
MALE FERTILITY IN THE CZECH REPUBLIC – FIRST EMPIRICAL EVIDENCE^{*) †)}

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ABSTRACT

The present article tackles new empirical evidence in the study of male reproductive behaviour in the Czech Republic. It builds on a previously published theoretical and methodological overview on the chosen topic. We will try to answer the following questions: (1) What is the completed male fertility level and what preferences do men have regarding family size? (2) What are the determinants of male fertility? For this purpose, we use data from an ad-hoc survey conducted in 2011 on a representative sample of men aged 40–55. The results are presented in a comparative perspective – male/female indicators. The article includes a description of the main demographic indicators of fertility with a subchapter on the measurement of fertility ideals and preferences. Further on, we present some of the covariates which determine the final level of male fertility and the ideal number of children at both individual and societal levels. Some of the findings point to the lack of data from official statistics necessary to calculate the main indicators of male fertility. However, these deficiencies are partially removed by the results obtained from the analysis run on survey data.

Keywords: male fertility behaviour, completed fertility rates, ideal number of children, fertility determinants

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1. INTRODUCTION

The international and Czech literature examining the causes of low fertility has identified a number of factors as lying behind this demographic phenomenon. Until recently, these were usually extracted from data generated by research on female fertility. Men themselves were rarely the subject of study, or even mentioned, and, if they were, it was usually in connection with male contraception and family planning – and very often in the context of the less developed countries.

This situation began to change in the second half of the 1990s, since which time the issues of male reproductive behaviour and male fertility have gradually, and rightly, been coming into focus of international experts in the area of population studies – see e.g. *Goldschneider – Kaufman*, 1996; *Sonenstein et al.*, 1997; *Green – Biddlecom*, 2000; *Bledsoe – Lerner – Guyer*, 2000; *Toulemon*, 2001; *Tölke – Diewald*, 2003; *Rotkirch – Basten*, 2010; and *Zhang*, 2011. The reason behind this is obvious: reproduction and fertility result from behavioural

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interaction between a man and a woman and researchers seeking to comprehend this interaction and to be able to model (and possibly predict) reproduction should not ignore one of the elements of this interaction.

This research initiative has also found reflection in the Czech environment. Thanks to an overview paper by *Rabušic and Chromková Manea* (2011) – the first of its kind in the Czech Republic – certain contextual attributes of male fertility studies have been introduced into the discourse of Czech population studies. However, what needs yet to be addressed are the reasons why male fertility has hitherto rarely been discussed in analyses of reproduction, and a clarification of which indicators of male reproduction are available and which, on the contrary, are not.

The aim of this article is to build on the fore-mentioned paper and to present the first empirical findings about male fertility in the Czech Republic. We concern ourselves with the following research questions: (1) What is the completed male fertility level and what preferences do men have regarding family size? (2) What are the determinants of male fertility? Where data are available and where

it makes sense, a comparison will be drawn between men and women.

2. METHOD

If we want to gain insight into male fertility, we should compare its patterns with those of female fertility. The problem here is that we cannot generate the same indicators for men as we can for women from Czech statistical data. Births reports, which form the basis for fertility statistics, do not provide full information on all fathers – they are limited to data on fathers of children born within marriage, with data on men whose child was conceived and born out of wedlock often missing.²⁾ Data are therefore not available on the total number of children born to men or on their age distribution. These gaps in statistical recording make it impossible, for example, to compare male and female age-specific fertility rates or to compare completed fertility and out-of-wedlock fertility rates in the male and female populations.³⁾ Where it is not possible to rely on official statistics, relevant data must be obtained from quantitative surveys.

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- 2) Part of the children conceived before marriage (out of wedlock) is legitimised later by marriage (the so-called premarital conception). However, Zeman (2007: 20) points out that during the communist period most of births out of wedlock were first-order births, while nowadays a considerable portion of births outside marriage are second-order births, which may indicate the existence of functional cohabiting relationships replacing marriage, and not only premarital cohabitation with mostly first-order births, which were later legitimised by marriage.
 - 3) Since 2007, the situation has somewhat improved as to the availability of data on fathers. Records concerning children of single, divorced and widowed women have been expanded to also include analysis of the data on fathers. The problem, though, is that these data on fathers is submitted, on a voluntary basis, by the mothers of the children. From the statistical point of view, such data are likely to be incomplete. Analysis of the 2011 data shows that: ‘The highest proportion of births with no father information provided was among third-born children and children born of higher birth order. In 2011, these children accounted for 12.9% of the total number of births, and for 34.8% of children born out of wedlock. The lowest proportion of children with no father information provided out of all live births of the given birth order was among second-born children – 6.0% in 2011. In the group of children born out of wedlock, the relatively lowest proportion of children with missing father data was found among first-born children (20.0% in 2011). The proportion of children with no information on the father declines with increasing education of the mother. These children accounted for 37.3% of all children born to women with primary school education, but only 2.5% of children born to university-educated mothers. The proportion of children with no father information given also declines with the increasing age of the mother. In the group of children born to women below the age of 20 father information was missing in the case of almost every other child in 2011 (49.1%), compared to only 4.7% in the group of children born to women aged 30–34 and 7.2% in the group of children whose mother was 35 years old or older at the time of the birth (Vývoj, 2011: 20–21).’

