

REGIONAL CONTEXT AND REALIZATION OF FERTILITY INTENTIONS: ARE CAPITALS DIFFERENT? THE EXAMPLES OF AUSTRIA AND HUNGARY*

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ABSTRACT

Despite regional variation in fertility, within-country differences have hardly been addressed in the realm of realizing fertility intentions. We address this shortcoming by analyzing the realization of short-term fertility intentions in Austria and Hungary, comparing data from the capitals (Vienna and Budapest) to the remaining regions. Results demonstrate that realization is lower in Hungary than in Austria and lower in Vienna than in the remaining parts of Austria, whereas in Hungary, behavior tends to be similar in the capital and other regions. Apart from individual characteristics (e.g. age), housing turned out to matter for realization of short-term fertility intentions in both countries. Decomposition analyses reveal that population composition plays a role in differences concerning the realization between countries and at the regional level. Compositional effects refer to partner context, parity and economic situation at the country level, and to age structure, partner context and attitudes towards parenthood at the regional level. In both countries, housing conditions also contribute to differences in realization rates between capitals and other regions.

Keywords: fertility intentions, within-country differences, Austria, Hungary, Generations and Gender Survey, decomposition analysis, housing, Budapest, Vienna

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INTRODUCTION

Studies on fertility intentions gained importance in demography during the last decades (e.g. Billari et al., 2009; Liefbroer, 2009; Sobotka, 2009; Hagewen and Morgan, 2005). Recently, panel data from the Generations and Gender Survey (GGS) has initiated research on short-term intentions and their realization in several European countries (Régnier-Loilier and Vignoli, 2011; Spéder and Kapitány, 2009; Toulemon and Testa, 2005). Despite the observation that capitals and large cities show lower fertility rates than rural areas (e.g. de Beer and Deerenberg, 2007; Hank, 2002; Kulu and Washbrook, 2014), the regional context has been hardly considered as an explanatory factor in analyses on fertility intentions and their realization (an exception is Mencarini et al., 2015).

The aim of the present study is threefold. Firstly, we contribute to the literature on the realization of fertility intentions by differentiation between a country's capital and the remaining areas. A variety of individual characteristics (e.g. age, marriage, parity, education) turned out to affect the realization of short-term fertility intentions (e.g. Kapitány and Spéder, 2012; Morgan and Rackin, 2010; Régnier-Loilier and Vignoli, 2011). Mencarini et al. (2015) included municipality size as an independent variable to explain the realization of fertility intentions in Italy, distinguishing between big, medium, and small communities. In addition, Riederer and Buber-Ennsner (2019) recently studied urban–rural differences at an aggregate level in eleven European countries. A detailed analysis of within-country differences, as well as housing conditions in Austria and Hungary provides further insights on the realization of family plans within the European context.

Secondly, we further extent knowledge on the realization of fertility intentions in Europe by comparing Austria and Hungary. Both countries are interesting cases, as they are both characterized by rather low fertility rates (*Table 1*).¹ Although existing studies reveal substantial variation across countries (e.g. Régnier-Loilier and Vignoli, 2011; Kapitány and Spéder, 2012), cross-country comparisons of realization of fertility intentions are still sparse. Additionally, prior research on fertility variation between urban and rural areas was almost entirely restricted to Nordic countries (Kulu and Washbrook, 2014).

Thirdly, comparing similar countries that also display remarkable differences is a recommended strategy in identifying relevant country specific factors (Neyer and Andersson, 2008; Matysiak and Vignoli, 2010). We compare two Central European countries that have much in common regarding urban–rural differences. In both countries, for instance, only the capital can be accounted for as an internationally important metropolis, with more than one million inhabitants.² Also, in both countries, fertility is traditionally lower in their capitals than the country average (*Table 1*). At the same time Austria and Hungary show remarkable differences at the national and regional levels in terms of contextual and compositional factors (see details described below). The two countries have had a common history and share many cultural values. For decades however, the neighboring countries found themselves placed at different sides of the Iron Curtain, and developments of (family) policy and fertility varied accordingly. By studying Vienna and Budapest as opposed to other regions of Austria and Hungary, we investigate the realization of short-term fertility intentions in urban and rural areas under different country-specific and regional circumstances.

Table 1: Mean number of children per woman in Austria and Hungary, 1965–2015

	1965	1975	1985	1995	2005	2015
Austria	2.70	1.83	1.47	1.42	1.40	1.49
Vienna	1.82	1.40	1.33	1.33	1.38	1.42
Hungary	1.82	2.34	1.85	1.57	1.30	1.44
Budapest	n.a.	n.a.	1.47	1.22	1.12	1.16

Source: Eurostat (2016), Statistics Austria (2015, 2016), HCSO (2016).

¹ Hungary witnessed lowest total fertility rate in 2011 (1.23), Austria in 2001 (1.33; Eurostat, 2016).

² Vienna is by far the largest city in Austria with 1,766,746 inhabitants in 2014, followed by Graz with 269,997 inhabitants (Statistics Austria, 2015). Budapest counted 1,759,407 inhabitants in 2015, followed by Debrecen with 203,059 inhabitants (HCSO, 2016).

REGIONAL FAMILY CONTEXT AND DIFFERENCES IN THE REALIZATION OF FERTILITY INTENTIONS

The literature on fertility discusses several explanations for differences in fertility rates between rural and urban regions. In particular, (a) regional opportunity structures, (b) local patterns of social interactions/cultural norms, (c) housing conditions, and (d) the distribution of individual characteristics are assumed to be crucial factors (Hank, 2002; Kulu and Washbrook, 2014; Trovato and Grindstaff, 1980).

(a) *Opportunity structures* affect the ability to provide an appropriate environment, seen as a prerequisite for parenthood. Regarding opportunity structures that are important for the realization of childbearing intentions, family policy is highly relevant (Németh, 2017; Oláh, 2003; Matysiak and Węziak-Białowska, 2016). In the past Austria had been characterized by general family support, while Hungarian family policy offered a high level of support for working mothers (Ferrarini, 2006; Korpi, 2000). Over the last decades Austria, in addition, established policies aimed at fostering work–family reconciliation – in particular by investing in childcare facilities for (preschool) children (Blum et al., 2014). In Hungary, principles of support changed profoundly after 1989–1990, leading to high uncertainty for families (Spéder and Kamarás, 2008), but there are longer term continuities and since the 2010s new forms of family support have been introduced. At present, family support in Hungary is very generous when cash benefits are concerned, but falls behind regarding the availability of childcare services (Bartus et al., 2013). Provision of formal childcare, especially for children below the age of three, is however key for childbearing. In both countries, availability of childcare facilities is higher in capitals than in other regions. Nevertheless, the overall availability of childcare facilities is remarkably higher in Austria than in Hungary, and the differences between the capitals and other regions are more pronounced (2016: 14% in Hungary, 23% in Budapest; 25% in Austria; 44% in Vienna) (HCSO, 2017; Statistics Austria, 2017).

