Short-term and family size intentions and fertility outcomes in European comparison

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(Extended abstract, incomplete draft, language check will follow!)

Our research aims to understand the role of short-term and family size intention in the fertility decision making process. Research on fertility intentions and realisation is abundant. We know a lot about individual determinants of realisation, but much less on country specific differences. The current research, employing a comparative approach, aims to reveal country level determinants, and country specific influences. Country level determinants are unrevealed by analysing realisation of short-term fertility intentions in 11 GGS countries.. Considering family size intentions, a decade long change of fertile population is traced in Hungary and France, and a grouping based on family size intention and realization is carried out. More closely, a differentiation among achievers, under- and overachievers are defined, and possible factors predicting group memberships are considered.

The Measurement of Fertility Intentions and Outcomes

Opinions in the literature differ regarding the predictive value and strength of influence of intentions on fertility behaviour. Studies highlighting the importance of fertility intentions conclude that the explanatory power of intentions is exceptionally high and intentions are independent, not only mediating factors of fertility behaviour (Schoen et al. 1999; Berrington, 2004). (Beaujoaun, Berghammer 2019) However, critical approaches stress that intentions alone have no or hardly any determining role on fertility behaviors; they are more properly seen as mediators (Westoff and Ryder, 1977, Toulemon, Testa 2005). Findings that indicate a high share of over- and underachievement of fertility intentions (Quesnel-Vallée and Morgan, 2003), or of the instability of intentions may also be construed as indirect support for the negligible or minor role of intentions. Therefore, it is difficult to formulate an indisputable position on the role of intentions in fertility processes, especially as the statements above refer to different kinds of intentions – not to mention that they measure intentions in differently.

If scanning the relevant literature three generally different measures of intention stand out:

(1) intention to have (any more) children at all

(2) the intention of having a(nother) child within a given time period

(3) intended (expected) family size.

Contrary conclusions are drawn in studies of the intention to have (any more) children at all (Westoff and Ryder, 1977; Schoen et al. 1999; Berrington 2004). While Westoff and Ryder have fundamental doubts about the independent influence of intentions, they are quite manifest for Berrington. Furthermore, Schoen et al. explicitly advocate the additional predictive power of intentions: “Intentions to have or not to have a child or another child and

the certainty of those intentions for future childbearing are strongly and consistently related to future fertility behaviour." (Schoen et al. 1999:798).

There is no consensus concerning the effects of time-dependent intentions that are central for our study. According to Schoen et al, if the intention is for the "foreseeable future" (in their case, within 4 years) then it has a significant impact on fertility behaviour. This position is shared by Rindfuss et al. (1988). On the contrary, Westoff and Ryder had found that intentions for the subsequent two-year period are not highly predictive for the realizations within that two-year period but are indicative of the likelihood of childbearing in the far future. Toulemon and Testa arrive at a similar negative conclusion, namely that "…the relationship between fertility intentions and actual fertility behaviour is quite loose, because it depends on many other factors." (Toulemon and Testa 2005:4), possibly because they found a high rate (58.5%) of uncertainty among their respondents. In a US research on time-dependent intentions, the majority (70%) of respondents retrospectively said that their underrealization resulted from a change of intention due to various factors (Westoff and Ryder 1977: 433).

The longitudinal study of the relationship between intended family size and observed fertility clearly indicates that (individual) completed fertility involves a considerable underachivement as well as overachivement of the intentions (Quesnel- Vallée and Morgan, 2003, Rackin and Morgan 2010). Reports from France (Monier 1989) and Hungary (Kamarás and Szukics 2003) also documented overestimations of future family size (underrealization of intentions). Liefbroer, who discusses this question in detail reports not only downward (and upward) adjustment of family size intention but also identifies factors and mechanism – such as changes in partnership and activity status, fertility events and aging – that contribute to changes in individual family size intentions (Liefbroer, 2008).