We will seek answers to our questions by drawing on data from a representative quantitative survey for the male population aged 40–55 (see Table 5 in appendix for the sample characteristics).⁴⁾ The survey was conducted in the second half of the year 2011. Using a random sample method and a standardised questionnaire, interviewers from the *Median* agency, which carried out the data collection, interviewed men between 40 and 55 years of age, which is the age relevant to our research interests. Men in this age bracket represented the sample unit. If the man lived in a household with a female partner, whether married or cohabiting, the woman was also interviewed (using a specific questionnaire for women). In this way, data was obtained from 800 couples: as mentioned above, men were aged 40–55 years; the age range of their partners was broader. If the man lived alone, data was collected from him only – there were 450 such cases. If random sampling brought the interviewer into a household of a woman living without a male partner and aged 40–55 years, the woman was interviewed based on the questionnaire version for women. The number of these female respondents was restricted to 450. In total, information was obtained from 2,500 respondents (1,600 men and women in couples, 450 men without a spouse/partner and 450 women without a spouse/partner). For the purposes of this paper, we will largely work with the subsample of men and women aged 40+.

3. RESULTS

3.1. Completed fertility

Let us now examine male reproductive behaviour on the basis of the data collected in the special sociological survey referred to above, titled ‘Male Reproductive Behaviour’ and conducted at the end of 2011. These data provide insight into the completed

male fertility level, and moreover, into the attitudes of men concerning the number of children, conception intentions and other characteristics that affect fertility.

A standard indicator of fertility levels is the completed fertility rate. In Czech demographic statistics, the completed fertility rate is not calculated for the male population, and thus is also not published. Our survey data make this calculation possible, as it might be assumed that our male respondents, aged 40–55 years, have for the most part completed their reproduction and are rarely likely to become fathers at this age. The number of children reported by the male respondents in the survey could be interpreted as their completed number of children.⁵⁾ However, as the male reproductive cycle is not limited by a fixed age ceiling, and given the age range of the male respondents’ partners (see the paragraph below), a supplementary question was included in the questionnaire asking whether the respondent was still considering having a child in the future and how many. We could then calculate the hypothetical completed fertility rate as the total number of children the respondent already had (and had had) and the number of children he would still like to have.

The age distribution of the female part of our sample used for comparison with males differs from that of their male counterparts and ranges between 20 and 65 years. As a quarter of the females in the sample were aged 20–40 years, it could be assumed that their reproductive cycle was not finished yet. We therefore performed calculations of the completed fertility level (in the case of women aged over 40 years), as well as the hypothetical completed fertility level of women.

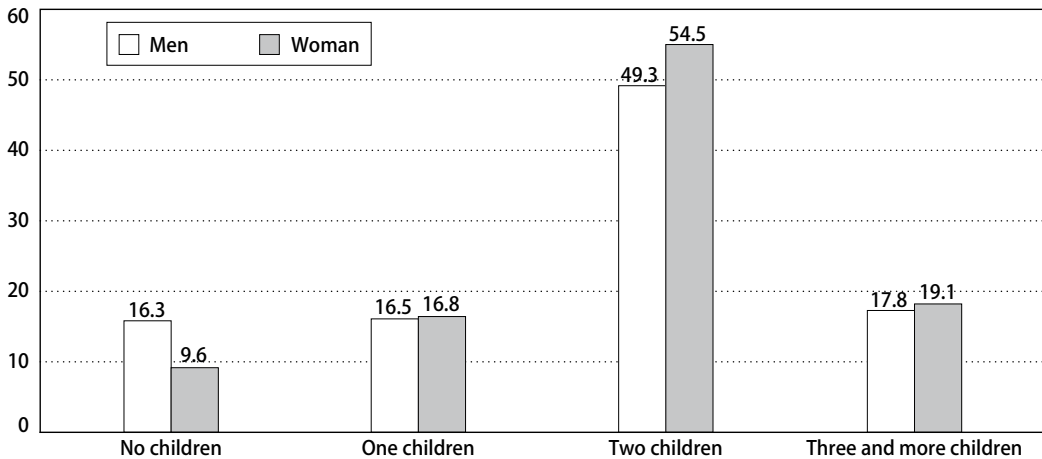
Figure 1 presents the structure of male or female respondents aged 40 and over according to the number of children they have. It shows that childlessness was more common among men than among women.⁶⁾ The proportion of men and women who had one child was the same (17%). Two was the most frequent

4) We required the sample to be representative for the Czech male population aged 40–55. Stratified random sampling was carried out in several steps by Median agency. The primary sampling units were determined on the basis of representativeness of the size of residence and county. Sampling frame was based on all address in the Czech Republic, where strata were made up of all geographic territorial units (size of residence and county).

5) All children reported by the male respondents, including adopted children, stepchildren and deceased children were considered in our analyses.

6) The difference is statistically significant at the 0.01 level (according to a t-test).