Educational and labor market opportunities are also relevant to the realization of childbearing intentions. Career intentions and corresponding opportunities may compete with fertility intentions, thus may contribute to postponement or abandonment of fertility intentions. In fact, the share of persons in the labor force who are tertiary educated and/or employed in science and technology³

³ Strictly speaking, the share of persons in the labor force who are tertiary educated and/or are employed in science and technology refers to the composition of the labor force. It, however, also perfectly indicates educational and labor market opportunities.

is higher in both capitals than in the other regions of the concerned countries. Despite this commonality, this proportion is remarkably higher in Austria than in Hungary (2018: 36% in Hungary, 59% in Budapest; 49% in Austria; 56% in Vienna) (Eurostat, 2019a).

(b) Regarding *norms and values*, Austria and Hungary share, together with most European countries, the two-child-family ideal (Sobotka and Beaujouan, 2014). Regarding gender norms however, results are mixed. While some authors find that culture-related conditions for maternal employment are “somewhat better” in Hungary than in Austria (e.g. Matysiak and Węziak-Białowolska, 2016), others report that Hungarians hold more conservative attitudes than Austrians do in this respect (Panova and Buber-Ennser, 2016). Moreover, in the GGS, Hungarian participants largely agreed that children are needed in order to have a fulfilling life, whereas agreement was much lower in Austria. Within both countries, agreement was lower in the capitals than in other parts. As traditional family views are stronger in rural, as they are in urban areas, parenthood might be more relevant for individuals in rural settings, which might entail an increase in the realization of fertility plans.

(c) As an appropriate living environment for a child is seen as a prerequisite for parenthood, *housing conditions* are also related to family formation and enlargement (Vignoli et al., 2013; Clark, 2012; Mulder, 2006; Mulder and Billari, 2010; Mulder and Wagner, 2001; Ström, 2010). As Hungarian policies favor ownership, nine out of ten Hungarians own the house or apartment they are living in (Pittini et al., 2015), and cohabiting with parents is common (Hegedüs and Teller, 2007; Murinkó, 2019). Renting is usually not regarded as a long-term arrangement, private renting is concentrated in cities where the rent is expensive (Murinkó, 2019). In Austria, only one out of two private households are owner-occupied, around 43% are rented dwellings. Social housing provided by municipalities and cooperative housing account for more than half among rented dwellings (Statistics Austria, 2018b). Regional variation is large: in Vienna, only two out of ten dwellings are owner-occupied whereas renting is prevailing (77%, consisting of 43% social housing and 34% private renting) (Statistics Austria, 2018b). In both countries, housing costs of rented dwellings are above the country-average in the capitals (Statistics Austria, 2018b; Eurostat, 2019b).

(d) Turning to *population characteristics*, we utilize three aspects, namely, the incidence of economic hardship, the age structure of inhabitants, and the proportion of one-person-households. Assuming that economic hardship, lower fecundity at older ages, and living alone (being single) may impede successful

realization. Regional differences in these characteristics will contribute to regional differences in realization.⁴

The share of persons perceiving financial constraints is higher in Hungary than it is in Austria: According to GGS data (Vikat et al., 2007), 16% of Hungarian women and men aged between 21 and 45 years had difficulties in making ends meet, but only 9% among their Austrian peers had similar issues (own computation). Within the countries, economic constraints were perceived less often in Budapest than in other regions of Hungary (12% versus 17%), but more often in Vienna than in other Austrian regions (14% versus 8%).

Age structures are similar in both countries, in the capitals as well as in other parts (Eurostat, 2019b; Statistics Austria, 2018a). Nevertheless, the crucial aspect is not the general age structure, rather the age of those who want (additional) children. Among those who intend a(nother) child, the share of persons aged 35 to 45 years is lower in Hungary than in Austria (Appendix, *Tables A1* and *A2*). Remarkably, the share of persons intending to have a child among people aged 35–45 is particularly high in Vienna (36%), thus arguing in favor of lower levels of realization in the Austrian capital.

Finally, living alone is common in both countries, especially in metropolitan areas. This living arrangement is prevalent in young adulthood (after leaving the parental home) and at older ages (due to widowhood or separation/divorce). Overall, one-person households are more frequent in Austria than in Hungary, and in both countries, the proportions of one-person households are higher in the capital as compared to the whole country (Austria: 37%, Hungary 30%; Vienna: 45%; Budapest: 40%; numbers refer to 2014 for Austria and to 2016 for Hungary) (Eurostat, 2019b). Although a proportion of men and women living alone are not single, and have non-co-resident partners, this living arrangement is unfavorable for family formation.

Overall, we hypothesize that the realization of childbearing intentions is lower in cities than in other areas. This should hold for Vienna and Budapest as compared to the respective other regions of Austria and Hungary. Most of the discussed city characteristics support our hypothesis (educational and labor market opportunities, values, housing). Only availability of formal childcare questions our assumption. Both capitals are attractive places, offering alternatives that might compete with childbearing and child rearing.

⁴ We want to add that the above mentioned different educational distribution of inhabitants is also crucial with regard to the composition of the population. Those highly educated who intend to have a child may have more abilities and resources to realize their intentions. This may counteract the contextual effects of the indicated opportunity structures.

In terms of contextual differences at the country level, our comparison showed that Austria and Hungary have much in common (low total fertility rates, values etc.). Nevertheless, differences in economic hardship indicate better conditions to realize fertility intentions in Austria. In addition, research suggests that post-communist societies have lower realization rates due to the character and the pace of social change after 1989–1990; discontinuity of political support, and resulting instances of feelings of anomie (Spéder and Kapitány, 2014; Kapitány and Spéder, 2012). We thus hypothesize realization to be higher in Austria than in Hungary.

DATA, VARIABLES, AND ANALYTIC STRATEGY

The current study is based on the Generations and Gender Survey (GGS), a panel study with detailed data on family formation and fertility. The first and second waves of the study were carried out in 2004 and 2008 in Hungary and in 2009 and 2013 in Austria. Analyses are restricted to the overlapping age range in the two countries (between 21 and 45 years in wave 1).

In the first part, we provide a general overview of fertility intentions in both countries according to the distinction between the capital cities versus other parts of the relevant countries, based on the first wave of the GGS, including the responses of 10,270 men and women. Among them, 876 were living in Vienna, 3,601 in other parts of Austria, 743 in Budapest, and 5,050 in other parts of Hungary. We excluded persons expecting a child, men whose female partners were 50 years old or above, as well as persons with same-sex partners, due to insufficient information on short-term fertility intentions.

In the second part, we study the realization of short-term fertility intentions. The sample of analysis includes 2,159 panel respondents who intended to have a child within three years in wave 1.⁵ Among them, 183 respondents were residing in Vienna and 170 in Budapest, whereas 760 and 1,046 were living in other regions of Austria and Hungary, respectively.

