

## Specifics of Reproductive Behavior of Female Residents of Moscow



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**Abstract.** Birth rate dynamics in Russia's population remains one of the major objects of attention of demographic science and politics. In 2019, the aggregate birth rate in Moscow exceeded the Russian average, giving rise to assumptions about the likelihood of the emergence of a new trend, despite the fact that studies of reproductive behavior of city dwellers indicate the prevalence of intentions to have fewer children. The article presents estimates of birth rates in metropolitan megacities of Russia, indicating that the values of indicators are still lower than the Russian average and even lower than the same indicators for Russia's urban population. According to the data of an up-to-date survey of female Moscow residents, we find the prevalence of intentions to have fewer children and postpone childbirth. Significant factors influencing the intentions of female Moscow residents to have children are marital behavior, level of education, standard of living and value orientations. Birth rates in female Moscow residents with higher education in real generations are slightly lower than the Russian average. A slightly less pronounced inclination toward getting married in a civil ceremony also has a significant determinant role. The impact of income level cannot be assessed unambiguously. Indeed, in groups of women with relatively lower welfare, fertility rates are higher, but this is due to the ratio of satisfaction with the standard of living and the importance of children (the need for children). A higher level of income (and satisfaction with it) contributes to the realization of reproductive intentions. Female Moscow residents tend to have fewer children since such an attitude is passed down from previous generations; besides, among them, there is a higher proportion of those focused on individual values, which also determines a lower birth rate in a metropolitan megacity. Taking into account birth rate trends and the peculiarities of reproductive behavior of female Moscow residents can contribute to improving the effectiveness of demographic policy.

**Key words:** women's reproductive behavior, reproductive behavior of female Moscow residents, drivers of women's reproductive behavior.

### Introduction

Metropolitan areas are traditionally characterized by a relatively lower birth rate. First of all, this is probably due to the features of population lifestyle there. Greater opportunities for self-realization in professional activities often determine the postponement of having children. A wider range of recreational opportunities may also contribute to this. At the same time, according to the 2020 census, 14% of Russian women of reproductive age live in the two main cities of the country.

Until 2002, the lowest total fertility rate among Russia's constitute entities was recorded in Saint Petersburg and Moscow. Only in 1997 in the Moscow Oblast, (0.984) it was slightly lower than in Moscow (0.985). In 1993–2001 in Saint Petersburg and in 1993, 1997–2001 in Moscow its value was

less than 1.0. Since 2003, the total fertility rate in the Leningrad Oblast has been lower than in Saint Petersburg, and in subsequent years it has also been lower than in Moscow. In 2019, for the first time, the total fertility rate in Moscow (1.505) was slightly higher than in Russia as a whole. In 2021, its value in the capital (1.597) was already much higher than in Russia as a whole (1.505). It would seem that there are grounds to speak of a higher birth rate in the capital's metropolitan area.

However, we should keep in mind that according to the law "On acts of civil status" both parents' place of residence and a child's actual place of birth may be indicated as a child's birthplace in the birth certificate. In Moscow, there is a very high rate of births from other towns. For example, in

2021 it was 25.8%<sup>1</sup>. In this regard, the numerator (number of births) and the denominator (number of women) may not be comparable, and the birth rate in Moscow may be overstated (Stepanova, 2014). The same is probably observed in Saint Petersburg, while in the Leningrad Oblast fertility rates are, on the contrary, underestimated.

At the same time, the fact of increased fertility among urban residents, including in the measurement of reproductive orientations, requires verification and competent interpretation. Our article is devoted to finding an answer to the question about a statistical artifact or the emergence of a new trend.

### Research methods

A more correct assessment of the ratio of fertility levels in Moscow and Saint Petersburg compared to other RF constituent entities and Russia as a whole is given by indicators of fertility in real generations, calculated with the use of census data based on women's answers about the number of children born. Such a way of obtaining information naturally ensures comparability of the numerator and denominator. The use of fertility indicators for real generations makes it possible to level the impact of timing shifts. However, one should bear in mind that this applies only to the final (at the end of the reproductive period) number of children born. The

<sup>1</sup> The statistical form p58 "Distribution of births by place of maternal registration" identifies three groups of births: those whose mother resided in this Russia's constituent entity, in another Russia's entity, and the "other" group. In 2021 in Moscow, the first group included 64.2% of births, the second group included 25.8%, and the third group included 10.0%. Only the second group, and not the second and third, was counted as births to nonmigrants due to a certain uncertainty of the "other" group, as well as the fact that in the statistical form p211 "Born alive by age of mother and source of information on father" for Moscow with the allocation of municipalities the number of births with an unspecified municipality, unspecified district code for 2021 (33,475 persons) almost coincides with the number of births for which the statistical form p58 indicates that the mother resided in another Russia's constituent entity (33,415 persons).

fertility indicators in the real generations of women of a given age will be affected by timing shifts. Also the fertility indicators in real generations allow estimating the degree of replacement of mothers' generations by daughters' generations somewhat differently (than on the basis of total fertility rate and net reproduction rate): such estimation can be made directly for each generation taking into account the average number of children born, adjusted for the share of girls among births.