Figure 1 Percentage distribution of respondents aged 40+ regardless of family status according to the number of children they have (N=2321)



Source: Data set *Male Reproductive Behaviour 2011*; authors' calculations.

number of children both among men and women. The proportion of women who had two children was higher than that of men, the percentages being 55% and 49%, respectively.⁷⁾

These findings are not particularly surprising. An even higher proportion of childless men than childless women might have been expected considering that the first marriage rate is lower for men than it is for women and, at the same time, the remarriage rate among divorced men and women is about the same.⁸⁾ The statistically significant higher proportion of childless men than childless women is also confirmed by data from another survey we conducted in 2005 (unpublished results).⁹⁾ In this survey, 27% of men compared to only 10% of women in the 35–39 age group were childless; 20% of men had one child (24% of women), 42% of men had two children (52% of women), and 11% of men had three children (14% of women). Given that the respondents were born

in the period 1965–1985, they constitute one of the first generations whose reproductive period falls, more or less, under the new demographic regime. The data above indicated that the total fertility rate of Czech women would not be particularly staggering in 5–6 years' time, that is in 2010–2011.¹⁰⁾

Data from our survey thus indicate the following pattern: men are childless statistically significantly more often than women, and women have two children statistically significantly more often than men. Men and women who have one child do not statistically differ, and neither do those who have three or more children (according to T-test results).

However, men and women basically do not differ as regards the total average number of children, as shown in Table 1 (the row 'completed fertility rate'). On average, men had 1.75 children and women had 1.84 children. In the light of the divorce and remarriage rates (but bearing in mind that the remarriage

7) The difference is statistically significant at the 0.05 level.

8) Total male first marriage rate based on first-nuptiality tables was 53.5% in 2011, while the female rate was 61% in 2011 (data from *Demografická ročenka ČR 2011*).

9) This sociological survey was called 'Marriage, Work and Family' and the data were collected from a representative sample of Czech women aged 20–40 and their male partners (N = 2,456 respondents) in 2005. *Unpublished*.

10) Indeed, the total fertility rate was 1.49 in 2010 and 1.43 in 2011.

rates for divorced men and women are similar), we expected men to have higher completed fertility rates, as they marry younger female partners with whom have higher chances to have additional children and have a higher average number of children than women.^{11), 12)} Our expectation was not fulfilled, but partially confirmed the results obtained by *Pakosta* (2008), who found, on the one hand, that divorcing before childbearing in the case of women increases the likelihood that women give birth to only one child, and, on the other hand, a large proportion of women who divorced after having a child(ren) and remarry then plan to have/have another child (they attempt to fulfill their desired number of children not reached in the previous marriage), which is reflected in a higher completed fertility rate for remarried women compared with women who never divorced.

If men aged 40–47 have been realised their expected fertility (see Table 1), the level of completed fertility would obviously have increased slightly, but not enough to reach and outdo the rates for women.

Yet another finding can be drawn from Table 1. The average number of children in the group of male respondents aged 48–55 years is higher than

the average figures in the 40–47 age group, which suggests that men have children even around the age of fifty. The average number of children in the group of women aged 48 years and over is also higher than in the 40–47 age group.¹³⁾ This might be due to the higher completed fertility rate of older cohorts, which had children in the 1970s. This is valid for men too (see *Rychtaříková*, 2004).

No differences could be found between the groups regarding the hypothetical completed fertility rate either (see Table 1), with a level of 1.83 children for men and 1.90 for women. The hypothetical completed fertility level is slightly higher than the actual completed fertility rate in the group of men aged 40–47 years, indicating that some men at this age were still planning to have children. As regards women aged 40 years and over, the actual and hypothetical completed fertility do not de facto differ. Hence, the surveyed generation of women were not planning to have children with their spouses or partners past the age of 40.

These findings do not point to any substantial differences in the reproductive behaviour of men and women who, for the most part, fulfilled their fertility aspirations in the period of so-called ‘Czech

Table 1 Actual and hypothetical completed fertility by sex and age groups (respondents aged 40+)

	Males total (N=1,251)	Age 40–47 (N=613)	Age 48–55 (N=619)
Completed fertility rate (CFR)	1.75	1.65	1.85
Hypothetical completed fertility rate (HCFR)	1.83	1.80	1.86
	Females total (N=1,070)	Age 40–47 (N=585)	Age 48+ (N=507)
Completed fertility rate (CFR)	1.84	1.82	1.94
Hypothetical completed fertility rate (HCFR)	1.90	1.88	1.94

Source: Data set Male Reproductive Behaviour 2011; authors' calculations.

- 11) We also take into account conclusions by e.g. *Bumpass* (1984) and *Loomis and Landale* (1994) who claim that previous parity may play an important role in the woman's subsequent fertility behaviour, since it may reduce the probability of the woman conceiving another child if she already has two or more children from a previous relationship.
- 12) Divorced men who remarry are in most of the cases older than their female partners. For example, in 2011 20% of all remarried men were on average 10–14 years older than their female partners (and about 20% of them 7–9 years older than women). On the other hand, 17% of all women who remarried were on average one year older than their husbands (and about the same proportion were 5–6 years older) – data from *Demografická ročenka ČR 2011*.
- 13) One would think that the number of stepchildren might influence the level of the completed fertility rate. However, only 2.7% of all women aged 40+ are stepmothers, while 7% of all men in our sample have step-children.

socialism'. Although it might therefore seem that it is not necessary to concern ourselves with the issue of male reproductive behaviour, we would not agree with such a conclusion. We are convinced that these analyses are meaningful – at the very least because we now know more about male fertility than we did before conducting our survey. The small differences found could be attributed to a cohort effect, since we surveyed the generation of respondents born in the period 1956–1971 whose reproductive patterns were rooted in the conditions of the old (that is socialist) demographic regime, with all its peculiarities.¹⁴ If we continue to study male reproduction and if we examine different cohorts, we can expect to witness very interesting diachronic developments brought about by the differentiation and individualisation of lifestyles of subsequent generations.