Our main variable of interest is the intention to have a child within three years. The exact wording of the questions on fertility intentions differ between the two countries. In Austria, respondents were asked: “Do you intend to have a/another child during the next three years?”, with answer options: “definitely not”,

⁵ About 1% of respondents in Hungary and less than 1% of respondents in Austria who did not have a(nother) new-born between wave 1 and wave 2 were pregnant at wave 2. We excluded them from our analyses because we cannot be sure whether these pregnancies result in live births or not.

“probably not”, “probably yes” and “definitely yes”. Thereafter, respondents were asked: “Supposing you do not have a(another) child during the next three years, do you intend to have any (more) children at all?”, with answer options: “definitely not”, “probably not”, “probably yes” and “definitely yes”. Combining these two questions allows to distinguish between individuals (1) intending to have a child within three years, (2) intending to have a child later, or (3) intending to have no (further) child/children.

In Hungary, respondents were asked: “Would you like to have any more children?” If answering affirmative, respondents were asked: “At what age would you like your (next) baby to be born?” (Respondents had to give a specific age in years, though some did not give a figure, or answered with “don’t know”). For the standardized international dataset, dichotomous variables for “intending to have a child within the next three years” and for “intending to have a child later” were generated by the Hungarian GGS team. These Hungarian variables are widely used for comparative research on fertility intentions and their realization (e.g. Kapitány and Spéder, 2012).

We study the realization of short-term fertility intentions by analyzing whether those who wanted a(nother) child within three years in the first wave have realized their intentions by the time the second wave or not. Binomial logistic regression models are carried out to estimate average marginal effects. They represent the average effect of a variable on the probability of realization and are comparable across different groups (e.g. models for different countries) (Best and Wolf, 2012). Positive coefficients indicate a higher probability of realization, negative coefficients indicate a lower probability.

The main explanatory variable is regional context: “capital” versus “remaining part of the country”. Various socio-demographic and economic characteristics are considered as control variables: (a) gender; (b) age group (21–24, 25–34, 35–45 years); (c) partnership status (married, cohabiting, living apart together (LAT), no partner)⁶; (d) parity (childless, one child, two children, three or more children); (e) educational level (primary or secondary education, tertiary education); (f) financial situation (difficult, ok, good); (g) attitudes towards parenthood (agreement regarding the necessity of children). Existing literature has repeatedly shown that these variables affect the realization of fertility intentions (Spéder and Kapitány, 2009; Spéder and Kapitány, 2014; Régnier-Loilier and Vignoli, 2011). In addition, we include the following aspects of housing: (1) type of

⁶ We do not exclude persons without a partner at wave 1, as a non-negligible share of respondents living in the two capitals reported no partner and (nevertheless) wanted to have a child in the near future.

housing (owner, tenant or subtenant and paying rent, accommodation is provided rent-free, other), (2) the question whether childbearing depends on housing conditions or not⁷ (not at all, a little, quite a lot, or a great deal), and (3) the intention to move in the near future⁸ (yes, no).⁹ Measures refer to wave 1. Detailed sample characteristics are shown in the Appendix (*Tables A1* and *A2*).

Our analytical strategy is as follows: First, we describe fertility intentions as reported in wave 1 and compare them across countries and capitals. Thereby, we discuss the mean number of already born and further intended children, as well as short-term and long-term fertility intentions. Second, realization of short-term intentions (by wave 2) is analyzed. In multiple regression analysis, we follow a stepwise hierarchical model build-up: a basic model (M1) only includes our two main explanatory variables (capital vs. remaining part; country), whereas the multivariate model (M2) includes the control variables and aspects of housing as mentioned above. Logistic regressions are carried out on the pooled sample, as well as for Austria and Hungary separately, to find out an overall effect of regions, and possible differences by countries. Using the method suggested by Hoetker (2007), we test whether coefficients for socio-demographic characteristics differ between countries.

Finally, decomposition analyses are applied to assess the relative impact of compositional factors (incl. housing characteristics). The distribution of individual characteristics refers to the composition of rural and urban populations. We employ methods proposed by Fairlie (2005) and Jann (2006) to examine whether the difference in realization rates between (a) countries, and (b) capitals and other regions is due to population composition, or due to other reasons (e.g. regional differences concerning socio-demographic characteristics).

⁷ The exact wording of the question was: "How much would the decision on whether to have or not to have a/another child [AT: during the next three years] depend on your housing conditions?" (1) Not at all, (2) a little, (3) quite a lot, (4) a great deal.

⁸ We generated a dichotomous variable for the intention to move, based on the following questions. Austria: "Do you intend to move within the next three years?" Possible answers: (1) definitely not, (2) probably not, (3) probably yes, (4) definitely yes. Hungary: "Are you planning to change your housing conditions in the near future?" Possible answers: (1) Yes, within one to two years, (2) yes, within 3–5 years, (3) not yet, but would like to later, (4) does not want to move or change, (9) don't know.

⁹ Other aspects of housing, like the number of rooms or the size of the dwelling could not be included in the analyses as these variables were included either only in Austria, or only in Hungary, but not in both countries. Satisfaction with the dwelling (measured on a scale from 0 to 10) was initially included in our analyses but was dropped, as it was not associated with the realization of fertility intentions.

