal explanation for the decline in fertility that has been occurring in all European countries for almost 15 years now. Moreover, the increased sense of uncertainty may be linked– at least partially - to the "individualization process" as described by the Second Demographic Transition, and the loss of the imposing – but also reassuring – traditional social norms, roles, and expectations, which so strictly guided individuals towards life transitions in the past. The Covid pandemic, the war in Ukraine, as well as the unpredictable consequences of climate change, might have contributed to fuelling the perception of losing traditional reference points.

At the same time, the role of institutions in supporting fertility has proven to be crucial. The welfare system can affect fertility behaviours (e.g., Wesolowski and Ferrarini 2018; Bergsvik et al. 2021). This because family policies can provide resources and remove obstacles to the realization of fertility preferences, reducing the cost of childbearing and enhancing the work-family balance. This effect has been disentangled at national and sub-regional level. For example, a wider availability of childcare services is associated with higher fertility level, with evidence even at the municipality level (Baizán 2009; Del Boca 2002; Hank and Kreyenfeld 2003).

When exploring the relationship between welfare provisions and fertility, the support provided by the welfare system is usually measured through the share of people that can access certain services or policy measures (e.g. Harknett et al. 2014). However, also the perception and the expectation about the accessibility and the quality of the welfare support matter. In societies where institutions are perceived as stable, reliable, and supportive, people may feel more confident in their ability to provide support for their families and raising children. On the contrary, in societies where institutions are plagued by corruption, instability, or a lack of social support, individuals may be hesitant to have children, fearing an uncertain future for their offspring (Lestaeghe and Surkyn, 1988). Additionally, the provision of services is territorially fragmented, not only across but also

within regions, with most of the service hubs located in the medium and large cities, and less in the rural and peripherical areas. The individual's experience and the perceived accessibility and quality of the local provision should be considered as potential driver of fertility decisions.

Next to providing different configurations of institutional resources, the local community represents the framework for the daily social interactions (the so-called "meso-level"). Local communities can be supportive both directly, such as providing services and a family-friendly environment (Bergsvik et al. 2023), and indirectly, through shared positive narratives on parental experience. They provide social norms, social representations, and social capital about childbearing that – together with individual's characteristics (micro level) and contextual features (macro level) – can influence fertility behaviours (Billy and Moore 1992). The day-to-day interaction is the basis on which this knowledge is shared among community members (Watkins 1990). People living in the same neighbour may be part of the same networks, and the fact that they exchange resources, perceptions, and representations of what a life with children is, potentially impacts on their fertility preferences (Bernardi and Klarner, 2014; Lois & Becker, 2014). Additionally, recent qualitative studies have shown that the expectation of not receiving support from the society is a frequently recalled precondition for not planning a child (es. Rotkirch 2020).

Apart from the local community, the exchange of support usually happens within the family border. The relevance of family support depends on the strength of the ties and the proximity between family members (and between parents and children especially), which vary across European countries and cultures (Dalla Zuanna 2004). Where family ties are central to societal functioning (such as in Southern European countries), individuals have stronger expectations of receiving helps from the extended family; lacking such support can represent an additional source of individual's perceived uncertainty in times of crisis. However, the link between strong and weak family ties and fertility remains quite ambiguous (Livi-Bacci 2001; Dalla Zuanna and Micheli 2004).

Data

This study moves from this framework to disentangle the role that each of the abovementioned factors (i.e., post-materialistic values, expected social support, economic and general uncertainty) might play in shaping fertility preferences among young adults in Europe. We used unique data from the Rapporto Giovani survey, conducted in June 2022 on a sample of 6000 European young adults, aged 18 to 34 (2000 respondents in Italy, 1000 respondents in each of the following countries: France, Germany, Spain, and UK). We specifically consider childless individuals aged 25 to 34 (2482 observations): this allows us to focus on those who are in the typical ages for having children but are still at risk of not having them. Additionally, because childless individuals did not

experience a childbirth yet, their perception of uncertainty and expected external supports is net of the childbearing experience.