3.2 Family size preferences – the ideal and reality

In their pursuit to understand fertility rates, researchers increasingly believe that it is necessary to also explore individual preferences, motivations and intentions, as these are important predictors affecting, at the individual level (and also in the aggregate form of the total fertility rate), the final number of children men and women have. Preferences, motivations and intentions are part of a person's individual social and psychological profile, but they are also contextdependent – e.g. related to a person's situation in terms of economic circumstances or success in the marriage/mating market, affected by social norms (and stereotypes) and so on.

Demographers and sociologists have therefore introduced further indicators, which help reveal various aspects of fertility and reproductive behaviour: the ideal number of children, the preferred number of children, the intended/expected number of children and the desired number of children, in order to pinpoint the mechanisms that ultimately determine the final number of children men and women have. *Miller and Pasta* (1995a, 1995b) and *Miller* (1994) claim, for example, that the desired and intended number of children are key concepts for understand-

ing, and therefore also for predicting, fertility rates and family size. They uphold the opinion that a distinction needs to be made between desires/preferences and intentions: desires/preferences are an expression of what people want to do, while intentions refer to what people plan to do. Desires/preferences are underlined by attitudes, beliefs and motivations. Consequently, they propose that distinct indicators should be constructed for each of these categories.

In our survey, we used the variable 'ideal number of children'. As is generally known, what this variable actually measures sensitively depends on how the question is formulated and phrased. It may indeed be formulated at the individual level (the number of children the respondent would desire to have under ideal life conditions) or at a general societal level (the ideal number of children in general). Multiple surveys have shown what we suspected, that the reported ideal number of children at a general level is higher on average than the reported ideal number at the individual level. In addition, it has repeatedly been shown that there exists a distinction between the ideal number of children, the intended number of children and the actual number of children. *Van Peer* (2002) and *van Peer and Rabušić* (2008) have confirmed that the individual norm governing the number of children is set lower than the general norm and that the actual (realised) fertility level is below what is considered ideal at the individual level.

Let us now examine our survey findings on male reproductive fertility from the point of view of the ideal number of children. The questionnaire asked about the ideal number of children at both the individual and the general societal level. The ideal number of children at the individual level was assessed using the question: 'If circumstances in your life were entirely favourable how many children would you like to have in total?' The ideal number of children at the general societal level was measured using the question: 'What do you think is the ideal number of children in a family?' These questions were asked separately from each other during the interview to avoid the so-called 'halo effect', whereby an answer

14) As regards the family, it means the discourse establishing the family as the basis of the state and the social pressure on people to have children.

Table 2 Percentage distribution of respondents according to the ideal and the actual number of children (all respondents – N=2,500)

Number of children (% Col)	Social ideal		Individual ideal		Actual number of children	
	Males	Females	Males	Females	Males	Females
No child	1.6	0.5	3.3	0.9	16.3	10.7
1 child	13.4	9.2	14.5	9.9	16.5	18.0
2 children	69.9	73.9	58.2	61.9	49.3	53.1
3+ children	15.0	16.3	24.0	27.2	17.8	18.2
Average number of children	2.00	2.07	2.10	2.22	1.69	1.79

Source: Data set *Male Reproductive Behaviour 2011*; authors' calculations.

Note: The societal ideal was indicated by the question: 'What do you think is the ideal number of children in a family?' The individual ideal was indicated by the question: 'And if circumstances in your life were entirely favourable how many children would you like to have in total?'

to one question influences the answer to the following question. The resulting percentage distribution of respondents according to number of children and fertility averages for each indicator are presented in Table 2.

It has again been confirmed that the perceived individual and the societal ideal concerning the number of children are on average higher than the actual average number of children (see the last row in Table 2). The disparity between the two ideal numbers and the reality is particularly marked in the case of childlessness. Being childless is almost never seen as an ideal (the value ranges between 1% and 3%), while the reality is many times higher (16% in the case of men and 11% in the case of women). The one-child ideal points to interesting results: while it is viewed as a societal and individual ideal by 13% and 15% of men, respectively, and by 9% and 10% of women, respectively, the reality is different, particularly in the case of women: 18% of women stopped at one child, which is almost double the ideal number, and so did 17% of men – here the ideal only slightly differs from the reality. This finding further confirms our prognosis, formulated in 2007, that the proportion of women with only one child (that is their final number of children) will stand at about 20–25% around the years 2020–2025 (for more details see *Rabušic – Chromková Manea* (2007), where arguments supporting this prognosis are presented).

Considerable differences can also be seen in the case of the two-child model. Two children are largely regarded – by 70% of men and 74% of women

– as a general societal ideal (that is as an ideal number of children in a family). At the individual level, the preference for two children is much weaker: expressed by 58% of men and 62% of women. The reality is quite different, even below the level of individual preferences: 49% of men and 53% of women ultimately had two children (the difference between the proportions of the actual and the ideal number of children is statistically significant).