The different views and mixed results emerge partly from variation in intention measurement, partly form different research issues and also from measuring fertility outcomes. Th necessity that the fertility outcome measure should correspond with the intention measure is treated self-evident, however we often experience, that they are not corresponding (Beajoaun, Berghammer 2019). The most striking example is when intended or ideal family size at country level is compared with TFR. (This, per definition can correspond only if there is a long-standing stability in the TFR.)

In our research we consider the following intention measures and corresponding fertility outcomes:

Measures of intentions and outcomes (realization) in the GGS program

Type of intention	Outcome measure (ideal)	Outcome measure (used)
Intend to have a(nother) child within three years?	To have a child within 3 years (9-45 month)	If conception within 36 months (birth within 9-45 month) (Individual measure)
		The ratio of intended birth within intended people (Country level measure)
Ultimate intended number (current + additionally planned) of children	Completed fertility at age 50	Whether the intended number of children is achieved within 11 years (individual level measure)
		The ratio of people in a cohort by achieved number of children (cohort level measure)

Previous research, selected

Individual determinants

A quite extensive literature focuses on the individual (group specific) determinants of realizing or non-realizing fertility intentions in one country (Berrington 2004, Dommermuth et al. 2014; Kunst, Trappe 2016; Heaton et al. 1999; Morgan, Rackin 2010; Philipov 2009, Pailhé, Regnier-Lolier 2017; Schoen et al. 1999; Toulemon, Testa 2006). Also some comparative analyses highlight the universal micro-level features supporting the realization of short term fertility intentions (Régnier-Loilier, A. & Vignoli, D. 2011, Kapitány-Spéder 2012). Based on these studies several common factors could be identified. The demographic factors, such as age, partnership status and parity, clearly influence the success or failure of realization. People who are middle aged (35+ in the sub-sample), who live outside a partnership and with higher parity are less likely to realize their childbearing plans (cf. references above). In several countries (Italy, Hungary, Switzerland) childless people are more probable to "postpone", than people having a child. Partnership, self-evidently, is a prerequisite of successful realization of the intention. Additionally, in some countries the form of partnership does also mater. For example, the uncertainty of childbearing decisions in a cohabiting partnership is also noticeable in France and Hungary.

Influences of socio-economic status (education, income, labour market of the woman and her partner) are not comprehensive and affect the analysed countries differently. Whereas in Italy the education level of the male partner is determining the failure of realization, in France the women's characteristics are more pronounced. Labour market uncertainty also contributes to the failure of realization especially in Italy. Moreover, in Germany the failure of realization is higher either if the man is unemployed, or if the woman is full-time employed. Focusing on post-communist countries, people from lower subjective income levels have a lower chance of realizing their intentions than those belonging to middle- or higher-income groups. It seems that unfavourable financial situation during 'turbulent times' significantly increases the risk of failing to realize intentions.

Finally, family norms and attitudes also matter, but less powerfully. Subjective norms affect significantly in some countries (Heaton et al. 1999, Kuhnt, Trappe 2017). That means, those, who state that 'important others' expect their childbearing have a higher chance of realizing their intentions than those who do not.

Comparative results

Comparative research found significant country variations in the realization of short term childbearing intentions, especially between Western European and Eastern European countries. Of those who planned to have a child within three years, two-fifths actually succeeded in France and Germany, one-third in Hungary and Georgia, and one-fifth in Bulgaria (Spéder, Kapitány 2014, Spéder 2019). After taking into consideration the rates of realization in a two years intention-outcome time interval, and different countries (Netherlands, Switzerland, Hungary and Bulgaria), the West-East divide remain present. Additionally, according to the comparison of France and Italy, there are no significant differences between the two examined countries (Regnier-Lollier, Vignoli 2011). Lastly, after employing multivariate modelling, the difference between Western European and Eastern European countries increase: in post-communist countries the chance of realizing childbearing intentions was less than half of the probabilities present in the western countries.

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However, it is noteworthy, that with the inclusion of more and more countries, some differences can be identified within the Western and Eastern European countries as well. Switzerland had lower realization than the Netherlands (Kapitány, Spéder 2012). According to an Austrian-Hungarian comparison, country differences between the two countries hardly differ in the rate of realization (Rieder, Bubner-Ennser 2016). Lastly, having a closer look, the difference between Hungary and Bulgaria, two post-communist countries, are also noteworthy.

