



# Fertility dynamics and reproductive behaviour of men and women entering into marriage in the Republic of Bashkortostan

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Received 23 February 2021 ♦ Accepted 6 June 2021 ♦ Published 30 June 2021

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**Citation:** Skryabina YA (2021) Fertility dynamics and reproductive behaviour of men and women entering into marriage in the Republic of Bashkortostan. *Population and Economics* 5(2): 55-75. <https://doi.org/10.3897/popecon.5.e64858>

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## Abstract

The article is devoted to the analysis of the fertility rate dynamics in the Republic of Bashkortostan and the study of the reproductive behaviour of the population entering into a registered marriage. The author examines the crude and total fertility rates, the net population reproduction rate, the total fertility rate by the order of births, as well as age-specific fertility rates. In addition, basing on the data of population surveys, the author regards reproductive intentions of citizens applying for marriage in the registry office, as well as reasons that may prevent them from having a child. The study shows that the Republic of Bashkortostan is characterized by a low fertility rate; the generation of children does not replace the generation of parents. The reproductive intentions of the respondents measured by the desired and expected number of children correspond to the small (two-child) family model. Among the main reasons that can prevent the birth of a child, the first two are financial and housing difficulties, and third is the desire to live for oneself for a while.

## Keywords

total fertility rate, net reproduction rate, reproductive potential, reproductive behaviour, reproductive intentions, Republic of Bashkortostan

**JEL codes:** J12, J13

## Introduction

The fertility rate is one of the most important criteria for demographic stability. In 1999 the Republic of Bashkortostan registered the historical minimum of fertility rate: the crude

fertility rate was 10.0 per 1000 population. In 2000, the newest stage of decline in the fertility rate began in the Republic of Bashkortostan. Then, in the period from 2007 to 2015 fertility rates showed positive dynamics, but in 2016 the situation changed again. The challenge of low fertility is one of the demographic challenges the Republic of Bashkortostan will be facing in the coming decades.

The observed fertility indicators are formed under the influence of two main groups of factors: the characteristics of the population structure (first of all, the number of women of reproductive age) and the peculiarities of the reproductive behaviour of the population, that is, the decisions that people make regarding the birth of children. If the demographic structure is a condition that cannot be changed in the current moment, reproductive behaviour is an active factor that might be influenced by the state [Skryabina, 2012].

## Purpose and aims of the study

The aim of this study is to identify the key changes taking place in the fertility model, as well as to assess reproductive intentions and reserves for increasing fertility among those getting married in the Republic of Bashkortostan. Significant changes observed in family and marriage behaviour — a decrease in the number of registered marriages, an increase in the number of divorces, widespread unregistered marriages, marriage at a later age, a change of the place of family in the hierarchy of values, an emerging orientation towards having few children — all of this determined the scientific interest of the author to the analysis of fertility processes in the region and to the study of reproductive plans among those entering into marriage.

To achieve the aim of the study, the author set the following tasks:

- to analyze the current trends in fertility in the region;
- to study the reproductive intentions of those entering into marriage;
- to identify the reasons hindering the birth of children, in the opinion of potential parents.

In the text of the article, the author consistently solves the set tasks, and then, in the conclusion, outlines possible directions for the development of demographic policy in order to increase the fertility rate in the republic.

## Theoretical grounds and previous empirical research

The historical process of fertility change is inextricably linked with the socio-economic development of society. By now, there are several concepts that explain fertility changes.

American demographer Frank Notestein, in his *theory of demographic transition*, linked the features of the demographic situation with economic growth and social progress. He believed that the processes of modernization, industrialization, and urbanization lead to a decrease in mortality and a change in the economic role of children, which, in turn, contributes to a decrease in the fertility rate (Vvedenie v demografiyu 2002; Demographic Encyclopedia 2013). Gary Becker, Richard Easterlin, and other scientists proposed the microeconomic concept of fertility, according to which the decision to have children and their number are determined by rational choice, and the decline in fertility is due to the fact that families decide to invest in quality rather than in the number of children (Vvedenie v

demografiyu 2002). Belgian demographer Ron Lesthaeghe and his Dutch colleague Dick Van de Kaa put forward the idea of a second demographic transition: in a post-industrial society, the multiplicity of choice of individual strategies for family formation has expanded due to the development of individual birth control, freedom to choose a marriage partner and forms of life together, as well as the achievements of the contraceptive revolution (Sudoplatov 1974; Korostelev and Kraev 1981). The french sociologist Arsene Dumont developed the concept of 'social capillarity', in which he explained the decline in fertility by the desire of individuals to progress up the social ladder (Korostelev and Kraev 1981; Demographic Encyclopedia 2013).

Each of the concepts is based on the assumption that the decline in fertility is the result of the adoption of new forms of reproductive behaviour, characterized by deliberate actions of spouses to restrict childbearing after a certain number of children have appeared in the family.

A number of published studies concern fertility and the motives of reproductive behaviour in the Republic of Bashkortostan. For example, R.A. Galin examines the features of the reproductive behaviour of the population in modern conditions, analyzes the level and dynamics of the fertility rate of the population of the republic, examines the trends and prospects of reproductive behaviour. The researcher notes that fertility depends on numerous factors, but in the end, it is determined by the reproductive behaviour of the family and the individual woman, and the reproductive behaviour itself is formed by a system of external and internal factors. Galin emphasizes that external factors are determined by the level of development of society, the level of urbanization, the well-being and living conditions of the population, the development of social institutions, and legal norms of the state. They gradually change the reproductive behaviour of the population. Internal factors (motives) shape reproductive behaviour and are determined by the need for children. External and internal factors act in close relationship with each other. The researcher clarifies that when analyzing fertility, it is necessary to investigate and identify the reproductive orientations of the population (Galina 2016).