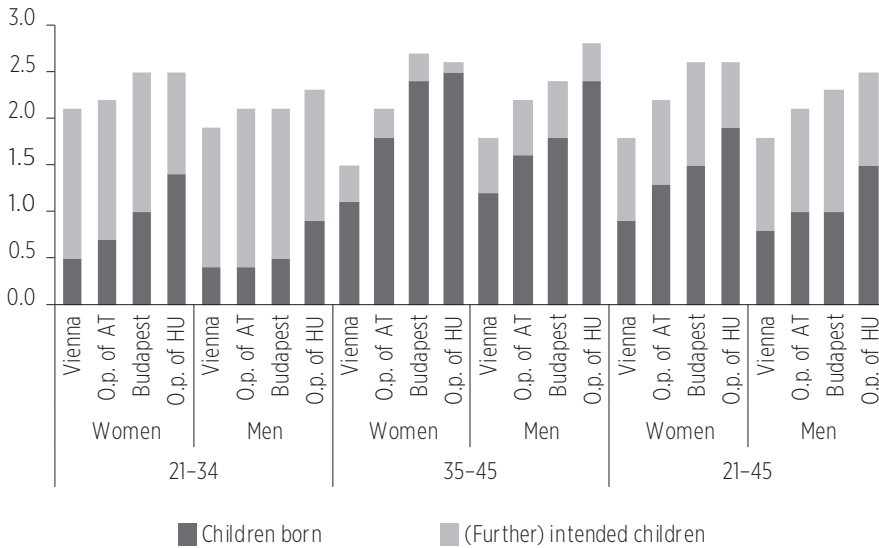
RESULTS

Fertility intentions in Austria, 2009 and Hungary, 2004

In Austria, individuals living in the capital, Vienna, had less children as compared to those in the remaining parts of the country (*Figure 1*). When adding the (further) intended number of children, Vienna is also well behind the remaining parts of Austria. A similar difference between the capital and other parts of the country is observable also among men in Hungary, but not among Hungarian women. It has to be taken into consideration, however, that the intended total number of children reflects already realized intentions plus the number of (further) intended future children. Looking at intentions for future children alone, we see that these regional differences disappear. Intentions alone are comparable between capitals and other regions and are even slightly higher in the capital cities. The number of children already born is higher in Hungary than it is in Austria. A distinction between two broad age groups, 21–34 and 35–45 years, reveals that the interviewed persons in Hungary had started family formation earlier. In the older reproductive age groups (35–45), Austrian women, as well as women living in Budapest, intended to have (further) children more often than women living in the remaining parts of Hungary.

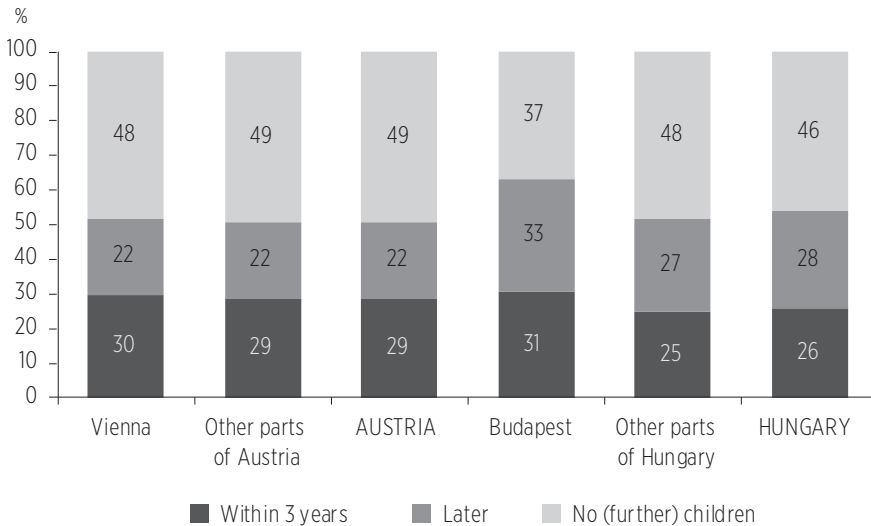
We now turn to the temporal dimension of fertility intentions, differentiating between intending a child within the next three years, wanting a child later, or intending no further family extension. Results are quite similar for both Austria and Hungary (*Figure 2*). Three out of ten women and men intended to have a child in the near future, about one out of four wanted a child or children later on, and one out of two did not want to have any (further) children. In Hungary, fewer interviewed persons had stated to have completed family formation than in Austria (46% versus 49%). Childbearing intentions for the coming three years were stated by 26% of respondents in Hungary and by 29% of respondents in Austria. A differentiation by age (*Figure 3*) reveals that in both countries persons in their late twenties most frequently wanted to have a child within the next three years (Austria: 50%; Hungary: 42%). Women and men in their early thirties also frequently indicated to intend to have a child in the near future in Austria (44%), while the indication of this intention happened less often in Hungary (35%). Similarly to what we could observe regarding the number of (further) intended children, capitals do not differ much from other country regions concerning three-year intentions. In Hungary, short-term intentions were indicated even more often in Budapest than in the remaining part of the country.

Figure 1: Mean number of born and further intended children in Hungary 2004 and Austria 2009 by region, sex and age



Note: "O. p. of AT" stands for "Other parts of Austria", "O. p. of HU" for "Other parts of Hungary".
Source: Generations and Gender Survey wave 1, N = 10,002.

Figure 2: Temporal dimensions of fertility intentions by regions in Hungary 2004 and Austria 2009



Source: Generations and Gender Survey wave 1; N = 10,270.

Figure 3: Temporal dimension of fertility intentions by regions and age of respondent in Hungary 2004 and Austria 2009

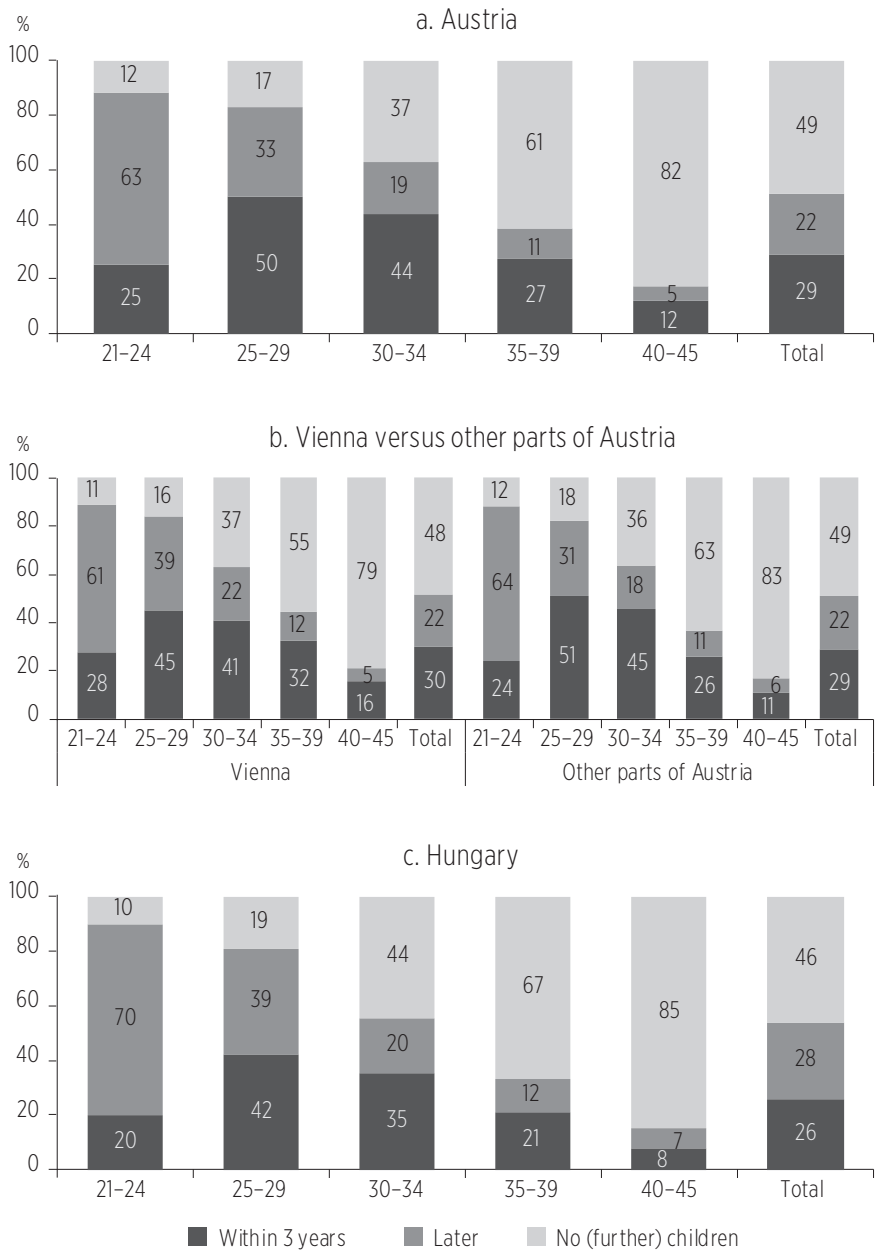
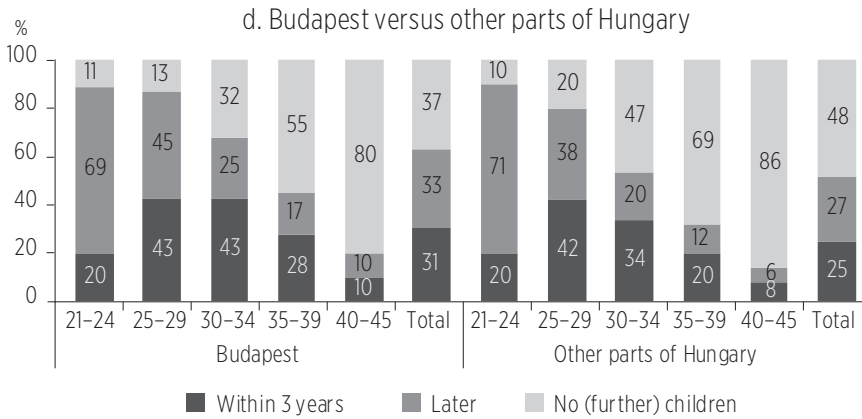