Our recent analyse (Spéder 2019) aimed to reveal what kind of macro-level determinants might contribute to the remaining country level differences in the realization of short-term fertility intentions. Four different kinds of macro level determinants were included in our analyse. These were the followings: (i) economic development, the affluence of the society (GDP per capita based on PPP); (ii) the spread and density of the welfare state institutions, especially family related supports; (iii) economic dynamism, the space of the changes in everyday people' structural circumstances, (unpredictability); (iv) cultural climate, prevailing majority beliefs about childbearing and family life.

(In that analyse we used multilevel binary logistic regression techniques to model the realization of fertility intentions among eleven European countries on the pooled dataset. As known, country specific individual level data typically have multilevel structure since subjects within the same country may have outcomes that are correlated with one another due to similarity of a general contextual effect. Accounting within cluster correlation allows us to make appropriate estimate of the phenomenon investigated. Therefore, we *used random intercept logistic regression models*. The model derives its name from the fact that the intercept is allowed to vary randomly across countries through the introduction of cluster (country) specific random effects. The estimates of the extent of similarity of subjects within country can give important insight into the group level effects on individual fertility behaviour. Moreover, in accordance with our primary interest here, we extended our models by adding country specific attributes to measure explicitly the size of the effect of different structural conditions.)

The results of our investigation, the step by step modelling points to a decisive role of *economic dynamism and uncertainty* in producing country differences: the greater the variation in inflation or unemployment (measures of economic uncertainties), the lower the chance of fulfilling the short-term intentions. We assume that unexpected changes can lead to revision or postponement of intentions. *Welfare-state interventions*, on the other hand, shows a positive relation to fulfilment of intentions. From this we concluded that scale of welfare-state intervention produces a kind of sense of security, through which the risks perceived from uncertainty may be mollified. (However to have a more nuanced picture about the effect of welfare-state intervention further analyses are foreseen.) Finally, we found that intentions were fulfilled more successfully in societies where childbearing issues, and also fertility intentions are *viewed dominantly as a private matter for individuals*. Based on our findings, we formulated the assumption that societies and social groups perceiving stronger public expectations (societal norms?) may cause an exaggeration of childbirth intentions that leads to a lesser

chance of their fulfilment.

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Family size intention and (short time) realization; cohort and individual measures

As mentioned earlier the realization of family size intention is hindered by the fact, that we have to have a more longer time window for estimating the accuracy of family size intentions. Since the most GGS data collection is timed in a 3 year time window, and in three times, we are strongly limited in our investigation, and drawing appropriate conclusion. In this situation, using 3 consecutive waves of the GGS we have a 6 year time window between the first and the third wave.) There are only some data collections where family size intentions are asked, and the time window among these measures are long enough to seek answers to our questions. (The US National Survey of Youth and the UK Understanding Societies are such kind of survey programs. See Rackin and Morgan 2010, Iacovou and Tavares 2011 and also Liefbroer 2009). Yet, the GGS (will) enable country comparison, if at a limited manner on the one hand, and in some countries (e.g. in Hungary) where more waves are present and/or there is a longer time window between the waves, a les limited estimation of the accuracy of family size effects are possible.

Let us first compare the initial family size intention in Hungary and France, and go further with an overview of the situation 10 years later in Hungary. Then, by constructing measures of accuracy (overachievement, achievement and underachievement) will be discussed. Lastly, we consider the development of family size intentions, whether they are maintained, downsized of upgraded during the 10 year period. (Methodological remarks will appear always accordingly.)

Cohort level family size intentions in France and Hungary

Comparing the family size intentions[1] and current family size we see the very similar development alongside the life course (age[2]), especially in the case of current family size. The current family size increases proportionally according to age, and level of after age40. There seems to be no differences between France and Hungary (Figure 3). Family size intentions seems to be stable, not varying too much according to age. Striking is the different level family size intentions between Hungary and France: especially the younger cohorts have a much higher level of family size intention in France than in Hungary. As long the level of ultimately intended family size among the French younger cohorts is around the 2.5 level, the Hungarian figures are oscillating around the 2.0 level.