R.N. Komleva examines reproductive behaviour, dynamics of reproductive attitudes of the population of the Republic of Bashkortostan, motives for having children and reasons for refusing to have births basing on the empirical population survey data. The author shows that in 2015–2019 the average expected number of children in the republic increased from 2.00 to 2.23, while the average desired number of children decreased. Komleva associates such dynamics with a slowdown in the implementation of planned births, as a result of which the number of expected births accumulates, and the ideal and desired indicators decrease. At the same time, survey data record a decrease in the proportion of those who prefer to have three children in a family. The main reasons for postponing births are financial difficulties, poor health, the absence of a spouse, or reasons related to maintaining a job and qualifications (Respublika..., 2020: 38–44).

N.K. Shamsutdinova examines the nature of changes in the fertility rate of the peoples of Bashkortostan and comes to the conclusion that the decline in fertility in Bashkortostan began long before the 1990s, and this process was not the same for different peoples. Thus, the East Slavic peoples switched to an urban lifestyle much earlier, their fertility rate declined smoothly, and they reached lower rates before the socio-economic crisis of the 1990s. Among the Tatars, the process began earlier, and having few children was more typical for them than for the Bashkirs and Chuvash. Shamsutdinova comes to the conclusion that traditional family models are characteristic of certain peoples of the republic, and a significant

part of the population prefers the 'rural' model of fertility and is oriented toward having many children (Shamsutdinova 2017).

R.R. Shayakhmetova, researching the factors of fertility among young people in Bashkortostan on the basis of data of the sociological study *Demographic development of the Republic of Bashkortostan*, also emphasizes that the fertility of the population is associated with a variety of factors that affect a woman's implementation of her reproductive intentions (Shayakhmetova 2011). The researcher believes that the high concentration of women of reproductive age in the cities of the republic (70%) and the high employment of urban women can become a serious factor in restraining the fertility rate, especially that estimated for second births and births of higher orders. According to the results of the survey, the average expected number of children in the republic was 2.2. Shayakhmetova comes to the conclusion that in modern society there is a whole set of factors that restrain the implementation of reproductive intentions, as a result of which the actual fertility rate is much lower than the stated expectations.

Some conclusions of the described studies, in the opinion of the author of this article, are controversial and require further examination. In modern conditions, not only is the importance of assessing the fertility rate and monitoring its dynamics increasing, but so is the search for new methodological approaches in the study of the reproductive behaviour of the population. The author of this article sticks to the methodological approach of R.A. Galin, in whose framework the trends and prospects of reproductive behaviour are considered through a system of external and internal factors that determine it, which shapes the structure and content of the empirical part of this study.

## Method and data

Within this study, the author analyzes the dynamics of the main indicators of fertility in the Republic of Bashkortostan, calculates a hypothetical minimum of natural fertility (HMNF) in the region, and also conducts an analysis of population survey data.

When assessing the dynamics of fertility rates, the author relies on materials from the Federal State Statistics Service (Rosstat) and the Territorial Body of the Federal State Statistics Service for the Republic of Bashkortostan (Bashstat); vital statistics and population censuses; empirical research by domestic and foreign scientists.

When researching the reproductive intentions of those entering into marriage, the author uses data from population surveys conducted in June–September 2018 and in August–October 2020 in city and municipal districts of the Republic of Bashkortostan. The survey was conducted by specialists of the Department for Analysis of Demographic Processes and Family and Marriage Relations of the State Treasury Institution, the Republican Resource Center «Sem'ya», the Family Policy Department of the Ministry of Family, Labour and Social Protection of the Population of the Republic of Bashkortostan, and the State Committee of the Republic of Bashkortostan for Justice. The sample constituted of citizens applying for marriage registration in the registry offices and consisted of 693 people aged 18–64 in 2018 and 559 people aged 17–69 in 2020; it represented the population of the region by type of settlement and gender. The questionnaire contained closed and semi-open questions. Most of the questions did not exclude meaningful answers in free form. The main purpose of these surveys was to analyze modern marriage processes in the Republic of Bashkortostan, and one of its tasks was to study the reproductive intentions of respondents entering into marriage.

Brief information about the structure of the survey sample in 2018 and 2020 for the main parameters are given in Table 1.

**Table 1.** Structure of survey samples by main socio-demographic parameters, %

		2018	2020
Gender	male	48.1	49.7
	female	51.9	50.3
Settlement type	city of Ufa	39.9	32.4
	urban settlements	24.6	34.7
	rural settlements	35.2	32.9
Level of education	full secondary or lower	14.6	18.6
	post-secondary or tertiary	38.7	39.7
	higher education or higher	46.4	41.7

Source: author's calculations

## Fertility rate dynamics

By now, the fertility rate in the Republic of Bashkortostan has dropped to the average Russian level. When comparing fertility rates in the Russian Federation, the Volga Federal District and Bashkortostan, a negative trend is observed: among the regions of the Volga Federal District and regions bordering Bashkortostan. The republic ranked sixth in terms of fertility in 2019, but over the past five years the indicators show a continuous decline (Table 2).

In 2020, compared with 2016, 14.4 thousand fewer children were born in the republic (a decrease in the absolute number of births by 26%), and the CFR dropped from 13.7‰ to 10.2‰. On an approximate scale of assessment, the CFR value of less than 16‰ corresponds to a low birth rate, insufficient to replace generations of parents with generations of children (Demographic encyclopedia) 2013]. For the first time, the republic passed the point of the historical minimum in the number of births — 41.4 thousand children born or 10.0 births per 1000 population — in 1999. In 2020, statistics again recorded a very low number of births — 41.2 thousand births and a CFR equal to 10.2‰.