Variations between the real number of children and the ideal number of children at both the individual and the societal level are also found for the model 3+ children. This model is chosen to be ideal at the individual level by 24% of all men, respectively 27% of women, while only 15% of all men and 16% of all women consider it to be ideal at the general social level. On the other hand, only approximately 18% of men and women have 3 or more children.

As Table 2 shows, in many cases the real number of children is lower than the ideal, desired number. There is a variety of reasons why the declared ideal numbers concerning family size differ from the actual family size: postponing marriage or partnership (and hence conception) until a later age, career as a life priority, economic circumstances, the health condition of one or both partners, and divorce. Also, conflicting preferences between the spouses (partners) concerning the number of children may play a role.¹⁵⁾ Last but not least, the Czech social climate that 'prefers' the two-child model might put some pressure on those who prefer more than two children.

15) For details on couple dynamics and its impact on fertility, see *Chromková Manea – Fučík*, 2007.

3.3. Variables in the context of male fertility

What are the characteristics men possess that determine their completed fertility rate, on the one hand, and their views of the ideal number of children, on the other hand? Since our study is essentially an exploratory analysis – inasmuch as the research topic is new – we do not test any deductively derived hypotheses and we will begin with a simple bivariate description. We will ask to what extent the basic characteristics of age, family status, education and level of religiosity influence the variability of the dependent variables – completed fertility rate, the ideal number of children at the individual level and the ideal number of children at the general societal level. Inspired by *Catherine Hakim's* (2000) preference theory, we have added a synthetic indicator measuring preferences for work and family, which should be a significant covariate of fertility behaviour.¹⁶⁾

The results of bivariate analysis including the correlation coefficients presented in Table 3 (see the columns referring to male respondents) show that the impact of the selected characteristics of the male respondents (except age, all are in the form of categorical variables) on their completed fertility rates, and the perceived ideal number of children at the individual, as well as the general societal level, is for the most part very weak or none at all. Older male respondents have on average a higher completed fertility rate than younger ones, as well as a higher ideal number of children at the individual and societal levels. Nevertheless, certain categories of independent variables did show some correlation. This applies to family status, where those male respondents who were single had a significantly lower completed fertility rate than the others (having on average 0.29 children). The ideal number of children for single men was also considerably lower in comparison with the other family status categories for men. Clearly, this is also true for education, where a downward linear trend is apparent in Table 3, where the highest completed fertility rate as well as the ideal number of children, regardless of the level of measurement, is found among men with primary education, whereas at the opposite pole are men with university

education, who have on average the lowest completed fertility rate and ideal number of children. Indeed, the Kendall's Tau coefficient of association between completed education and the completed fertility rate was -0.50 (sig. < 0.05) for men, while between completed education and the ideal number of children at the individual level was -0.45 (sig. = 0.11) for men too. However, the effect of education on views about the ideal number of children is statistically insignificant – except for male respondents with primary school education who differed from the others in terms of the ideal number of children they would like to have, if circumstances were ideal: the average was 2.58, which is the highest value of all the characteristics shown in Table 3. No differences were found – and this is a surprise – in relation to religious beliefs: be it in terms of the male actual number of children (measured as the completed fertility rate) or their perceptions of the ideal number of children. The 'preference theory' variable fulfilled, to some extent, its function as a distinguishing feature for the male population. The work-centred men have – in line with Hakim's theory – a significantly lower completed fertility rate as compared to other preference typology categories. Work-centred men also stated the lowest values when answering the questions about the ideal number of children at both the individual and societal levels. As for the measurement of association between preference typology and the dependent variables (real and ideal number of children), the levels of association as measured by the Gamma coefficient come close to zero (-0.03) and are statistically insignificant in the case of all the three dependent variables.

The following part of the paper will focus on the results for women (see the columns referring to female respondents in Table 3). As was the case with men, women of a younger age (40–47 years) have a lower completed fertility rate and ideal number of children than older age category. And similarly to their male counterparts, single female respondents showed lower values than respondents in the other family status categories in terms of their completed fertility rate (on average 0.39 children) and perceptions of the ideal number of children (on average 1.68

16) As regards the family, it means the discourse establishing the family as the basis of the state and the social pressure on people to have children.

Table 3 Average number of children (completed fertility rate), average ideal number of children at the individual level and average ideal number of children at the general societal level by selected characteristics, coefficients of association – males aged 40–55, females aged 40+, in 2011 (N=1,251 for males, N=1,070 for females)