Figure 3: Temporal dimension of fertility intentions by regions and age of respondent in Hungary 2004 and Austria 2009 (continued)



Source: Generations and Gender Survey wave 1 (own calculations with weighted data); N = 10,270, among them 876 in Vienna, 3,601 in other parts of Austria, 743 in Budapest, and 5,050 in other parts of Hungary.

After this brief overview of fertility intentions based on the first wave of the Austrian and Hungarian GGS, we study in detail the realization of short-term intentions in the coming section.

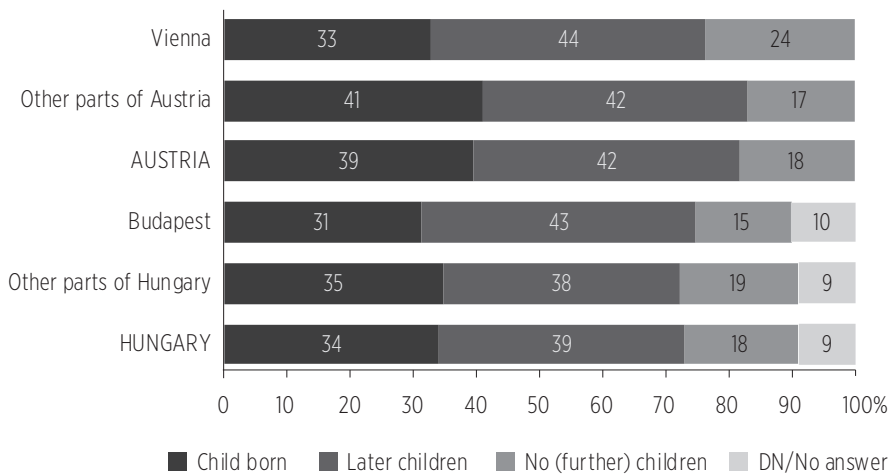
Differences in realization rates between Austria (2009–2013) and Hungary (2004–2008)

Descriptive findings indicate that short-term intentions were more often realized in Austria than in Hungary: four out of ten Austrians, yet only one out of three Hungarians were intending to have a child within the next three years in wave 1 and had a new-born child by wave 2 (*Figure 4*).¹⁰ In line with descriptive findings, multivariate results based on the pooled sample confirm that short-term intentions were more often realized in Austria than in Hungary (*Table 2, Model M1*). The difference between Austria and Hungary remains statistically significant when controlling for various socio-demographic characteristics, economic situation, and aspects of housing (*Model M2*). As the country coefficient changes from 0.06** to 0.10***, we might conclude that the differences in realization be-

¹⁰ In Hungary, one in ten answered with “don’t know” when asked about their childbearing plans, while in Austria the same answer was given by less than 1%.

tween the two countries would be even larger if socio-economic characteristics, economic situation, attitudes towards parenthood, and housing conditions were the same in Austria and Hungary.

Figure 4: Realization of short-term childbearing intentions, Hungary (2004–2008) and Austria (2009–2013)



Source: Generations and Gender Survey wave 1 and wave 2; N = 2,159 panel respondents intending a child within three years in wave 1.

Differences in realization rates between capitals and regions in Austria (2009–2013) and Hungary (2004–2008)

Short-term fertility intentions were less often realized in the capitals, Vienna and Budapest, than in other regions of Austria and Hungary (*Figure 4*). The difference between capitals and other regions is larger in Austria (33% vs. 41%) than in Hungary (31% vs. 35%).¹¹ Our basic regression model also reveals lower rate of realization in capitals than in other regions of the countries (*Table 2, Model M1*), but this regional difference is no longer statistically significant in the multivariate model (*Model M2*).

¹¹ A further differentiation between realization, postponement, and abandonment shows that in Austria, individuals abandoned their plans and did not plan to have any (further) children more often in Vienna than in other regions of Austria (24% vs. 17%). In Hungary, childbearing has more frequently been postponed until later years in life in Budapest than in other regions of Hungary (43% vs. 38%).