Since 2016, in the republic as a whole, there has been a pronounced decrease in fertility — largely due to the population living in urban areas. The generation of children does not replace the generation of parents. In 2019, in urban areas of the republic, the total fertility rate averaged at 1.254 children per urban woman, which not only is lower than replacement level, but is below the critical mark of 1.5 children per woman. If the birth rate is only slightly below the level of simple reproduction of the population, then the reduction in the size of subsequent generations occurs slowly, and then, if necessary, there is a chance to replenish the generation through migration. However, if the fertility rate turns out to be rather low, there is a rapid decline in the population, and in order to somehow compensate for this process, a massive influx of migrants will be required (McDonald 2006). Since the early 1990s, the Republic of Bashkortostan has been facing the fertility level lower than that necessary for population reproduction.

**Table 2.** Fertility rates in the Republic of Bashkortostan, 2016-2020

<b>Year</b>	<b>number of births</b>	<b>crude fertility rate (CFR), ‰</b>	<b>total fertility rate (TFR)</b>
All population			
2016	55 628	13.7	1.860
2017	49 315	12.1	1.696
2018	47 010	11.6	1.652
2019	41 767	10.3	1.511
2020*	41 180	10.2	1.525
Urban population			
2016	37 242	14.8	1.727
2017	30 271	12.0	1.434
2018	28 698	11.4	1.388
2019	25 183	10.0	1.254
2020*	...	...	1.273
Rural population			
2016	18 386	11.8	2.221
2017	19 044	12.3	2.369
2018	18 312	11.9	2.339
2019	16 584	10.9	2.189
2020*	...	...	2.215

\* Preliminary data

Source: Demographic Processes in the Republic of Bashkortostan, 2020

For a more accurate characterization of population reproduction, we use the net population reproduction rate, which accounts both for fertility and mortality and acts as a quantitative measure of replacing the maternal generation with that of daughters. It has an independent meaning in the analysis of fertility. For the period 2002–2020 the value of the net reproduction rate for the entire population of the republic (Table 3) ranged from 0.546 to 0.929.

A value of the net coefficient less than 1.0 corresponds to a shrinking population. The minimum in the republic was observed in 2006 (0.546, and in urban areas — 0.501). Recent estimates for 2019–2020 show a coefficient of a cohort of mothers replacement in the Republic of Bashkortostan at the level of 72.0–72.5% (0.720–0.725).

Official statistics show a continuing decline in fertility rates referring to the first and second births in the republic. The fertility model in rural areas has a pronounced tendency towards the transition to urban norms of reproductive behaviour (to having few children). Table 4 presents data on total fertility rates by birth order. Here, we see that, according to preliminary data from Rosstat, in 2020 there was a slight increase in third, fourth, fifth and subsequent births. The information for the following periods will enable assessing the stability of these dynamics.

**Table 3.** Net reproduction rate, Republic of Bashkortostan, 2002–2019

Year	Republic of Bashkortostan		
	all population	urban population	rural population
2002	0.715	0.633	0.910
2003	0.710	0.628	0.912
2004	0.706	0.649	0.837
2005	0.550	0.512	0.648
2006	0.546	0.501	0.657
2007	0.757	0.662	0.938
2008	0.803	0.711	0.975
2009	0.804	0.719	0.961
2013	0.897	0.806	1.138
2014	0.929	0.826	1.213
2015	0.915	0.839	1.129
2016	0.884	0.824	1.046
2017	0.804	0.683	1.112
2018	0.787	0.663	1.105
2019	0.720	0.603	1.025
2020	0.725	0.607	1.045

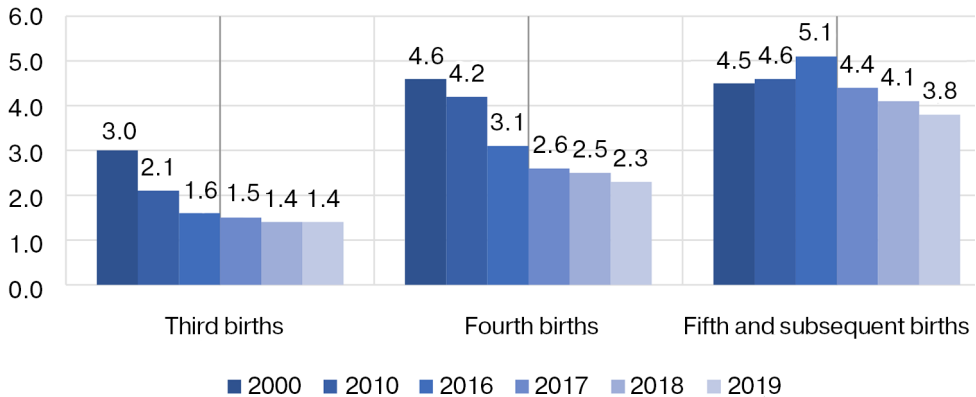
Source: Bashstat data

**Table 4.** Total fertility rate by birth order in the Republic of Bashkortostan, 2016–2020

Year	All births	First	Second	Third	Fourth	Fifth and subsequent
2016	1.860	0.734	0.766	0.262	0.062	0.035
2017	1.696	0.691	0.652	0.259	0.059	0.034
2018	1.652	0.658	0.633	0.258	0.066	0.037
2019	1.511	0.614	0.550	0.249	0.064	0.035
2020	1.525	0.589	0.541	0.278	0.075	0.043
2020 to 2019, proportion	0.014	-0.025	-0.009	0.029	0.011	0.008

Source: Rosstat data

It can be noted that the contribution of births of different order to the total indicators for the republic does not only significantly differ depending on the type of settlement, but also has a pronounced tendency towards the transition in rural areas to urban norms of reproductive behaviour, that is, from large families to an average number of children, and then to having few children. The diagram (Fig. 1) shows the dynamics of the excess for third, fourth and subsequent births in rural areas compared to urban areas.