Fertility preferences available in the survey are the number of desired children in life, motivation to have children in life, and short-term fertility intentions (i.e., intention to conceive within 3 years) (Appendix-A). Instead of using single measures to detect individual fertility preferences, we opted for combinations of them. Taken alone, both fertility desires and intentions have limits: answers on fertility desires are at risk to be strongly driven by social norms; fertility intentions are more informative of the effect of the situational features than of the actual desire to have children in life (e.g., pressure from the partner; lack of economic resources); both these indicators are not able to detect the individual's motivation to childbearing (Bachrach and Morgan 2013; Ajzen and Klobas 2013). The value provided to childbearing, instead, is strongly related also to intrinsic motivation, i.e. the concept of "self-realization" (e.g., Waterman et al. 2003; Simms 2008). Feeling self-realized is associated with perceiving to live a meaningful and fulfilling life (e.g., Baumann and Ruch 2022). Thus, it is crucial to explore the potential effect of postmaterialistic values. To measure intrinsic motivation to have children we rely on a proxy based on a question asking whether having children is a prerequisite to feel self-fulfilled in life (for an in-depth discussion see Luppi et al. 2024). The interpretation of our measure as a proxy of motivation is consistent with the psychological literature on intrinsic motivation (e.g., Ryan & Deci 2000; Waterman et al. 2003).

About the construction of the dependent variable (more details in the Appendix-A), we distinguished between five categories: [a] childfree individuals (which do not desire and intend to have children in life); among those desiring children, we further distinguish [b] those who are not motivate and not intending to have children; [c] those who are not motivated but intending to have children; [d] those who are motivated but not intending, and finally [e] those who are both motivated and intending. There are few cases (about 70) of people not desiring children while declaring to be motivated and/or intending to have a child: we decided to discard them. Additionally, to measure post-materialistic values, we rely on the Inglehart's scale based on 12 items as reported in the European Values Study (Inglehart & Abramson 1999; Davis et al 1999) (Appendix-B). About uncertainty, next to a question on the general perceived uncertainty in life, the survey provides information on the perceived economic and employment uncertainty, plus more objective indicators on the employment and financial conditions of the respondents (Appendix-B). Finally, individuals answer to questions on their expectations that – in case of childbearing – they will be adequately supported by a set of institutions and social actors: the welfare state, their own family, and the local community (Appendix-B).

Method

A stepwise multinomial regression model was conducted to assess the relative relevance of each factor behind different combinations of fertility preferences. Because of the reduced sample size, we aggregated samples from five countries. Control variables were fixed in the model and were not subject to stepwise selection: along with the country of residence, all the common socio-demographic controls (i.e., age, gender, education, employment status, partnership status, income deciles) were included (Appendix-C). Dummy variables related to uncertainty were estimated using a stepwise estimation method determined by the likelihood ratio, with a probability of entry set at 0.05 and a removal probability set at 0.1. All main effects were tested. Differences between countries and genders were tested but did not emerge as significant.

Results

In our sample (2482 observations), 21.6% are *Childfree*, 15.3% are *Not motivated and not intending to have a child*, 7.2% are *Not motivated but intending*, 25.7% are *Motivated but not intending*, and 30.3% are *Motivated and intending*. The distribution of all the other covariates and control variables are reported in the Appendix-C, Table 1A.

In Figure 1 we report the predicted probabilities of belonging to each combination of fertility preferences, based on the perceived uncertainty about the future in general, the expected income trend, the expected support from the welfare state, the local community, and the family, and by level of postmaterialism, as derived from the stepwise multinomial logistic regression model. The covariate measuring the uncertainty about the employment condition does not enter the final model as it never comes out as significant (full model in Appendix-D, Table 2A). To simplify the overall interpretation of the results, Table 1 summarizes the presence of positive or negative associations between the explanatory variables and the combinations of fertility preferences.

Figure 1. Probabilities of observing different combinations of fertility preferences based on the expected income trend, general uncertainty about the future, support from the welfare state, the local community and the family, and the individual level of postmaterialism.



Note: Predicted probabilities from stepwise multinomial logistic regression model, controlling for gender, age, holding a tertiary degree, employment status, income level, partnership status, and country of residence. Confidence intervals at 5%.