Table 2: Regression analyses on realization of childbearing intentions (average marginal effects)

Sample/country	Pooled sample		Austria		Hungary	
Model	M1	M2	M1-AT	M2-AT	M1-HU	M2-HU
Realization (dichotomous)						
Capital	-0.06*	-0.04	-0.08 (*)	-0.06	-0.04	-0.02
Other regions	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Austria	0.06**	0.10***	---	---	---	---
Hungary	(ref.)	(ref.)	---	---	---	---
Sex						
Male	---	(ref.)	---	(ref.)	---	(ref.)
Female	---	0.00	---	0.03	---	-0.04
Age						
21–24 years	---	0.07*	---	0.01 ^a	---	0.12**
25–34 years	---	(ref.)	---	(ref.)	---	(ref.)
35–45 years	---	-0.23***	---	-0.27***	---	-0.18***
Partnership status						
Married	---	(ref.)	---	(ref.)	---	(ref.)
Cohabiting	---	-0.05 (*)	---	-0.03	---	-0.07 (*)
LAT	---	-0.23***	---	-0.23***	---	-0.22***
No partner	---	-0.33***	---	-0.30***	---	-0.35***
Parenthood/parity						
Childless	---	(ref.)	---	(ref.)	---	(ref.)
1 child	---	0.06 (*)	---	0.08 ^a	---	-0.22*
2 children	---	-0.02	---	0.00	---	-0.03
3 or more children	---	-0.10**	---	-0.06	---	-0.13**
Education						
Primary or secondary	---	(ref.)	---	(ref.)	---	(ref.)
Tertiary education	---	0.06*	---	0.06	---	0.07 (*)
Unknown	---	0.04	---	0.01	---	0.05
Economic situation						
(Very) difficult	---	(ref.)	---	(ref.)	---	(ref.)
OK	---	0.04 (*)	---	0.09*	---	0.02
(Very) good	---	0.09**	---	0.14***	---	0.02
Attitudes towards parenthood						
Child(ren) necessary for a fulfilling life	---	0.09**	---	0.09*	---	0.11**
Neither/nor	---	(ref.)	---	(ref.)	---	(ref.)
Child(ren) not necessary	---	0.01	---	-0.01	---	0.04

Table 2: Regression analyses on realization of childbearing intentions (average marginal effects) (continued)

Sample/country Model	Pooled sample		Austria		Hungary	
	M1	M2	M1-AT	M2-AT	M1-HU	M2-HU
Type of housing						
Own accommodation	---	(ref.)	---	(ref.)	---	(ref.)
Tenant or subtenant, paying rent	---	-0.01	---	0.03	---	-0.09*
Rent-free accommodation	---	0.04	---	0.01	---	0.05
Other	---	-0.06	---	-0.07	---	-0.07
Childbearing depending on housing conditions						
Not at all	---	(ref.)	---	(ref.)	---	(ref.)
A little	---	-0.03	---	-0.06	---	-0.01
Quite a lot or a great deal	---	-0.03	---	-0.09 ^a	---	0.01
Intention to move						
No	---	(ref.)	---	(ref.)	---	(ref.)
Yes	---	0.07*	---	0.04 ^a	---	0.10***
Cragg-Uhler R ²	0.01	0.20	0.01	0.24	0.00	0.19
N	2,127	2,127	916	1,916	1,211	1,211

Notes: (*) $p \leq 0.1$; * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$. Model M2-AT versus model M2-HU: LR Chi² (20) = 31.33, $p = 0.05$. Likelihood-ratio or Wald tests indicating differences in coefficients between models M2-AT and M2-HU: ^a $p \leq 0.05$.

Source: Generations and Gender Survey wave 1 and wave 2; panel respondents intending a child within three years in wave 1.

Separate models for Austria and Hungary testify that lower realization of fertility intentions in capitals is mainly due to results for Austria: in models with region included as a single explanatory variable, we find a significant difference between Vienna and the other regions of Austria (*Table 2, Model M1-AT*). When controlling for socio-demographic and economic characteristics, as well as housing, persons living in Vienna do not significantly differ from their compatriots from other regions in terms of realization versus non-realization (*Table 2, Model M2-AT*) as the estimated coefficient becomes smaller in size, and loses statistical significance in the multiple regression model. It seems as though the observed lower probability of realizing fertility intentions in Vienna (as compared to other regions of Austria) is partly due to a different composition between these regions in terms of socio-demographic characteristics, economic situation, attitudes and housing.

Although non-realization is slightly higher in Budapest (*Figure 4 and Table 2, Model M1-HU*), we find no significant regional variation in Hungary. Consequently, behavior proves to be similar in the capital and other regions.

Effect of socio-demographic characteristics and housing on realization rates in Austria (2009–2013) and Hungary (2004–2008)

We now turn to our control variables. As expected, age, partnership status, and parity are all crucial for realizing short-term fertility intentions (*Table 2, Models M2-AT and M2-HU*). Especially at an older reproductive age, childbearing intentions are significantly less often realized. In addition, in Hungary, persons in their early twenties realized their intentions to a higher extent, the same however, is not true for Austria.

As expected, partnership situation is crucial. Living apart together with the partner is a less favorable context for realizing fertility intentions. In addition, persons that are not in partnerships also rarely realized their previously stated short-term intentions. Regarding marital status, married persons realized their short-term fertility intentions more often than those cohabiting. In Austria, however, this difference is not statistically significant. Parity also matters for realization. On average, Austrians already having one child realize their intentions more often than childless respondents. Contrarily, Hungarians already having one child realized their intentions less often than childless compatriots. In addition, parents with two or more children also realized their further childbearing plans less often. The estimated coefficient is, however, only statistically significant in Hungary.

Education is related to realizing short-term fertility intentions in the sense that highly educated persons tend to be more successful in realizing their plans. Although the effect is statistically significant only in Hungary, the respective coefficient is similar in Austria. Regarding financial constraints, a good economic situation is associated with realization of short-term intentions in Austria, whereas economic constraints seem to have no influence on the realization of previously stated childbearing intentions in Hungary. Moreover, attitudes towards the relevance of having children are related to the realization of intentions in both countries. If children are regarded to be necessary for a fulfilling life, short-term fertility intentions are realized more frequently (*Table 2*).

Finally, our analyses reveal that housing is linked to the realization of childbearing plans. In Hungary, tenants realized their plans less often than home-owners, and persons intending to move in the near future had higher realization rates. In Austria, respondents who made their childbearing dependent on housing conditions realized their plans less often.

Factors behind regional differences in realization: on compositional and contextual effects

How relevant are the population compositions of Austria and Hungary for the difference observable between the two countries? We use decomposition analysis that allows us to answer this question. Before discussing the results, we want to underline that these decompositions refer to persons intending to have a child within the next three years, and do not refer to the general population.

Results suggest that differences in composition explain about one third of the observed *difference in realization between Austria and Hungary*. Results shown in *Table 3* indicate that (1) a lower share of singles, (2) a larger share of parents with one child, and (3) a higher share of households in a good economic situation in Austria, as compared to Hungary, contribute to the higher realization rate in Austria.¹² According to our findings stated above, realization probabilities turned out to be substantially lower for respondents without a partner, and to be higher among Austrian one-child-parents and among Austrian households in good economic situations.