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Changes in current number of children and relative stability of family size intentions

As expected, current family size increased by age, especially among young women. Those having 0.21 child in their age 22, in a decade later, when they are 32, achieved 1.20 mean family size. The change of those who were 31 at the first wave gives us an idea about their potential completed fertility. They had 1.34 child per women, when they were 31, and reached 1.70 when they were 41. During the same

[1] Family size intention is counted as current number of children plus additionally intended number of children.

[2] Since the sample size is quite low for showing age differences, especially in France, and if divided the sample by gender, during this analyse we grouped the people into three years age groups. We denote all age groups by the central ages. E.g. the age group 18-20 is denoted by the age 19.

time, they change their intended family size from 2.12 (in 2001) to 1.83 (in 2011). Although among these age group there is some motivation to have some more children, they were clearly lag behind of their initial intentions.

Considering the intended number of children besides the stability we see two *slight opposite shifts*: those at the very beginning of their fertility carrier (the beginning of their 20s) have below average intended number of children, and upgrade their intentions a decade later, being around their 30 (red scattered line), whereas those at the beginning of their 30s, are optimistic, and have an above average intended number of children, and downsize their intended number of children by their 40s. (The different shifts will be investigated more closer subsequently.)

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Over achievement, achievement and under achievement of family size intentions within 10 years (four waves)

The follow up design of the GGS enables to investigate the realization of family size intentions at the individual and cohort level. We can investigate how far the different cohort approached their intentions during a given time period. Since one decade is too short for tracing a complete fertility carrier, we will concentrate of those at the age just after 30, namely the age group 30-34 in 2001. The selection is based on the notion, that risk to have children at the mid or late forties is quite rare (cf. Frejka, Sardon 2003).

In order to incorporate individual behaviour, following Rankin and Morgan's idea, we differentiae among three groups. Those achieved their intended family size sated in 2001 by 2011, when they were in their early 40, those are named as *achiever*. Those having less children than they intended to have, they are *underachiever*, and those have more children than they originally wished to have, they are *overachiever* (cf. Rackin, Morgan 2010). In order to understand the role of family size of intention we would need at least two decade of observation, but one decade seems to be satisfying to reveal some correlations.

Considering the age group 30-34 (in 2001) we can clearly see, that the achievers are the most populous group (61,8%). (see Figure 5). The remining two fifth of the age group is distributed unevenly: the ratio of under achievers is close to one third (31.4%), and that of overachiever is negligible small, 6.8%. Summarising, the lagging behind of the current number of children is a product of very low number of overachievers, and a four times higher group of underachieves, namely the number of those could not realize their (original) family size intentions.

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Individual factors affecting underachievement

Taking into consideration early life course events, education, religiosity, etc. and using multinominal logistic regression technics, the factors of underachievement in relation to achievement is under investigation.

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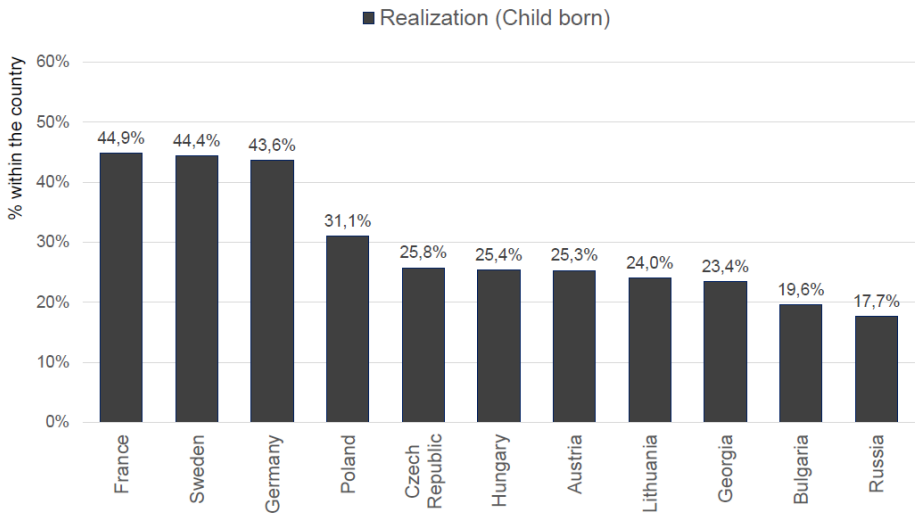
Tables and Figures