**Fig. 1.** Ratio of the births by order among mothers in rural areas compared to urban ones in the Republic of Bashkortostan in 2000–2019, times. *Source:* authors' calculations based on Bashstat data

In Fig. 1 we can clearly see how for the period 2000–2019 the ratio of births occurring in rural and urban areas is changing. If in 2000 there were three times more third births in the village than in the city, then in 2019 it was only 1.4 times more. Accordingly, for fourth births, the ratio was 4.6 times in 2000 and 2.3 times in 2019. Thus, the narrowing of this urban-rural gap indicates that rural women are increasingly limited to the birth of one or two children (Respublika Bashkortostan... 2020: 20–33).

The decline in second, but not in third and subsequent births is presumably due to the timing gap after the announcement in December 2015 of the extension of the maternity capital programme up to 2018 inclusively, and then, in 2017, up to 2021 inclusively, and further — until December 31, 2026. Material incentives might work as a trigger when the population has a need for two, three or more children.

In addition, ageing of motherhood continues in the Republic of Bashkortostan. The average age of a mother in the republic is higher than in Russia as a whole and in the Volga Federal District. In 1990–2020 the average age of a mother at the birth of her first child increased by 2.94 years, and over the last four years of observation — by 0.34 years. Modern women plan the number and timing of the birth of children, maximizing the rationalization of marital and reproductive behaviour. The main reasons for the postponement of the family creation (official registration of marriage) and the birth of children to a later age are the need to complete their education, acquire a profession and start an independent labour activity that provides them with their own income (Zemlyanova and Chumarina 2018). At the same time, postponing motherhood for a long time significantly increases the risk of eventual childlessness.

Changes in the structural characteristics of fertility are expressed through the transformation of the age model of reproductive behaviour. To account for the fertility rate among women by age, the age-specific fertility rate is used, which enables most accurately expressing the dynamics of the intensity of births (Skryabina 2012).

Analysis of these indicators shows that in the Republic of Bashkortostan, the proportion of women in older reproductive ages is increasing. In the age group 30–34 years (it accounts for 31% of all births, including 36% of second, 42.4% of third and 38.9% of fourth births) the intensity of births increases. According to forecasts, this proportion will start to decline from 2022, and particularly strongly from 2024, when a numerically small generation of women born in 1990–1994 will reach this age. The peak of the intensity of fertility is shifting towards older ages (Table 5).



**Table 5.** Age-specific fertility rates in the Republic of Bashkortostan (number of births per 1000 women of the corresponding age), 1990–2020.

Year	Age, years								
	15–17	18–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54
All population									
1990	12.0	98.5	181.7	115.8	60.0	25.0	5.6	0.2	-
2000	8.5	56.9	107.8	81.0	45.7	16.3	3.4	0.1	-
2015	7.5	39.2	95.7	130.4	91.4	43.8	9.3	0.4	-
2016	5.8	33.7	88.3	127.0	88.8	43.8	9.4	0.5	-
2017	4.6	32.7	80.7	110.4	82.7	41.2	9.6	0.5	-
2018	4.6	27.3	74.7	108.9	82.2	42.3	9.4	0.6	-
2019	4.0	24.0	69.3	95.8	76.0	39.7	9.7	0.6	0.022
2020	3.3	23.4	69.0	97.1	75.2	42.8	9.9	0.6	-
Urban population									
1990	10.6	76.5	151.9	102.1	52.7	20.2	3.8	0.1	-
2000	7.3	46.7	92.3	71.4	39.1	12.9	2.5	0.1	-
2015	5.3	25.1	72.7	126.1	92.6	43.7	8.9	0.4	-
2016	4.0	20.5	70.6	122.9	91.5	44.2	9.4	0.5	-
2017	3.1	18.3	59.0	94.5	78.6	39.1	9.0	0.5	-
2018	2.7	15.9	57.1	88.9	76.4	40.0	9.1	0.8	-
2019	2.2	13.1	54.4	76.4	68.8	36.1	9.3	0.7	0.037
2020	2.3	13.4	56.6	78.0	65.9	38.3	8.7	0.6	-
Rural population									
1990	14.7	183.5	256.2	147.3	78.0	37.6	10.8	0.3	-
2000	11.1	85.7	145.8	101.9	58.4	23.2	5.2	0.3	-
2015	10.8	73.9	163.1	140.9	88.4	44.1	9.8	0.4	-
2016	8.6	65.9	134.7	137.9	82.5	43.0	9.4	0.4	-
2017	7.0	68.1	127.8	156.4	92.5	45.7	10.5	0.4	-
2018	7.6	54.7	107.3	173.4	96.8	47.5	9.9	0.3	-
2019	6.9	48.8	94.0	161.3	94.9	48.0	10.6	0.4	-
2020	4.8	44.6	88.1	158.6	101.3	53.5	12.3	0.5	-

Source: (Demographic processes in the Republic of Bashkortostan 2020); EMISS Age-specific fertility rates, indicator value per year

Among the urban population of the Republic of Bashkortostan in 2014 the bulk of children are born to mothers aged 25–29 years (39.9%) and 30–34 years (25.1%). The rural fertility moved aged only in 2018: 32.9% of women who gave birth in this group were aged 25–29 years, and 25.8% — 30–34 years.

There is one more tendency that cannot be ignored when considering the problem of fertility — this is the high proportion of births out of wedlock. The share of births out of

wedlock in the aggregate indicator of children born in 2016–2019 in Bashkortostan remains stable and is in the range of 16.9–17.6% (Table 6).