		Desiring children		Not desiring children	
	Moti	vated	Not mo	otivated	
	Intending	Not intending	Intending	Not intending	Childfree
Expected income increase		-	+		-
Uncertainty about future		-	-	+	+
Low support Welfare state		+			+
Low support Local community		-	+	+	
Low support Family		+	-	-	+
Postmaterialism					+

Upon initial observation, the probabilities of falling into the two extreme categories - namely, those who are *Motivated and intending* to have children versus individuals opting to remain *Childfree* - are consistently associated in opposing directions across most the aforementioned factors. This implies a deleterious impact of the explanatory variables on intentions, motivations, and desires, except for the expected income increase which association – understandably – goes in the opposite direction. The intermediate combinations of preferences (i.e., Motivated but not intending; Not motivating but intending; Not motivated and not intending) exhibit varied patterns of associations, with the *Not*

motivated and not intending that mirrors the results for the *Childfree*, and the *Motivated but not intending* people which shows similar associations with the *Motivated and intending*.

Regarding the uncertainty variables, the general uncertainty about the future diminishes the likelihood of being *Motivated and intending* to have a child (-8pp), that of being *Motivated and not intending* (-6pp) and of being *Not motivated but intending* (-4pp). It increases, instead, the probability of being *Not motivated and not intending* (+8pp) and the likelihood of being *Childfree* (+2pp). After controlling for the income level, the expected income reduction does not change the probability of observing any of the fertility preferences combinations when compared to the fact of not expecting any income change. Instead, an anticipated income increase reduces the chance of being *Childfree* (-4pp) and *Motivated but not intending* (-5pp), while increases the likelihood of being *Motivated and intending* (+6pp) and *Not motivated but intending* (+2pp).

About the expected social support, results suggest a negative impact of the anticipated low support from the local community on fertility motivation. In fact, it reduces the probability of being *Motivated* to have a child, regardless the fact of *intending* (-6pp) or *not intending* (-3pp); meanwhile, it increases the likelihood of being *Not motivated* either *intending* (+2p) or *not intending* (+5pp). An additional remark can be done on the effect of the low expected support from the family of origins and the welfare state. Among motivated people, results suggest a negative association with intentions, by increasing the likelihood of being *Motivated but not intending* (respectively +3pp for family support and +5pp for welfare state support) and reducing that of being *Motivated and intending* (- 2pp for family and -8pp for welfare state has a negative association with desires. This is evidenced by an increased probability of being *Childfree* (+5pp for family support and +3pp for welfare state support), and a decreased likelihood of being *Not motivated*, regardless of *intending* (-3pp only for family support).

Finally, adopting a more postmaterialistic mindset amplifies the probability of choosing a *Childfree* lifestyle by approximately 12pp across the range of the postmaterialism index, while diminishing the likelihood of being *Motivated and intending* to have children by 15pp. No evident association has been identified between the intermediate categories and the level of postmaterialism.

Discussion

The underlying reasons behind the recent declining fertility trends and the increasing prevalence of childlessness in Western societies are not completely understood. What is particularly puzzling is that, despite the enduring high value individuals place on parenthood (Aassve et al. 2024), a noticeable decline in fertility, coupled with an increase in childlessness, has been observed across

nearly all European countries in the last few decades (Brini 2020). This trend has occurred across countries with diverse labour market dynamics, economic performances, family policies, and gender norms. Consequently, social scientists are striving to identify a combination of factors that may collectively contribute to this phenomenon.

This study represents an original effort within this debate. It provides a comprehensive outlook on the potential roles of various factors as determinants of low-fertility preferences, which have, up to now, been examined individually. Furthermore, in assessing their impact on fertility preferences, we do not rely on singular indicators but instead opt for an examination of combinations of fertility intentions, desires, and motivations. This methodological approach enables us to partially mitigate the interpretative constraints associated with the use of single indicators (Luppi et al. 2024), while also shedding new light on the continuum from strongly pro-childbearing preferences - characterized by individuals desiring, intending, and feeling motivated to have children - to childfree preferences.

We generally found that all cultural, uncertainty, and perceived social support factors contribute to describing the antecedents of fertility preferences. This suggests that the reasons behind low fertility behaviours are complex and involve all the macro, meso, and micro preconditions. We also found that different combinations of intentions, motivations, and desires are meaningfully related to different sets of antecedents. This result sheds new light on how we interpret traditional indicators of fertility preferences (i.e., intentions and desires) and strongly supports our claim about the need to expand this set of indicators by including a measure of fertility motivation.