Figure 1

The rate of having a child within 7-36 Months among those intending to have a child within 3 years, European countries, all females aged 21-44 and partnered male aged 21-44, at the beginning of the century (various years between 2004-2015)



Source: own calculation, GGS first and second waves, own caluclations

Table 1

The effects of different macro level variables ont he relaization having a birth within three years (Hierarchical logistic models)

Country level variables	Model 1		Model 1		Model 1	
Inflation	0.8828	***				
% of expenditure of family polcy			1.5083	**		
Attitude towards privacy on decision about having a(nother) child					1.0260	***
*** p <0.001 ** p< 0.01						***

Source: own calculation, GGS first and second waves, own caluclations

Figure 2
Intended family size and current family size at the 1st wave of the data collection (HU2001, FR 2005) by age of the respondents, 3 years cohorts (Cohort level measure)

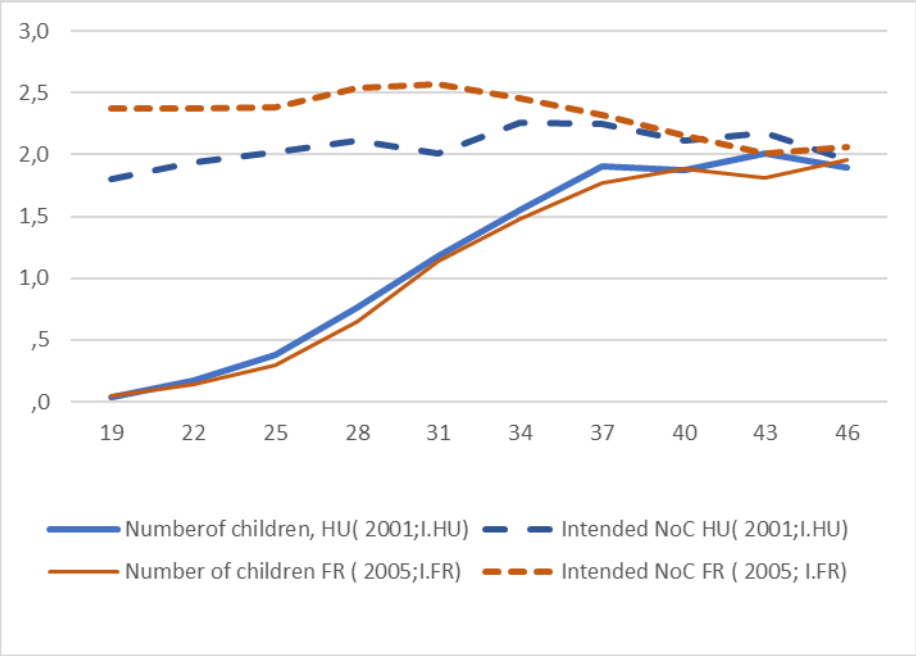


Figure 3
Intended number of children and total number of children in 2001 and 2012 by age in 2001, Hungary (cohort level results)