**Table 6.** Number of children born by the mother's marital status

	2016	2017	2018	2019
<b>Total number of births, people</b>	55628	49315	47010	41767
including:				
for mothers who are in a registered marriage	45788	40698	39040	34657
registered by joint application of parents	5110	4496	4012	3696
registered at the request of the mother	4651	4055	3930	3399
<b>Percentage of the total</b>	100	100	100	100
including:				
for mothers who are in a registered marriage	82.3	82.5	83.0	83.0
registered by joint application of parents	9.2	9.1	8.5	8.9
registered at the request of the mother	8.4	8.2	8.4	8.1
including:				
<i>all births out of wedlock</i>	17.6	17.3	16.9	17.0
Total	9761	8551	7942	7095
<b>Percentage of the total of births out of wedlock</b>				
registered by joint application of parents	52.4	52.6	50.5	52.1
registered at the request of the mother	47.6	47.4	49.5	47.9

Source: authors' calculations based on Bashstat data

Note: The discrepancy in the total amount arises from births for which the mother's marital status is unknown.

Among the rural population, the proportion of births out of a registered marriage is higher: it is at the level of 20%, while in the urban population it is at the level of 15%, and more often such births are registered at the request of the mother (Table 7). The last figure is of high interest: every tenth newborn in the rural area is registered without the participation of the father, while in the city — every fifteenth (6.5%). Extramarital fertility can contribute to a decrease in future fertility rates, since children born out of wedlock and raised in single-parent families have lower reproductive attitudes compared to children from two-parent families with several children, and lower marriage intentions due to lack of experience of living in a full-fledged family and the desire to create their own family (Popova 2007).

The emergence of new forms of cohabitation, alternative to officially registered marriage (extramarital cohabitation, trial marriages) against the background of a lower contraceptive culture of the rural population, contributed to an increase in the proportion of births out of wedlock in rural areas. In general, the proportion of children born out of a registered marriage depends both on demographic factors — the age structure of men and women, the ratio of their numbers at reproductive age — and on the extent to which premarital and extramarital sexual relations are spread in society; how the society relates to such relations; what is the value of a family that is in a registered marriage and has several children; on the culture of contraceptive behaviour and the ability to terminate pregnancy (Respublika Bashkortostan... 2020: 20–33).

**Table 7.** Dynamics of the number of births to women who are not in a registered marriage, Republic of Bashkortostan, 2016–2019.

Year	Number of births			Share in the total number of births, %			incl. at the request of the mother	
	all population	urban population	rural population	all population	urban population	rural population	urban population	rural population
2016	9761	5817	3944	17.5	15.6	21.5	6.5	12.2
2017	8551	4676	3875	17.3	15.4	20.3	6.5	12.2
2018	7942	4336	3606	16.9	15.1	19.7	6.6	11.1
2019	7095	3767	3328	17.0	15.0	20.1	6.5	10.7

Source: authors' calculations based on Bashstat data

Changes in matrimonial behaviour, nuptiality and the marriage structure of the population have a direct impact on fertility. In recent decades, there has been a transformation in the field of family and marriage relations, which is manifested in high divorce rates, the spread of non-traditional forms of marriage (cohabitation, trial, guest marriages), the postponement of parenthood, a change in social norms in relation to extramarital cohabitation, an increase in the proportion of children born outside of wedlock (The present and future of the family... 2018). In this regard, the next section of the article is devoted to the analysis of empirical data from population surveys conducted among citizens who apply for marriage at registry offices.

## Reproductive behaviour of the population

Reproductive behaviour is a system of actions and relationships that mediate the birth of a certain number of children in a family, as well as outside of wedlock (Skryabina 2012]) Reproductive attitude is a mental regulator of reproductive behaviour, the readiness of an individual to have a certain number of children (sons and daughters) in specific conditions of life at a certain time, based on the need for children (Demographic Conceptual Dictionary 2003). Attitudes towards the number of children are measured using three generally accepted basic indicators: the ideal, desired, and expected number of children in a family (Table 8).

The study of reproductive intentions over several decades revealed the following pattern: a decrease in the number of births in a family is observed with a simultaneous decrease in the need for children. Thus, A.I. Antonov and other researchers in their works, analyzing the characteristics of reproductive behaviour, note that a decrease in childbearing is determined by a decrease in the norms of childbirth and the family's need for children (Sotsiologiya sem'i 2007; Monitoring the demographic situation in the Russian Federation 2008; Antonov and Borisov 2006).

To characterize reproductive intentions in this work, the author uses indicators of the desired and expected number of children.

**Table 8.** Individual need for children

<b>Attitude towards the number of children</b>	<b>Terms of implementation need for children</b>	<b>Question asked</b>
1. Ideal number of children	In ideal conditions that are optimal for all people, regardless of specific life circumstances and personal preferences	How many children are best to have in a family?
2. Desired number of children	In ideal conditions for your family, without taking into account specific life circumstances and individual biography	How many children would you like to have, given all the necessary conditions?
3. Expected number of children	In your specific family conditions and based on personal preferences for the entire marriage period	How many children do you intend to have in your family?

Source: (Sotsiologiya sem'i 2007)

Differences in the birth rates of the urban and rural population are associated not only with lifestyle, but also with different ideas about the number of children in the family. Differentiation of reproductive behaviour exists not only between urban and rural areas, but also depending on the types of urban settlements: the larger the city, the lower the fertility rate. The heterogeneity of reproductive behaviour in urban settlements of various sizes is confirmed by the data of official statistics, the results of the All-Russian Population Censuses and many empirical studies (Arkhangelskiy 2006). For example, according to the data of the 2010 All-Russian Population Census, the average number of children born by one woman at the age of 15 years or more was 1.680 in Bashkortostan, while among its urban population — 1.371, and among the rural population — 2.183 (Tables 9–10).