Regarding the cultural driver, postmaterialistic values appear to only discern differences between the two extremes of the continuum, rather than with the general lack of motivation to have children. This finding reinforces the interpretation that expressing a desire for children is influenced, at least partially, by an internalized adherence to traditional social norms. It further suggests that individuals who embrace postmaterialistic values - those who feel free to deviate from tradition - are more likely to explicitly state a lack of desire for children in their lives. However, being childfree does not necessarily imply that individuals choose not to have children simply due to a lack of interest in parenthood. On the contrary, the likelihood of being childfree is higher among those who report higher uncertainty and low expected social and family support. This suggests that, for at least some individuals, adopting the childfree lifestyle is a result of adapting to conditions that make it difficult to formulate plans for childbearing.

Regarding the uncertainty issue, perceived economic instability and general uncertainty are negatively associated particularly with fertility intentions. This suggests a more "practical" negative

impact on how individuals cope with the risks associated with the long-term investment that childbearing entails.

Finally, regarding the anticipated social support, two main observations can be made. On one hand, akin to the findings on uncertainty, not expecting support from one's family of origin and the welfare state appears to present a practical obstacle to positive intentions regarding childbearing. On the other hand, anticipated support from the local community appears to influence individual motivations for childbearing. This raises two considerations. Firstly, in line with other studies (e.g., Rotkirch 2020), the expectation of receiving social support – not solely from one's family of origin – is significant for fertility preferences, operating at both macro- and meso-levels. This implies that responsibility for this support lies not only with the welfare state but also with the local community, both of which are crucial for decisions regarding childbearing. Furthermore, the absence of support from the local community appears to have a deeper impact on shaping fertility preferences: it seems to affect not only intentions but also the motivation level. The implication may be significant. Since motivation is closely tied to an individual's self-representation, all factors that potentially diminish the motivation for becoming a parent also impact how the individuals see themselves, and consequently, how they define their life priorities. In other words, if society does not provide supporting community network in raising its children, this devalues parenthood as a life goal and discourages young adults from envisioning themselves as parents in the future.

At the same time, it opens opportunities for policy measures. In times of challenges in sustaining financially robust welfare systems, the mobilization of local communities can serve as a significant source of well-being for young adults considering parenthood. This does not mean that we can disinvest in family measures – which instead is clearly indicated as an important source of expected support – but that providing community support network and a family-friendly environment can be a strong resource on which local stakeholders can invest to sustain fertility.

Further research in this realm should leverage longitudinal data or experimental designs to ascertain whether the associations we have identified constitute evidence of potential mechanisms underlying low fertility behaviours. Additionally, future endeavours should strive to incorporate, within major social surveys, a validated standard indicator for assessing fertility motivation alongside the more commonly utilized indicators of fertility preferences, such as intentions and desires. The issue at hand extends beyond merely determining whether parenthood is still ideally valued: we should explore deeper whether it represents an important milestone to reach fulfilling life for recent young cohorts. We should ask what is leading low fertility motivation, whether its incidence is increasing over time, and, in case, how this can result in an indefinitely postponing of fertility plans.