Next, we approach the question of how far *differences in realization between capitals and other regions* can be attributed to the composition of populations in the respective regions. Results indicate that different compositions explain a substantial part of these regional differences (35% to 53%) (*Table 3*). Various compositional effects can be identified within the pooled sample. Namely, (1) a lower share of people below 25 and a larger share of people above 34 years, (2) larger shares of LAT relationships and singles, and (3) lower shares of people thinking that children are necessary for a fulfilling life, contribute to the observed lower realization in capitals.¹³

In Austria, the larger share of persons in advanced reproductive age (i.e. 35–45 years), the lower share of households in good economic living conditions, and the higher proportion of persons for whom the housing conditions are crucial for childbearing intentions in Vienna (compared to the remaining part of Austria) result in lower realization rates.

¹² There are, however, also compositional effects that are not relevant in explaining the observed higher realization in Austria. Nevertheless, these effects are interesting with respect to our theoretical considerations. The following compositional effects would rather contribute to higher realization in Hungary: (1) the observed age structure among people with childbearing intentions, (2) the lower share of cohabiting couples and LAT relationships, (3) the higher share of tertiary educated persons, (4) the higher share of people thinking that children are necessary for a fulfilling life, and (5) the higher share of men and women intending to move in the near future.

¹³ Larger shares of people with tertiary education, larger share of households in a good economic situation, and the larger share of individuals intending to move in the near future could potentially contribute to a higher share of realization in capitals.

Budapest and the other parts of Hungary turned out to have rather similar rates of realization. Nevertheless, interesting insights regarding composition are gained: larger shares of young people (below 25), singles, and persons in LAT relationships, a lower share of people regarding children as necessary, as well as a larger share of tenants contribute to Budapest's (slightly) lower realization rate (*Table 3*).¹⁴

Table 3: Realization of childbearing intentions in Austria (2009–2013) and Hungary (2004–2008) (decomposition analyses, binomial logistic regressions)

Country/region	Austria – Hungary		Capital – other parts of the country	
Sample	Pooled sample	Pooled sample	Austria	Hungary
Difference in realization probability	0.057	–0.051	–0.078	–0.037
.. explained by composition, %	0.019 (34%)	–0.018 (35%)	–0.031 (39%)	–0.019 (53%)
Region				
Capital	–0.002	---	---	---
Other regions	(ref.)	---	---	---
Austria	---	0.008 **	---	---
Hungary	---	(ref.)	---	---
Sex				
Male	(ref.)	(ref.)	(ref.)	(ref.)
Female	0.000	0.000	–0.001	–0.003
Age				
21–24 years	–0.002*	–0.002 (*)	0.000	–0.005*
25–34 years	(ref.)	(ref.)	(ref.)	(ref.)
35–45 years	–0.021***	–0.009***	–0.014***	–0.002
Partnership status				
Married	(ref.)	(ref.)	(ref.)	(ref.)
Cohabiting	–0.003 (*)	0.000	0.000	0.001
LAT	–0.015 ***	–0.006 ***	0.003	–0.012 ***
No partner	0.021***	–0.009***	–0.004	–0.018***
Parenthood/parity				
Childless	(ref.)	(ref.)	(ref.)	(ref.)
1 child	0.022**	0.001	–0.001	0.000
2 or more children	0.010	0.004	0.001	0.006

¹⁴ The larger shares of people with tertiary education and of individuals intending to move in the near future would potentially contribute to a higher share of realization in Budapest than in other parts of Hungary.

Table 3: Realization of childbearing intentions in Austria (2009–2013) and Hungary (2004–2008) (decomposition analyses, binomial logistic regressions) (continued)

Country/region	Austria – Hungary		Capital – other parts of the country	
Sample	Pooled sample	Pooled sample	Austria	Hungary
Education				
Primary or secondary	(ref.)	(ref.)	(ref.)	(ref.)
Tertiary education	–0.002 (*)	0.009*	0.006	0.018 (*)
Unknown	–0.004	–0.001	0.000	–0.001
Economic situation				
(Very) difficult	(ref.)	(ref.)	(ref.)	(ref.)
OK	–0.006*	0.000	–0.002	0.001
(Very) good	0.047***	0.002*	–0.008**	0.001
Attitudes towards parenthood				
Child(ren) necessary for fulfilling life	–0.036*	–0.008**	–0.004	–0.005 (*)
Neither/nor	(ref.)	(ref.)	(ref.)	(ref.)
Child(ren) not necessary	0.009	0.001	0.000	0.001
Type of housing				
Own accommodation	(ref.)	(ref.)	(ref.)	(ref.)
Tenant or subtenant, paying rent	0.007	–0.006	0.008	–0.009 (*)
Rent-free accommodation	–0.001	–0.003	–0.001	–0.003
Other	0.004	0.001	0.004	0.001
Childbearing depending on housing conditions				
Not at all	(ref.)	(ref.)	(ref.)	(ref.)
A little	–0.001	–0.002	–0.007	0.000
Quite a lot or a great deal	0.003	–0.004	–0.008*	0.001
Intention to move				
No	(ref.)	(ref.)	(ref.)	(ref.)
Yes	–0.011**	0.006**	0.004	0.011**
N total (n smaller group)	2,127 (916)	2,127 (345)	916 (176)	1,211 (169)

Notes: These results were obtained after 1,000 replications per analysis with the tool provided by Jann (2006) following the method suggested by Fairlie (2005). The order of variables entering the analyses was randomly decided. The base model used for decomposition refers to the respective total sample (i.e. the pooled sample, the Austrian sample, or the Hungarian sample). (*) $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: Generations and Gender Survey wave 1 and wave 2; panel respondents intending a child within three years in wave 1.

DISCUSSION

The present paper analyzed the role of regional context for the realization of short-term fertility intentions in Austria and Hungary, focusing on differences between capitals (Vienna and Budapest) and other regions of Austria and Hungary. Although research has repeatedly demonstrated regional variation and rural-urban differences in fertility, this issue has been rarely addressed before in the realm of realizing these fertility intentions (Mencarini et al., 2015; Riederer and Buber-Ennsner, 2019). Taken together, our findings demonstrate the relevance of capitals in this respect.

Firstly, realization was lower in capitals than in other regions of the countries – in particular in Austria, where findings were also clearly confirmed in regression models. Secondly, differences in socio-demographic and economic characteristics between capitals and other regions partly explain differences in realization. For instance, decomposition analyses revealed that the share of singles and persons in LAT relationships, or the share of households in good economic situations affect the realization of childbearing intentions. This is in line with proposed theoretical arguments linked to the differential population composition of cities (Kravdal, 1996; Kulu and Vikat, 2007). On the other hand, our analyses suggest that population composition alone cannot explain regional differences in realization probabilities. Other factors also matter. This refers particularly to the revealed differences in effects of socio-demographic variables, but also to unobserved factors (e.g. characteristics of the regional context).