**Table 9.** Women living in private households by the number of children born, urban districts of the Republic of Bashkortostan, All-Russian population Census–2010

<b>Urban districts</b>	<b>Average number of children born (per 1000 women aged 15 and over)</b>	<b>Population as of January 1, 2010</b>
city of Ufa	1234	1038100
city of Sterlitamak	1379	271540
city of Salavat	1411	155596
city of Neftekamsk	1418	131399
city of Oktyabrsky	1444	109722
city of Sibay	1496	67484
city of Kumertau	1554	66815

Source: All-Russian Census data–2010 for the Republic of Bashkortostan; (Age and sex composition of the population of the Republic of Bashkortostan 2010).

According to data from Table 9, it is clear that the larger the city, the lower the average number of children born per 1000 women aged 15 years or more.

**Table 10.** Reproductive intentions of respondents depending on the type of settlement, average number of children in a family, 2018 and 2020

Settlement type	desired number of children in the family		expected number of children in the family		difference between the desired and expected number of children	
	2018	2020	2018	2020	2018	2020
city of Ufa	2.41	2.37	2.27	2.23	0.14	0.14
Urban population	2.34	2.26	2.21	2.23	0.13	0.03
Rural population	2.51	2.46	2.39	2.24	0.12	0.22
All population	2.43	2.36	2.30	2.24	0.13	0.12

Source: author's calculations based on survey data from 2018 and 2020.

The reproductive intentions of the surveyed respondents decreased in all types of settlements in 2020 compared to 2018. The difference between the desired and expected number of children in rural areas almost doubled in 2020 compared to 2018.

The reproductive plans of marrying men and women of reproductive age (17–49 years) are practically the same (Table 11): half of the future spouses are determined to have two children in the family. Reproductive attitudes are higher among men than among women. The average desired number of children for men is by 0.14 children higher, and the expected number is by 0.25 children higher than for women. Men are psychologically characterized by an overestimated need for children— almost all studies show that men, on average, target a slightly larger number of children than women. However, when deciding on the number of children in a family, the opinion of the spouse whose child attitude is lower is of decisive importance (Arkhangelskiy 2006). Perhaps, given the higher reproductive attitudes of men, additional measures should be envisaged aimed at fathers of newborn children — for example, guaranteeing the father's employment until the child reaches the age of three.

**Table 11.** Distribution of women and men aged 17–49 years by the desired and expected number of children, %, 2020

Number of children	women		men	
	Desired number of children	Expected number of children	Desired number of children	Expected number of children
0	0.4	3.0	1.9	1.9
1	9.8	12.9	7.3	9.6
2	53.2	55.1	50.0	51.0
3	31.3	24.7	28.8	27.2
4	1.9	1.9	4.6	3.8
5 and more	3.4	2.3	7.3	6.5
Average number of children	2.35	2.16	2.49	2.41

Source: author's calculations based on the 2020 survey data.

Women of reproductive age who marry, if they have all the necessary conditions, would like to have an average of 2.35 children (Table 12), which is below the level of 2.6 children per effective marriage (Borisov 2007). In all age groups, most women wish to have two children in their family. Younger women have a slightly higher desired number of children than women over 30.

**Table 12.** Opinion of women of reproductive age (17–49 years) on the desired number of children and the average desired number of children, 2020

Age, years	Share of women of reproductive age who indicated the desired number of children, %						Average desired number of children
	0	1	2	3	4	5 and more	
17–19		7.7	46.2	46.2			2.38
20–24		8.3	56.0	29.8	3.6	2.4	2.36
25–29		10.7	50.7	34.7		4.0	2.36
30–34		9.3	53.7	33.3	1.9	1.9	2.33
35–39		5.0	65.0	25.0		5.0	2.35
40–44	8.3	33.3	25.0	8.3	8.3	16.7	2.25
45–49			71.4	28.6			2.29
Total	0.4	9.8	53.2	31.3	1.9	3.4	2.35

*Source:* author's calculations based on the 2020 survey data.

In modern society, the beginning of marriage and even the birth of a child in many cases precedes the official registration of marriage. As part of the 2018 and 2020 surveys respondents were asked about planning the timing of the birth of their first child. On the whole, in the republic, we observe rather high proportion of those entering into marriage who do not pay attention to the issue of planning the birth of their first child (Table 13).

**Table 13.** Distribution of answers to the question about planning the birth of the first child, %, 2018 and 2020

Answer options	%	
	2018	2020
we are already expecting a baby	20.9	26.8
we'll see how it goes	33.2	26.5
within a year after marriage	29.7	20.9
in 2–3 years	12.8	12.2
find it difficult to answer	1.2	12.2
in 4 years or later	2.0	1.4
we don't want children	0.1	0.0
Total	100.0	100.0

*Source:* author's calculations based on survey data from 2018 and 2020.

As you can see from Table 13, a third of respondents (33.2%) in 2018 and 26.5% in 2020 do not intentionally plan the birth of their first child, answering «we'll see how it goes». In general, 44.6% were inclined to have their first child no later than four years after marriage in 2018, and 34.5% — in 2020. In 2018, every fifth person entering into marriage (20.9%) was already expecting a child, and in 2020 the share of such respondents was 26.8%. In this case, the marriage is most likely following the onset of pregnancy.

With regard to the rural–urban differences, respondents who lived in Ufa and other cities of the republic in 2018 were less inclined to planning the birth of children: 33.8% of Ufa residents and 39.1% of residents of other cities plan to have their first child in a «we'll see how it goes» fashion, and another 21.1% and 23.6%, respectively, are already expecting a child. At the same time, rural inhabitants are more likely than urban citizens to plan the birth of children. In 2018, the survey data somewhat contradicted modern realities, because rural residents are characterized by a lower culture of contraception than urban ones, and in 2020 a third of rural respondents (31.8%) answered «we'll see how it goes» to the question about planning the birth of their first child, and more than a third (34.4%) indicated that they were already expecting a baby. In 2018, 45.2% of respondents were determined to have their first child within four years after marriage, and in 2020 this share reached 39.3%.