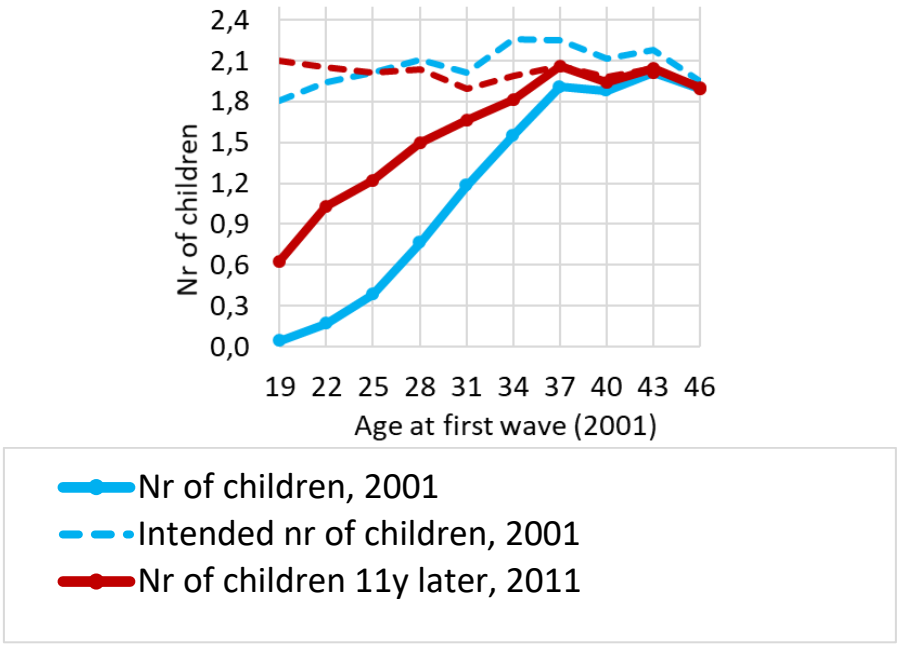


Figure 4
Realizing family size intentions within 11 years, from 2001 to 2012 (from 1st to 4th wave), Hungary, *individual level results t*

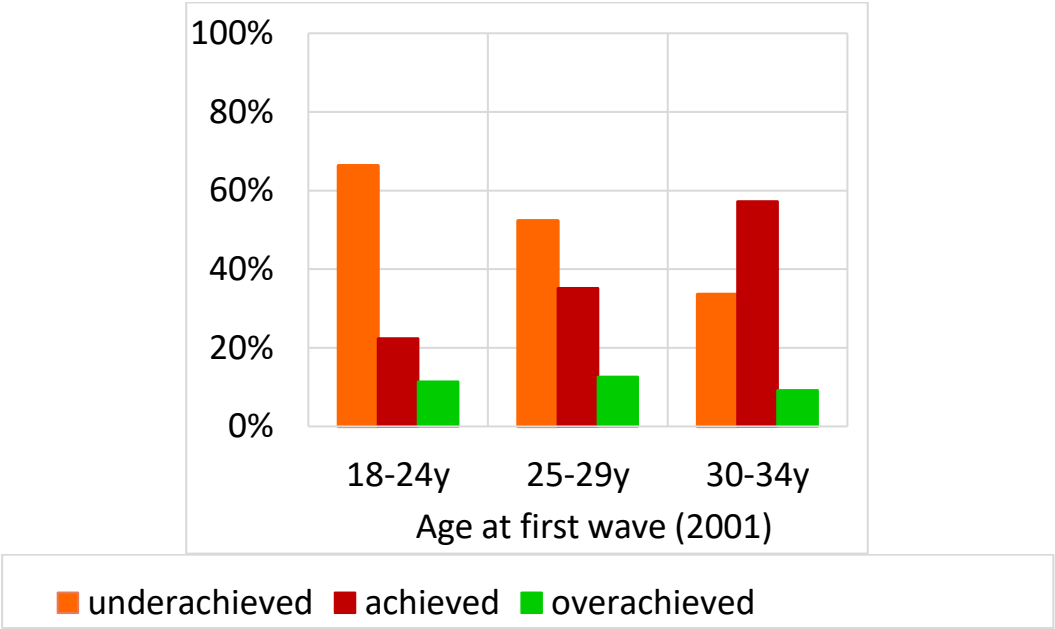


Figure 5
Change in intended number of children from 2001 to 2012 (from 1st to 4th wave), Hungary, *individual level results*