In addition to our findings on the role of capitals and the composition of the population of those intending to have a child, several other results prove to be relevant. Thirdly, our finding that Hungarians realized their short-term intentions less often than Austrians adds to empirical evidence showing that post-communist societies have lower realization rates than Western countries (Spéder and Kapitány, 2014). Fourthly, our study confirms previous insights on the role of individual characteristics, like age, partnership status, parity or education on the realization of short-term fertility intentions (e.g. Kapitány and Spéder, 2012; Morgan and Rackin, 2010; Régnier-Loilier and Vignoli, 2011; Szalma and Takács, 2015). In addition, we showed that strong attitudes about parenthood differ between the two neighboring countries (Panova and Buber-Ennsner, 2016). These prove not only to be crucial for fertility intentions but also for their realization.

Finally, apart from various socio-economic characteristics, housing matters for the realization of short-term fertility intentions. Our findings support the relevance of home ownership (Hegedüs and Teller, 2007; Murinkó, 2019) and its importance in family formation in Hungary, where tenants realized their plans less often than home-owners. Furthermore, housing conditions contributed to lower realization rates in capitals than in other regions, referring to a higher share of tenants in Budapest than in other Hungarian regions, as well as to a larger share of those reporting housing conditions to restrict childbearing in Vienna than in other parts of Austria. In sum, our hypotheses on regional differences have been largely confirmed.

Our study extended prior research in important ways, but had a number of limitations as well. Firstly, certain aspects which might also affect the realization of fertility intentions could not be included due to the unavailability of data and/or an operationalization not suitable for our purpose in the GGS. In particular, data do not include further fertility-relevant information on housing conditions (e.g. costs of housing, size of dwelling), and do also not allow to identify changes of residence between waves. Secondly, small sample sizes restricted possibilities for analysis. For instance, we could neither conduct separate estimations for persons with and without a partner or by parity, nor could we further differentiate between suburbs as residential contexts (Kulu and Boyle, 2009). Data unavailability and small sample sizes also impeded analysis considering formal and informal childcare (Vignoli et al., 2013; Aassve et al., 2012), changes in partnership status, or moves from capital to rural areas and vice versa.

Thirdly, although the GGS is an international program, pre-filters and response categories varied between the participating countries. It has been shown that these issues can affect cross-country comparability, for instance, regarding the intended family size (Beaujouan, 2013). The questions regarding fertility intentions were not identical in the Hungarian and the Austrian GGS, a limitation of the present paper that we are aware of. In addition, we are not able to take into account certainty and uncertainty of fertility intentions (Ní Bhrolcháin and Beaujouan, 2011), as the degree of intention was not specified in Hungary. Finally, data for Austria and Hungary were collected in different calendar years, possibly implying period effects.¹⁵

¹⁵ Readers may be particularly concerned of the economic turmoil of 2008, as economic insecurity may have affected childbearing intentions. However, data collection in Hungary was finished in 2008. It is thus unlikely that the economic recession affected realization between 2004 and 2008. In Austria, on the other hand, data collection started after 2008. Effects of the financial crisis may primarily have reduced reported short-term intentions in 2009 rather than their realization until 2013.

Future studies with richer data are needed to extend the analysis of regional differences. Nevertheless, our study revealed valuable insights on the realization of short-term fertility intentions with regards to differences between and within countries. We conclude that (a) men and women planning to have a child in the near future realized their plans more often in Austria than in Hungary, that (b) living in the capital or in other areas matters for the realization of fertility intentions, and that (c) regional aspects like population composition or housing conditions deserve keen attention in the research on fertility differentials.

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APPENDIX

Table A1: Sample characteristics of respondents intending a child at wave 1 at the country level, Austria 2009, Hungary 2004, %

	Austria	Hungary	Pooled sample
Region			
Capital	19	14	16
Other regions	81	86	84
Country			
Austria	100		44
Hungary		100	56
Sex			
Male	45	48	47
Female	55	52	53
Age			
21–24 years	10	13	12
25–34 years	60	67	64
35–45 years	30	20	24
Partnership status			
Married	36	42	39
Cohabiting	30	24	27
LAT	18	10	13
No partner	16	24	21
Parenthood/parity			
Childless	57	60	58
1 child	27	2	13
2 children	11	26	19
3 or more children	5	13	9
Education			
Primary or secondary	75	47	59
Tertiary education	21	25	23
Unknown	4	28	17
Economic situation			
(Very) difficult	23	49	37
OK	34	46	41
(Very) good	43	5	22

Table A1: Sample characteristics of respondents intending a child at wave 1 at the country level, Austria 2009, Hungary 2004, % (continued)

	Austria	Hungary	Pooled sample
Attitudes towards parenthood			
Child(ren) necessary for a fulfilling life	28	84	60
Neither/hor	25	11	17
Child(ren) not necessary	47	6	24
Type of housing			
Own accommodation	49	75	64
Tenant or subtenant, paying rent	43	8	23
Rent-free accommodation	7	10	9
Other	1	7	4
Childbearing depending on housing conditions			
Not at all	48	42	45
A little	26	22	24
Quite a lot or a great deal	26	36	31
Intention to move			
No	64	43	52
Yes	36	57	48
Total (N)	943	1,216	2,159

Source: Generations and Gender Survey wave 1; panel respondents intending a child within three years in wave 1.

Table A2: Sample characteristics of respondents intending a child at wave 1 at the regional level, Austria 2009, Hungary 2004, %

	Vienna	Other regions of Austria	Budapest	Other regions of Hungary
Sex				
Male	46	44	42	49
Female	54	56	58	51
Age				
21–24 years	9	10	9	13
25–34 years	55	61	70	67
35–45 years	36	29	21	20
Partnership status				
Married	33	36	33	43
Cohabiting	32	30	24	24
LAT	18	18	15	9
No partner	17	16	28	23

Table A2: Sample characteristics of respondents intending a child at wave 1 at the regional level, Austria 2009, Hungary 2004, % (continued)

	Vienna	Other regions of Austria	Budapest	Other regions of Hungary
Parenthood/parity				
Childless	64	55	69	58
1 child	27	28	2	2
2 children	6	12	19	27
3 or more children	3	5	11	13
Education				
Primary or secondary	66	78	24	50
Tertiary education	29	19	49	22
Unknown	5	3	26	28
Economic situation				
(Very) difficult	29	21	42	50
OK	32	34	49	45
(Very) good	39	45	8	5
Attitudes towards parenthood				
Child(ren) necessary for a fulfilling life	24	29	82	84
Neither/nor	23	28	12	10
Child(ren) not necessary	53	46	6	6
Type of housing				
Own accommodation	21	56	74	75
Tenant or subtenant, paying rent	77	35	16	7
Rent-free accommodation	1	9	4	10
Other	1	1	6	7
Childbearing depending on housing conditions				
Not at all	32	52	29	44
A little	35	23	24	22
Quite a lot or a great deal	33	24	46	34
Intention to move				
No	53	67	34	45
Yes	47	33	66	55
Total (N)	183	760	170	1,046

Source: Generations and Gender Survey wave 1; panel respondents intending a child within three years in wave 1.