References

- 1. Aassve, A., Adserà, A., Chang, P. Y., Mencarini, L., Park, H., Peng, C., ... & Jean Yeung, W. J. (2024). Family ideals in an era of low fertility. *Proceedings of the National Academy of Sciences*, *121*(6), e2311847121.
- 2. Ajzen, I., & Klobas, J. (2013). Fertility intentions: An approach based on the theory of planned behavior. Demographic research, 29, 203-232.
- 3. Alderotti, G., Vignoli, D., Baccini, M., & Matysiak, A. (2021). Employment instability and fertility in Europe: A meta-analysis. *Demography*, 58(3), 871-900.
- 4. Bachrach, C. A., & Morgan, S. P. (2013). A cognitive–social model of fertility intentions. Population and development review, 39(3), 459-485.
- 5. Baizán, P. (2009). Regional child-care availability and fertility decisions in Spain. *Demographic research*, *21*, 803-842.
- 6. Baumann, D., & Ruch, W. (2022). What constitutes a fulfilled life? A mixed methods study on lay perspectives across the lifespan. Frontiers in Psychology, 13, 982782.
- 7. Bergsvik, J., Fauske, A., & Hart, R. K. (2021). Can policies stall the fertility fall? A systematic review of the (quasi-) experimental literature. *Population and Development Review*, 47(4), 913-964.
- 8. Bergsvik, J., Cools, S., & Hart, R. K. (2023). Explaining Residential Clustering of Large Families. *European Journal of Population*, 39(1), 13.
- 9. 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*, 507-535.
- 10. Bernardi, L., & Klärner, A. (2014). Social networks and fertility. Demographic Research, 30, 641-669.
- 11. Billy, J.O. and D.E. Moore. 1992. "A multilevel analysis of marital and nonmarital fertility in the US." Social Forces 70(4):977-1011
- 12. Brini, E. (2020). Childlessness and low fertility in context: Evidence from a multilevel analysis on 20 European countries. *Genus*, 76, 1-38.
- 13. Comolli, C. L. (2017). The fertility response to the Great Recession in Europe and the United States: Structural economic conditions and perceived economic uncertainty. *Demographic research*, *36*, 1549-1600.
- 14. Dalla Zuanna, G. (2004). Few children in strong families. Values and low fertility in Italy. Genus, 39-70.
- 15. Dalla Zuanna, G., & Micheli, G. A. (Eds.). (2004). *Strong family and low fertility: a paradox?: new perspectives in interpreting contemporary family and reproductive behaviour* (Vol. 14). Springer Science & Business Media.
- 16. Davis, D. W., Dowley, K. M., & Silver, B. D. (1999). Postmaterialism in world societies: Is it really a value dimension?. American Journal of Political Science, 935-962.
- 17. Del Boca, D. 2002. "The effect of child-care and part time opportunities on participation and fertility decisions in Italy." Journal of Population Economics 15(3):549-573
- Friedman, D., Hechter, M., & Kanazawa, S. (1994). A theory of the value of children. Demography, 31, 375-401.
- 19. Hank, K. and M. Kreyenfeld. 2003. "A multilevel analysis of child-care and women's fertility decisions in Western Germany." Journal of Marriage and Family 65(3):584-596.
- 20. Harknett, K., Billari, F. C., & Medalia, C. (2014). Do family support environments influence fertility? Evidence from 20 European countries. *European Journal of Population*, *30*, 1-33.
- 21. Inglehart, R. (1971). The silent revolution in Europe: Intergenerational change in post-industrial societies. American political science review, 65(4), 991-1017.
- 22. Inglehart, R. (1977). The silent revolution. Changing values and political styles among Western publics. Princeton, NJ: Princeton University Press
- 23. Inglehart, R. (1997). Modernization, postmodernization and changing perceptions of risk. International Review of Sociology, 7(3), 449-459.
- 24. Inglehart, R., & Abramson, P. R. (1999). Measuring postmaterialism. *American Political Science Review*, 93(3), 665-677.
- 25. Lesthaeghe, R. (1995). The second demographic transition in Western countries: An interpretation. *Gender* and family change in industrialized countries, 17-62.
- 26. Lesthaeghe, R. (2010). The unfolding story of the second demographic transition. *Population and development review*, *36*(2), 211-251.
- 27. Lesthaeghe, R. (2014). The second demographic transition: A concise overview of its development. *Proceedings* of the National Academy of Sciences, 111(51), 18112-18115.
- 28. Lesthaeghe, R., & Surkyn, J. (1988). Cultural dynamics and economic theories of fertility change. *Population and development review*, 1-45.
- 29. Livi-Bacci, M. 2001. Too few children and too much family, Daedalus, Demographic Research 130(3): 139– 155
- 30. Lois, D., & Becker, O. A. (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.