	Completed fertility rate		Ideal number of children at the individual level		Ideal number of children at the general societal level	
	Males	Females	Males	Females	Males	Females
Age group						
Pearson coefficient (sig. level)¹⁷⁾	0.112 (sig.<0.00)	0.078 (sig.<0.01)	0.083 (sig.<0.00)	0.081 (sig.<0.01)	0.098 (sig.<0.00)	0.084 (sig.<0.01)
40–47	1.65	1.82	2.09	2.22	1.99	2.10
48+	1.85	1.94	2.11	2.33	2.09	2.14
Family status						
Eta coefficient (sig. level)	0.530	0.403	0.294	0.156	0.259	0.201
Married	1.98	2.01	2.22	2.31	2.08	2.15
Widowed	1.91	2.06	2.25	2.32	2.13	2.14
Divorced	1.87	1.84	2.16	2.30	2.04	2.09
Single	0.29	0.39	1.41	1.68	1.65	1.77
Completed education						
Kendall tau coefficient (sig. level)	-0.500 (sig.<0.05)	-0.114 (sig.<0.00)	-0.450 (sig.<0.11)	-0.179 (sig.<0.00)	-0.004 (sig.<0.89)	-0.115 (sig.<0.00)
Primary	2.23	2.54	2.58	3.03	2.13	2.30
Lower secondary / vocational	1.78	1.93	2.19	2.35	2.03	2.19
Upper secondary	1.74	1.84	2.11	2.20	2.04	2.08
University	1.59	1.64	2.10	2.09	2.05	2.04
Religious belief						
Eta coefficient (sig. level)	0.050	0.102	0.132	0.172	0.123	0.169
Religious person	1.85	2.03	2.34	2.49	2.16	2.27
Not a religious person	1.72	1.82	2.10	2.17	2.00	2.06
Preference typology¹⁸⁾						
Gamma coefficient (sig. level)	-0.030 (sig.<0.49)	0.205 (sig.<0.00)	-0.038 (sig.<0.43)	0.143 (sig.<0.05)	0.025 (sig.<0.64)	0.140 (sig.<0.01)
Work-centred	1.34	1.20	1.74	1.81	1.77	1.85
Adaptive	2.01	1.88	2.28	2.22	2.09	2.09
Family-centred	2.06	2.11	2.25	2.37	2.15	2.19
Inconsistent (ambivalent)	1.43	1.68	1.85	2.04	1.73	1.93

Source: Data set *Male Reproductive Behaviour 2011*; authors' calculations.

Note: The level of religiousness was assessed using the question: 'Irrespective of whether you go to church or not, would you say you are a religious person, not a religious person or a convinced atheist?'

and 1.77, respectively). Also in the case of female respondents, there are differences between women with different levels of completed education, where primary educated women have on average the highest completed fertility level (on average 2.54 children)

and the highest ideal number of children at both the individual and societal levels (the highest value is observed for the ideal number of children at individual level, where women with primary education reported on average 3 children). Female respondents

17) To find the bivariate correlation between age and the three dependent variables, we used 'age' measured at the interval level.

with higher education levels did not significantly differ. However, the value of the association coefficient between completed education and the completed fertility rate is much weaker for women than it is for men (Kendall's Tau for females = -0.11, sig. 0.00). Similarly to men, female respondents who considered themselves religious did not differ from those who did not, in terms of their completed number of children. However, if conditions were ideal, religious women would desire to have more children than women who are not religious (2.49 : 2.17; the t-test showed, however, that this difference is not statistically significant). The typology based on the preference theory showed a more pronounced effect in the case of women than it did in the case of men: work-centred women had a much lower completed fertility rate (1.20) than any other category, while women oriented towards family had on average the highest level of completed fertility rate (2.11). It is worth mentioning that adaptive and family-centred women are quite close in their preferences for the ideal number of children at both the individual and societal levels.

Further on, the variables in Table 3 were put into a multiple linear regression analysis to find out the net effects of predictor variables (those in rows) to outcome variables (those in columns). The results are presented in Tables 4a and 4b, where the standardised beta coefficients are presented for men and women separately.¹⁹⁾ The outcome (dependent

variables – completed fertility rate, the ideal number of children at the individual level and the ideal number of children at the general societal level – are all measured at the interval level; the predictor (independent) variables other than the interval (continuous) ones, were entered as dummies.

The covariates included in our analysis were as follows:

- Age of respondent – continuous variable, respondents aged 40+
- Marital status – categorical variable, where 1 means married, 2 widowed, 3 cohabiting, 4 single – recorded into 3 dichotomous/dummy variables and using a reference coding scheme with 'single' as the reference.
- Educational level – categorical variable, where 1 means primary education (ISCED level 1 and 2), 2 is lower secondary/vocational education (ISCED 3B and 3C), 3 stands for upper secondary education (with GCSE – ISCED level 3A), and 4 is for completed university/tertiary education (ISCED level 5A, 5B or 6) – recorded into 3 dichotomous/dummies variables and using a reference coding scheme with 'university education' as reference.
- Religion – dichotomous variable coded as 1 'religious' and 2 'not religious'
- Preference typology – categorical variable, where 1 means work-oriented, 2 adaptive, 3 family-oriented and 4 inconsistent – recorded into 3 dichotomous/

18) Categories of the preference typology: work-centred, adaptive, family-centred and inconsistent (ambivalent). These categories were constructed based on two questions: (1) There has been much debate lately about the changing traditional roles of a man and a woman in the family. I will now present to you six models of the family. Which of them corresponds best with your own ideas about an ideal family arrangement? (see appendix – models, first column), and (2) There are many ways in which people can organise their lives in terms of starting a family with children, having a job, pursuing a career and pursuing hobbies. Let me give four examples. Which of them comes closest to your own views? We coded as 'committed to work' those respondents who chose the answer 'Most important for me is work – to this I subordinate my family life as well as hobbies and interests.' Those who answered 'Most important for me is to have a family and children – to this I subordinate my work as well as my hobbies and interests' are coded as 'committed to family'. 'Adaptive' are respondents who answered 'Both family and work are important for me, so I try to reconcile them'. Respondents were also offered a fourth option: 'My interests and hobbies are most important for me, so I prefer them to the family and work'. We recoded these answers as 'committed to work' because quite often personal hobbies and work are correlated, and preferences of hobbies instead of family indicate work orientations (for more information on the preference typology, see *Chromková Manea – Rabušic* – forthcoming in October 2013, in *Crespi, I. – Miller, T. (eds.) 'Family, Care and Work in Europe: Gender Issues'*).