In studies devoted to reproductive behaviour, respondents are often asked in one way or another a question about the reasons that prevent them from having a larger number of children. Such a question helps to identify the main obstacles preventing the birth of a child, and to assess how strong their influence is. In our research, the question was asked in the following form: «What reasons, in your opinion, can influence your decision to postpone the birth of a child?» (Table 14).

**Table 14.** Opinion of respondents about the reasons that can prevent the birth of a child (multiple choice question)

Answer options	Answers	%
financial difficulties	189	37.2
lack of own housing	157	30.9
desire to live for oneself for a while	132	26.0
low-paid job, job search	115	22.6
lack of favourable conditions in the place of residence that facilitate childcare (remoteness of preschool institutions, lack of medical, health care and sports facilities, shopping centres, low level of consumer services, transport problems, etc.)	59	11.6
completion of education, obtaining additional education	48	9.5
unwillingness of the woman to leave an interesting job at least for a while, personal desire for career growth	45	8.9
poor health of the spouse	44	8.7
nothing is interfering	32	6.3
the need to repay loans, which does not allow me or my spouse to leave work for at least a while	31	6.1
difficulty in combining work and childcare	30	5.9
difficulties with placing a child in a nursery, kindergarten	15	3.0
we already have enough children	6	1.2

*Source:* author's calculations based on the 2020 survey data.

Arkhangelsky, analyzing the factors and trends in fertility, notes that when assessing various conditions as obstacles to having children, the respondents usually rank financial difficulties first with and housing difficulties second (Arkhangelsky 2006). Our research is no exception. According to those getting married, the main reasons that can influence the decision to have a child are also financial difficulties (37.2% of respondents chose this answer in 2020) and the lack of their own housing (30.9% of respondents). Third comes the answer «desire to live for oneself for a while» (26.0%), the fourth — «low-paid job, job search» (22.6%). If the option «financial difficulties» accounted for every third answer, and «the desire to live for oneself for a while» — for every fourth, then the option «nothing interferes» — only every sixteenth (6.3%). Thus, on the one hand, the obstacles to the birth of children lie in the realm of economics (money, housing, work), on the other hand, the desire for self-realization wedged in between them confirms the hypothesis of significant changes in the hierarchy of needs, when the orientation towards a family in legal marriage and having several children is replaced by attitudes towards non-family values, the need for children is weakened, the fertility rate decreases and, therefore, having few children becomes the norm of reproductive behaviour.

The increase in the age at first marriage is significantly influenced by the admissibility of not only premarital sexual relations, but also the early debut of sexual life. Research shows an increase in the number of respondents who have a positive or neutral attitude to these processes. At the same time, reproductive attitudes are higher in those men and women who disapprove of early (before the age of 16) sex life than those who approve of it or are indifferent to it. Despite the liberalization of sexual behaviour in modern society, the majority of respondents who condemn premarital and early sexual relations have higher reproductive attitudes.

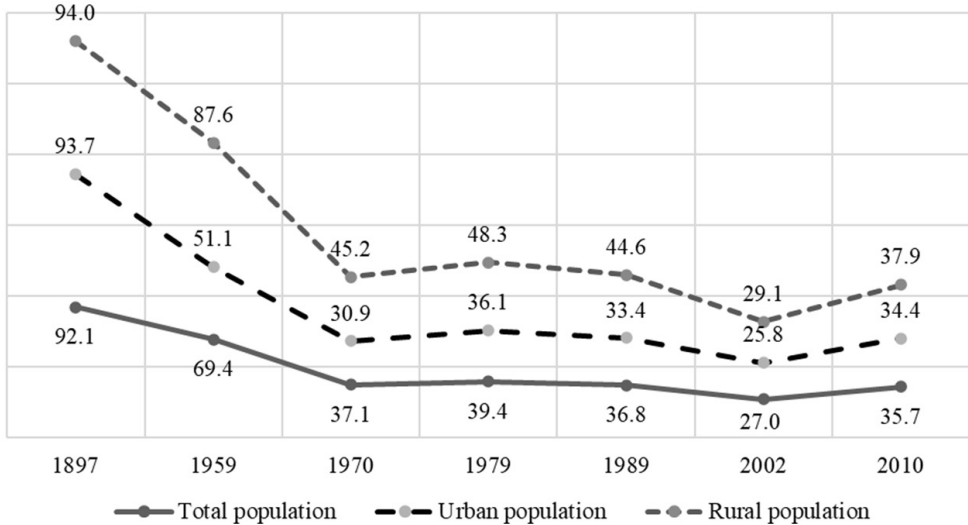
Depending on the norms of childbearing intentions, the author of this study distinguishes three types of reproductive behaviour: few children (1–2 children in a family), average number of children (3–4 children) and large families (5 or more children in a family). Most of the respondents adhere to the norms of having few children; there are also those who prefer childlessness.

Today we are witnessing a gradual transition from two children to one child as an ideal family model. It should be noted that not all reproductive plans and expectations of marrying respondents will be fully implemented, since respondents cannot take into account possible deterioration of their health, breakdown of marriage due to divorce or widowhood, or changes in reproductive plans under the influence of life circumstances. According to the latest survey, the average desired and expected number of children in a family decreased in comparison with 2018: the desired from 2.43 to 2.36, the expected from 2.30 to 2.24 children. In any case, this corresponds to the model of small family.

For an aggregated quantitative assessment of the described processes, we will introduce the term *reproductive potential*, by which we mean the totality of potential capabilities necessary to achieve maximum implementation of reproductive capacity and capable of manifesting itself under certain conditions. The reproductive potential of the existing structure of the population can be implemented to varying degrees in various social groups, differing in the level of material well-being, education, place of residence, etc., through reproductive behaviour, depending on the existing need for children and the conditions for its implementation. The degree of implementation of reproductive potential is largely determined by the measures of demographic policy. Consequently, its implementation is influenced not only by demographic factors, but also by economic, social, cultural, medical ones, etc.