- Luppi, F., Rosina, A., & Testa, M. R. (2024, February 21). An Overview on Low Fertility Motivations among Italian Young-Adults. <u>https://doi.org/10.31235/osf.io/hf78t</u>
- 32. Nauck, B. (2014). Value of children and the social production of welfare. Demographic Research, 30, 1793-1824.
- 33. Rotkirch, A. (2020). The wish for a child. Vienna Yearbook of Population Research, 18, 49-62.
- 34. Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemporary educational psychology, 25(1), 54-67.
- 35. Simms, M. (2008). Self-realization. In R. W. Kolb (Ed.), Encyclopedia of business ethics and society. SAGE Publications; pp. 1885–1888.
- 36. Sobotka, T. (2004). Is lowest-low fertility in Europe explained by the postponement of childbearing?. *Population and* development review, 30(2), 195-220.
- 37. Sobotka, T. (2017). Post-transitional fertility: the role of childbearing postponement in fuelling the shift to low and unstable fertility levels. Journal of biosocial science, 49(S1), S20-S45.
- 38. Trommsdorff, G., & Nauck, B. (2010). Introduction to special section for Journal of Cross-Cultural Psychology: Value of children: A concept for better understanding cross-cultural variations in fertility behavior and intergenerational relationships. Journal of Cross-Cultural Psychology, 41(5-6), 637-651.
- 39. Van de Kaa D. (2001), "Postmodern fertility preferences: From changing value orientation to new behaviour", in BULATAO R., CASTERLINE J. (eds.), Global Fertility Transition, Population and Development Review Supplement to Volume 27, The Population Council, USA.
- 40. Vignoli, D., Guetto, R., Bazzani, G., Pirani, E., & Minello, A. (2020). A reflection on economic uncertainty and fertility in Europe: The narrative framework. *Genus*, 76(1), 1-27.
- 41. Waterman, A. S., Schwartz, S. J., Goldbacher, E., Green, H., Miller, C., & Philip, S. (2003). Predicting the subjective experience of intrinsic motivation: The roles of self-determination, the balance of challenges and skills, and self-realization values. Personality and Social Psychology Bulletin, 29(11), 1447-1458.
- 42. Watkins, S.C. 1990. "From local to national communities: The transformation of demographic regimes in Western Europe, 1870-1960." Population and Development Review:241-272
- 43. Wesolowski, K., & Ferrarini, T. (2018). Family policies and fertility: Examining the link between family policy institutions and fertility rates in 33 countries 1995-2011. *International Journal of Sociology and Social Policy*.

Appendix

A. Dependent variable: original questions and operationalization of the combinations of fertility preferences

The dependent variable is the result of combinations of different fertility preferences, namely fertility desires, motivation and intentions, into five categories. Here below we reported the original questions on the three preferences and the operationalization of the dependent variable. *Fertility intentions (3 years)*

In the next 3 years, do you intend to have another child?

- 1. Certainly not
- 2. Probably not
- 3. Probably yes
- 4. Certainly yes

Fertility desires

If you had no constraints or impediments of any kind, how many children would you want to have in total? Please indicate the number.

Fertility motivation (proxy)

With which of the following statements do you identify the most?

- 1. I think I would feel that I have had a full and fulfilling life even without children.
- 2. I think I would feel that I have had a full and fulfilling life even with just one child.
- 3. I think I would feel that I have had a full and fulfilling life stopping at two children.
- 4. I think I would feel that I have had a full and fulfilling life with a large family (at least three children)

The *dependent variable* is a categorical variable including five categories each of which represents a different combination of the abovementioned fertility preferences. The categories are defined and labeled as follow:

- a. *Childfree* definition derived by the following combination: fertility desire = 0 (desire for 0 children); fertility motivation = option [1]; fertility intention = option [1] or [2]
- b. *Not motivated and not intending* definition derived by the following combination: fertility desire = 1+ (desire at least one child); fertility motivation = option [1]; fertility intention = option [1] or [2]
- c. *Not motivated but intending* definition derived by the following combination: fertility desire = 1+ (desire at least one child); fertility motivation = option [1]; fertility intention = option [3] or [4]
- d. *Motivated but not intending* definition derived by the following combination: fertility desire = 1+ (desire at least one child); fertility motivation = option [2], [3] or [4]; fertility intention = option [1] or [2]
- e. *Motivated and intending* definition derived by the following combination: fertility desire = 1+ (desire at least one child); fertility motivation = option [2], [3] or [4]; fertility intention = option [3] or [4]

B. Main covariates: original questions and variable operationalization

Inglehart postmaterialistic scale

The index is derived by combining answers from the following questions:

"There is a lot of talk these days about what this country's goals should be for the next ten or fifteen years. On this card are listed some of the goals that different people say should be given top priority. Would you please say which of them you yourself consider to be most important in the long run? And what would be your second choice?" Possible answers:

- 1. Maintaining order in the nation;
- 2. Giving people more say in important government decisions;
- 3. Fighting rising prices;
- 4. Protecting freedom of speech.