19) We use standardised beta coefficients for interpretation as *b* coefficients are measured in different units and the effects of the various independent variables cannot be compared otherwise.

dummies variables and using a reference coding scheme with ‘inconsistent’ as reference.

The first model for the completed fertility rate has an R^2 of 0.195. This means that the predictor variables explain only 19.5% of the variation in the outcome variable. The p value for the F statistic is lower than 0.05 and it implies that at least one of the independent variables is a significant predictor of the completed fertility rate. Variable age is not a significant determinant of male completed fertility rate. All other variables do play statistically significant role, though. Being married or divorced have the strongest impact relative to the single respondents on the male completed fertility rate when controlling for other variables (0.575 and 0.520, respectively, sig. < 0.00). Religiousness, although statistically significant, has the lowest value for the standardised beta coefficient, which indicates a very weak impact of being religious on our dependent variable.

The second model aimed to determine the covariates having significant impact on the male ideal preferred number of children at the individual level

explains only 9% of the variance (R^2 is 0.087). We learn that the ideal number of children for men does not vary by age when all other variables are controlled for. As in the model for completed fertility rate, indicators for marital status are significant, but the value of the standardised beta coefficients is quite low (close to 0). As for completed education, it seems that primary education have a significant influence on the ideal preferred number of children compared to university education when other covariates are controlled for. However, the beta coefficient is low. The same effect has religiousness. As far as the preference typology is concerned, the results come to confirm that being oriented towards work as compared to being inconsistent (ambivalent) decreases the ideal preferred number of children men would like to have when controlling for the rest of determinants included in the analysis. Being family-centred has no effect in this model, however.

The third model for the ideal preferred number of children at the general societal level has an even lower explanatory power than the previous two

Table 4a Multiple linear regression models for dependent variables completed fertility level, ideal number of children at the individual level and ideal number of children at the general societal level by selected socio-demographic characteristics, standardized beta coef. – male respondents aged 40–55 (N=1,251)

	Completed fertility		Ideal number of children at the individual level		Ideal number of children at the general societal level	
	Beta coef.	Sig.	Beta coef.	Sig.	Beta coef.	Sig.
Age	0.034	0.282	0.016	0.649	0.044	0.217
Family status (ref. cat. Single)						
Married	0.575	0.000	0.197	0.004	0.146	0.028
Widowed	0.173	0.000	0.077	0.042	0.074	0.053
Divorced	0.520	0.000	0.175	0.006	0.156	0.013
Completed education (ref. cat. University)						
Primary	0.156	0.000	0.113	0.002	0.038	0.302
Lower secondary / vocational	0.164	0.001	0.063	0.230	-0.029	0.585
Upper secondary	0.136	0.004	0.050	0.343	0.002	0.969
Religious belief (ref. cat. Not a religious person)						
Religious person	0.068	0.030	0.116	0.000	0.087	0.013
Preference typology (ref. cat. Inconsistent)						
Work-centred	-0.121	0.000	-0.183	0.001	-0.154	0.000
Adaptive	excluded		excluded		excluded	
Family-centred	0.022	0.509	-0.035	0.334	0.047	0.206
Nagelkerke R square	0.195		0.087		0.066	

Source: Data set *Male Reproductive Behaviour 2011*; authors' calculations.

models (R^2 only 0.066). Marital status, religious belief and to some extent preference typology have a significant impact on the dependent variable, but the beta coefficients have a very low value (close to zero).

The next table (see Table 4b) presents the same regression analysis but for female respondents. The results are quite similar to the male ones for the completed fertility rate, where being married or divorced as compared to single increases the chances of having a higher realised fertility rate (beta coefficients above 0.5). As for men, lower levels of completed education for women seem to have a significant impact on female fertility rate when all other variables are controlled for, but the values of beta coefficient are low (close to 0). A similar effect is observed for religiousness. The same pattern can be found for the ideal desired number of children at the individual level, where beta coefficients for marital status, education, religiousness and additionally preference typology are statistically significant, but their value is low (close to 0).

As for the reported ideal number of children at the general societal level, the regression model for

women contains only two variables that are statistically significant, but again the beta coefficients are low: being married (as compared to being single) or being a religious person have a growing impact on the ideal desired number of children when all other variables are controlled for in the equation.