A quantitative assessment of the reproductive potential and the degree of its implementation can be obtained using the method of Russian demographer V.A. Borisov by comparing the hypothetical minimum natural fertility rate (HMNF) and the actual crude fertility rate (CFR). Fig. 2 graphically depicts the degree of implementation of the fertility potential in the Republic of Bashkortostan.



**Fig. 2.** The degree of implementation of the fertility potential (HMNF) in the Republic of Bashkortostan. *Source:* (Skryabina 2012)

In the conditions of the age and marriage structure of the population that developed at the beginning of 1897, the degree of implementation of the HMNF for the entire population of the republic was 92.1% of the biologically possible level, for the urban population — 93.7%, for the rural population — 94.0%.

Indicators of the degree of implementation of HMNF give an idea of the change in fertility due to its intrafamilial control, that is, due to the factor of reproductive behaviour. In 2002, the value of HMNF in the entire population of the Republic of Bashkortostan was 41.1‰ (in the urban population — 41.1‰, in the rural — 40.5‰), and the degree of implementation, respectively, 27.0%, 25.8% and 29.1%. Calculations based on the 2010 Census data showed a slight increase in the degree of implementation of the fertility potential. Taking into account the relationship between the age structure and reproduction of the population, the author of this article analyzed the age-sex structure of the population and assessed the indicators of the secondary and tertiary gender ratio. Based on these data, the author concluded that the increase in the degree of implementation of the HMNF compared with 2002 was largely due to the increase in the number of men and women in the age groups 20–24, 25–29, 30–34 years (the most active reproductive age) (Skryabina 2012).

Thus, the socio-biological potential of fertility in the Republic of Bashkortostan, measured via the HMNF method, is currently implemented by one third of the biologically possible level, which is explained by the significant role of intrafamily regulation of the number of births and the intervals between them. This proves that deliberate limitation of the number of births in a marriage plays a decisive role in the low degree of implementation of reproductive potential.

## Conclusion

An analysis of modern fertility trends in the Republic of Bashkortostan showed that the fertility rate level has by now decreased to the Russian national average. It corresponds to a level below simple reproduction of the population: the generation of children does not replace the generation of parents.

The decrease in the fertility rate for the first and second births continues, the rural structure of births is approaching the urban one. For the period 2000–2019 the ratio of the births of different orders in rural areas versus urban areas has changed dramatically. The order of births in the rural areas has a pronounced tendency towards the transition to urban norms of reproductive behaviour (to having few children), which in the long term will lead to a decrease in the fertility rate in rural areas below the level of simple reproduction of the population.

A significant factor in reducing the fertility rate is the increase in the average age of the mother at childbirth. The shift in the intensity of fertility towards older ages, in the author's opinion, was influenced by both the global trends of motherhood ageing and new measures of material incentives for fertility, which have been actively implemented in Russia since the beginning of 2007, especially the introduction of the maternity capital programme.

The share of births out of wedlock in the aggregate indicator of children born in 2016–2019 in Bashkortostan remains stable and is in the range of 16.9–17.6%. The proportion of those born out of wedlock is still high in rural areas of Bashkortostan.

Despite the implementation of additional measures to stimulate fertility, the reproductive attitudes of those entering into marriage, as shown by the survey data, are decreasing in all types of settlements, especially in rural areas. The reproductive intentions of men and women entering into marriage practically coincide; half of the future spouses adhere to the two-child family model. The average desired number of children for women of reproductive age was 2.35 children, which is below 2.6 per effective marriage.

The distribution of answers to the question about planning the birth of the first child showed that in 2018 every fifth couple was already expecting a child, and according to the 2020 survey — almost every fourth, that is, the official registration of marriage is stimulated by premarital pregnancy. In general, as shown by survey data, the majority of respondents plan to have a child within four years after marriage.

According to those entering into marriage, the main reasons preventing the birth of a child are financial difficulties, lack of own housing, the desire to live for oneself for a while, low-paid work or lack thereof. Thus, the obstacles to the birth of children are in the realm of economics, but the need for self-realization also plays a significant role, which confirms the assumption about the ongoing changes in the hierarchy of individual needs of the population. The orientation toward a legally registered family with several children is partly supplanted by attitudes toward non-family values. As a result, the need for children is weakened, the fertility rate decreases, and consequently, having few children becomes the norm of reproductive behaviour.

A quantitative assessment of the reproductive potential and the degree of its realization, calculated by comparing the hypothetical minimum of natural fertility (HMNF) and the observed fertility rate according to the method elaborated by Borisov, indicates that the fertility potential in the Republic of Bashkortostan is quite high, but the degree of its implementation is low.

The scientific community is of the opinion that demographic policy measures aimed mainly at eliminating financial obstacles to the birth of children have now exhausted their effectiveness (Gosudarstvennaya semeinaya politika... 2014). Hypothetically, if the state, within the framework of the main directions of demographic policy, along with financial stimulation of fertility does not actively and aggressively form the need for children and create a positive image of a family with several children, one should expect a transition from a two-child model of a family mainly to a one-child model and an increase in the number of families preferring childlessness.

When developing a demographic policy designed to influence the reproductive behaviour of the population, in order to increase fertility, it is necessary to take into account the need to solve two problems. The first task is to create favourable living conditions for families for the birth and upbringing of the desired number of children through the general socio-economic development of the country, raising the standard of living of the population. However, this is a necessary, but not a sufficient condition for improving the situation. The second task is the formation of the needs of families for children by increasing the social prestige and importance of a family with several children, the formation in children and adolescents of a positive image of a complete family with several children in a registered marriage, and the revival of family values. Only in combination will the solution of these two problems give the desired effect (Skryabina 2012).

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