"Now, would you please say which of them you yourself consider to be most important in the long run? And what would be your second choice?" Possible answers:

- 1. Maintaining a high level of economic growth;
- 2. Making sure that this country has strong defense forces;
- 3. Seeing that people have more say about how things are done at their jobs and in their communities;
- 4. Trying to make our cities and countryside more beautiful.

"Now, would you please say which of them you yourself consider to be most important in the long run? And what would be your second choice?" Possible answers:

- 1. A stable economy;
- 2. Progress towards a less impersonal and more humane society;
- 3. Progress towards a society in which ideas count more than money;
- 4. The fight against crime.

The items scores are combined into a continuous index by applying the same procedure as in Davis et al. (1999).

Economic Uncertainty

What do you think it is going to happen to your income in the next 12 months? Possible answers:

- 1. It is going to decrease a lot
- 2. It is going to decrease a bit
- 3. It will be the same
- 4. It is going to increase a bit
- 5. It is going to increase a lot

Occupational uncertainty

What do you think it is going to happen to your employment condition in the next 12 months? Possible answers:

- 1. I'm going to find a (new) occupation
- 2. I will be employed in the same occupation
- 3. I will be unemployed (looking for a job)
- 4. I will be studying (full time)
- 5. I will not be working, studying, or looking for a job

General uncertainty

How much do you agree with the following sentence: "I think my future is full of risk and uncertainties". Possible answers:

- 1. I totally disagree
- 2. I partially disagree
- 3. I partially agree
- 4. I totally agree

Expectations about social support in case of childbirth

If you are going to have a child (another child), how much could you rely on support from:

- a. the State (Welfare State);
- b. the family of origin;
- c. the community in which you live.

Possible answers:

- 1. A lot
- 2. Enough
- 3. Little
- 4. Not at all

C. Control variables

Gender: it is a dummy variable, contrasting women and men.

Age class: in two classes based on the quota definition as followed for the sampling strategy -i.e. 25-29 and 30-34.

Education: it is a dummy variable, contrasting those holding a tertiary degree with all the others educational degree.

Employment status: it is a categorical variable with seven categories: no studying no working; studying full-time; manager or professional; other self-employed; employee – permanent contract; employee - fixed-term contract; project-based & casual work.

Individual income: in deciles.

In stable partnership: it is a dummy variable derived from the question "Are you currently in a stable relationship with a partner? 1. Yes; 2. No".

Country: it is a categorical variable including the five possible respondent's country of residence – i.e., Italy, France, Germany, Spain and UK.

Table 1A – Distribution of the dependent varial	e, the main covariates, and the control	variables (weighted frequencies)
---	---	----------------------------------

	n	%
Fertility preferences		
Childfree	535	21.55
Not motivated and not intending	379	15.29
Not motivated but intending	178	7.18
Motivated but not intentending	637	25.67
Motivated and intending	752	30.31
Gender		
Men	1263	50.87
Women	1219	49.13
Education		
No tertiary degree	1619	65.23

Tertiary degree	863	34.77
Country		
Italy	899	36.21
Uk	362	14.6
Germany	403	16.23
France	358	14.42
Spain	460	18.53
Age class		
25-29	1284	51.73
30-34	1198	48.27
Employment condition		
Not studying not working	590	23.77
Studying	362	14.59
Manager or professional	111	4.48
Other self-employed	71	2.86
Employee - permanent contract	972	39.16
Employee - fixed-term contract	298	12
Project-based & casual work	78	3.15
Partnership		
Without stable partner	1033	41.63
With stable partner	1449	58.37
Social support		
Expected support from the welfare state	671	27.03
No expected support from the welfare state	1811	72.97
Expected support from the local community	738	29.75
No expected support from the local community	1744	70.25
Expected support from the family	1778	71.63
No expected support from the family	704	28.37
Uncertainty		
Income decrease in the next 12 months	516	20.8
Income stable in the next 12 months	1275	51.38
Income increase in the next 12 months	691	27.83
Perceived future not full of risks	1963	79.08
Perceived future full of risks	519	20.92
Postmaterialism index	7.0	
Income (deciles)	3.1	

D. Full model

Table 2A - Results from the stepwise multinomial logistic regression model on the five combinations of fertility preferences, pooled sample (N: 2482)

	Coefficient	p-value
Motivated and intending	(base out	come)
Childfree		
Woman	0.056	0.669
Tertiary degree	0.101	0.473