4. FINAL REMARKS AND DISCUSSION

This article presented new empirical data on male reproductive behaviour in the Czech Republic, building on our previously published overview paper on this topic. It examines the completed fertility rates of men and women, as well as their attitudes concerning the number of children, fertility intentions, and other determinants of fertility. As regards completed fertility, we have seen that men remain childless more often than women – this is particularly evident in the case of people living outside of marriage, even when in a stable relationship. Overall, the comparison showed only small differences between male and female fertility:

Table 4b Multiple linear regression models for dependent variables completed fertility level, ideal number of children at the individual level and ideal number of children at the general societal level by selected socio-demographic characteristics, standardised beta coef. – female respondents aged 40–55 (N=1,070)

	Completed fertility		Ideal number of children at the individual level		Ideal number of children at the general societal level	
	Beta coef.	Sig.	Beta coef.	Sig.	Beta coef.	Sig.
Age	-0.005	0.891	0.024	0.500	0.030	0.830
Family status (ref. cat. Single)						
Married	0.636	0.000	0.275	0.000	0.207	0.010
Widowed	0.258	0.000	0.091	0.044	0.056	0.227
Divorced	0.536	0.000	0.207	0.005	0.133	0.080
Completed education (ref. cat. University)						
Primary	0.157	0.000	0.203	0.000	0.054	0.186
Lower secondary / vocational	0.137	0.010	0.128	0.024	0.105	0.072
Upper secondary	0.055	0.303	0.025	0.665	-0.002	0.969
Religious belief (ref. cat. Not a religious person)						
Religious person	0.087	0.008	0.152	0.000	0.143	0.000
Preference typology (ref. cat. Inconsistent)						
Work-centred	-0.104	0.003	-0.070	0.064	-0.067	0.086
Adaptive	excluded		excluded		excluded	
Family-centred	0.063	0.110	0.069	0.061	0.072	0.055
Nagelkerke R square	0.183		0.119		0.070	

Source: Data set Male Reproductive Behaviour 2011; authors' calculations.

women had on average 1.84 children and men had 1.75 children. The number of children perceived to be ideal at the individual level is on average higher than what is perceived to be ideal at the general societal level. In comparing the ideal number of children to the actual number we can see that the ideal is not being lived out in the case of people who are childless or have only one child – there were many more respondents with no or only one child than the expressed ideal would suggest. It follows that the decision not to have a child or to have only one is not necessarily made in advance. By the same token, there were fewer respondents with two children than would be expected given the declared ideal.

We also examined the possible effects of basic socio-demographic characteristics such as the respondent's age, family status, education, and religiousness, as well as the possible impact of a synthetic indicator measuring work and family-related preferences. For the most part, the influence of the independent variables has proven to be very weak or none at all. Single respondents had a markedly lower completed fertility than the others and their subjective ideal number of children was also significantly lower than was the case with the other family status

categories. Religiosity has no effect on either completed fertility or the ideal of the number of children. The indicator 'work and family-related preferences' has revealed some partial effects in the group of work-centred men who have both a lower completed fertility rate and who regard as ideal a smaller number of children. The female sample showed similar results. Our data captures reproductive behaviour of people born between 1956 and 1971 that is in the period of the old, so-called socialist, demographic regime with largely homogenised living conditions. The differentiation of lifestyles of the ensuing generations that we have been witnessing is likely to produce greater variation. This survey is only the first step and will be followed by further research: for example, we intend to analyse the timing of life events in relation to male reproduction. We will also seek to explore the phenomenon described as 'baby fever' in international literature (see e.g. *Rotkirch – Basten*, 2012) to see whether it is present in the Czech population – specifically the male population – and what possible effect it has on the completed male fertility level. We also plan to analyse the role that men have in sexual activities and the use of contraceptives, as this is also an influential attribute of male reproductive behaviour.

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Appendix

Table 5 Main sample distribution

	N – absolute values	% col
Gender		
Male	1,251	50.0
Female	1,249	50.0
Age		
20–39 ²⁰⁾	153	6.1
40–47	1,198	47.9
48+ ²¹⁾	1,142	45.7
Marital status		
Married	1,764	70.6
Widowed	47	1.9
Divorced, separated	420	16.8
Single	245	9.8
Completed education		
Primary	77	3.1
Lower secondary / vocational	970	38.8
Upper secondary	1,110	44.4
University	333	13.3
Size of residence		
up to 2,000 inhabitants	472	18.9
2,000–4,999	412	16.5
5,000–9,999	312	12.5
10,000–19,999	261	10.4
20,000–49,999	264	10.6
50,000–99,999	213	8.5
100,000–499,999	111	4.4
500,000 and more inhabitants	455	18.2

Source: Data set *Male Reproductive Behaviour 2011*; authors' calculations.

20) All respondents in the age group 20–39 are women.

21) Men only up to 55.

Table 6 Typological scheme of lifestyle preferences

	A. Committed to work	B. Adaptive	C. Committed to family
1) A family where the two partners each have an equally demanding job and where housework and the care of the children are shared equally between them	Work-oriented	Adaptive	Adaptive
2) A family where the wife has a less demanding job than her husband and where she does the larger share of housework and caring for the children	Inconsistent	Adaptive	Family-oriented
3) A family where the wife has a more demanding job than her husband and where she does the larger share of housework and caring for the children	Work-oriented	Adaptive	Inconsistent
4) A family where only the husband has a job and the wife runs the home	Inconsistent	Family-oriented	Family-oriented
5) A family where the two partners each have an equally demanding job and where woman does the larger share of housework and caring for the children	Work-oriented	Adaptive	Family-oriented
6) A family where only the husband has a job and where housework and the care of the children are shared equally between them	Inconsistent	Family-oriented	Family-oriented

Source: Data set *Male Reproductive Behaviour 2011*; authors' calculations.