Country (ref: Spain)		
Italy	0.0251	0.892
Uk	0.661	0.004
Germany	1.236	0
France	0.0266	0.907
Age class (ref: 30-34)		
25-29	-0.215	0.095
Employment status (ref: permanent employee)		
no studying no working	-0.046	0.876
studying	-0.639	0.052
manager or professional	-0.081	0.785
other self-employed	-0.146	0.696
employee - fixed-term contract	0.161	0.432
project-based & casual work	0.008	0.982
In stable partnership	-1.174	0
Income (deciles)	-0.165	0
Low support Welfare state	0.457	0.005
Low support Local community	0.297	0.056
Low support Family	0.354	0.014
Expected income (ref: income increase)		
decrease	0.361	0.064
stable	0.412	0.008
Future at risk	0.487	0.002
Postmaterialism (index)	-0.5	0.01
Postmaterialism (index): quadratic	0.042	0.002
Constant	1.478	0.056
Not motivated and not intending		
Woman	-0.282	0.05
Tertiary degree	-0.07	0.648
Country (ref: Spain)		
Italy	-0.232	0.215
Uk	0.204	0.41
Germany	-0.29	0.312
France	-0.644	0.01
Age class (ref: 30-34)		
25-29	0.043	0.76
Employment status (ref: permanent employee)		
no studying no working	0.418	0.205

studying	0.138	0.69
manager or professional	0.209	0.51
other self-employed	0.043	0.917
employee - fixed-term contract	0.605	0.007
project-based & casual work	0.624	0.08
In stable partnership	-0.917	0
Income (deciles)	-0.053	0.295
Low support Welfare state	0.255	0.167
Low support Local community	0.635	0.001
Low support Family	-0.207	0.205
Expected income (ref: income increase)		
decrease	0.126	0.545
stable	0.131	0.422
Future at risk	0.602	0
Postmaterialism (index)	-0.554	0.007
Postmaterialism (index): quadratic	0.042	0.003
Constant	1.014	0.206
Not motivated but intending		
Woman	0.369	0.059
Tertiary degree	-0.342	0.069
Country (ref: Spain)		
Italy	-0.097	0.675
Uk	-0.211	0.478
Germany	-0.786	0.045
France	-0.382	0.173
Age class (ref: 30-34)		
25-29	-0.111	0.535
Employment status (ref: permanent employee))	
no studying no working	0.662	0.13
studying	0.554	0.234
manager or professional	0.059	0.879
other self-employed	0.674	0.121
employee - fixed-term contract	0.092	0.734
project-based & casual work	-0.871	0.264
In stable partnership	0.199	0.37
Income (deciles)	0.101	0.122
Low support Welfare state	0.116	0.638

Low support Family	-0.416	0.069
Expected income (ref: income increase)		
decrease	0.158	0.534
stable	-0.193	0.327
Future at risk	-0.388	0.152
Postmaterialism (index)	-0.092	0.722
Postmaterialism (index): quadratic	0.014	0.419
Constant	-2.303	0.031
Motivated but not intending		
Woman	-0.623	0
Tertiary degree	0.105	0.422
Country (ref: Spain)		
Italy	-0.13	0.457
Uk	0.236	0.302
Germany	0.95	0
France	0.02	0.921
Age class (ref: 30-34)		
25-29	0.382	0.002
Employment status (ref: permanent employee)		
no studying no working	0.023	0.936
studying	0.224	0.46
manager or professional	0.014	0.959
other self-employed	0.48	0.138
employee - fixed-term contract	0.417	0.033
project-based & casual work	0.512	0.13
In stable partnership	-0.702	0
Income (deciles)	-0.142	0.002
Low support Welfare state	0.421	0.008
Low support Local community	0.047	0.753
Low support Family	0.265	0.057
Expected income (ref: income increase)		
decrease	0.583	0.001
stable	0.479	0.001
Future at risk	-0.008	0.961
Postmaterialism (index)	-0.191	0.309
Postmaterialism (index) Postmaterialism (index): quadratic	-0.191 0.016	0.309 0.203

References

Davis, D. W., Dowley, K. M., & Silver, B. D. (1999). Postmaterialism in world societies: Is it really a value dimension?. *American Journal of Political Science*, 935-962.