Within the framework of the article it is important to note the comparability of fertility indicators just for real generations with reproductive orientations according to sociological research data, as their characteristics are also calculated in relation to real generations.

For an in-depth analysis of possible reasons for the lower birth rate in Moscow in September 2021, the Department of Medical and Sociological Research (head – Candidate of Sciences (Politics) Ignat V. Bogdan) of the Research Institute for Healthcare Organization and Medical Management of Moscow Healthcare Department conducted a sociological study of reproductive behavior.

We conducted the research by telephone survey from September 2 to 24, 2021. We carried out the data collection by OOO "Spektr". The final sample size was 611 people. The maximum sampling error does not exceed 3.96% with a 95% confidence level. We conducted the survey using a random stratified cell phone sample (CATI – computer assisted telephone interview). Women of reproductive age (18–49 years old) permanently residing in Moscow participated in the study. The representativeness of the sample was controlled with the help of given strata according to the criteria of age groups (18–24, 25–29, 30–34, 35–49 years old), as well as the presence and number of their own children (1 child/2 or more children) based on Rosstat data for 2020.

### **Women's reproductive behavior and its determinants**

Among the determinants of fertility much attention is paid to women's reproductive behavior, which under certain circumstances is able to correct the influence of structural factors, shifting the indicators of childbearing. Attention to the features and drivers of female reproductive behavior is due to the fact that in the Russian reality reproductive decisions are made by women, according to formal and informal norms.

Modern women increasingly use male strategies of life activity, giving priority to self-education and professional career rather than family. Society has set coordinates for taking women out of private sphere, which has seriously changed their role functions and influenced reproductive behavior. Patriarchal views on women's place and role in the social continuum have been preserved in Russia since ancient times. Women's strategies assumed the role of a housewife, a mother. Traditionally, marriage and childbirth were the main and only ways of asserting women's status. In public opinion, the legitimization of a woman's career was paired with failures in her personal life as some kind of social compensation (Beginina, Kalugina, 2018). Such tendencies are more characteristic of city dwellers. One-child families remain dominant in urban and rural areas, but the share of two- and three-child families in rural areas is higher than in urban areas (Blinova, Vyalshina, 2012). At the same time, the decline in urban population's fertility began in the generations of the 1920s (Denisov, 2015).

Studies of the impact of urban lifestyle on the reproductive behavior of the population unambiguously testify to radical changes in the behavior of city dwellers. E.N. Novoselova notes: "Today's urban dweller is much more attached to things than to family. <...> Thus, the city has changed people and practically defeated them. The consequences of this victory are the destruction of the value of family and children, the formation of

families consisting of single individuals, children's education in the extra-familial space of megapolis, a profound change in the psychology of both women and men" (Novoselova, 2014).

For city dwellers, Muscovites in particular<sup>2</sup>, there is a greater tendency to have little or no children, a more significant postponement of marriage and the birth of a first-born child to the level of women in European countries, where it reached 29 years (Frejka, Sardon, 2005; Sobotka, 2004). However, there is also evidence of a higher underrealization of the reproductive intentions of Muscovites due to the presence of determinants, such as employment and housing problems, as well as the interiorization of cultural values (Zhuk, 2016).

The influence of material and living conditions and living standards on reproductive behavior is not so obvious. The results of most studies indicate an inverse relationship between living standards and fertility, number of children: higher fertility rates, number of children in a family are combined with lower living standards. Correct analysis, which excludes the influence of the available number of children on the average per capita income, shows that higher living standards can contribute to a fuller realization of families' need to have several children and thereby increase fertility rather than decrease it (Sivoplyasova et al., 2022). Reproductive choice determines the correlation between the importance of the values of children and material well-being (Arkhangelskii et al., 2021). Every family has to make a choice, and the weak relationship between the total fertility rate and the share of the population with incomes below the subsistence level indicates the presence of other non-material determinants of fertility and reproductive behavior.

<sup>2</sup> For example, data from the sociological study "Gender profile of socio-economic problems in the capital region", conducted in 2019 at the request of the Commissioner for human rights in the city of Moscow.

Health is undoubtedly one of the factors promoting reproductive behavior. The role of women's reproductive health as a driver of fertility and reproductive behavior is evidenced by the research of E.V. Zemlyanova<sup>3</sup>, A.A. Shabunova (Shabunova, 2010). The relationship between reproductive health, which in turn determines the behavior, and healthcare system activities is due to the need for medical support for women and couples at different stages of reproductive cycle. The research of N.E. Rusanova and A.A. Ozhiganova proves the medicalization of women's reproductive intentions, including the use of assisted reproductive technologies, and also notes the growing demand for humanization of obstetric care, which is manifested in women's desire to be thorough in the organization of delivery and the choice of a team of assistants, attend courses for future parents, be more informed and prepared (Rusanova, Ozhiganova, 2022).

One of the proven factors promoting fertility is nuptiality. A.B. Sinel'nikov found that annual changes in the number of births are strongly influenced by changes in the number of registered marriages with a lag of one year (Sinel'nikov, 2015), and the transformation of marital behavior in general contributes to fertility decline. "Women in registered marriages have more children by the end of their reproductive years than women in unregistered partnerships. Women in remarried legal marriages have more children than those in first marriages. But even for them, the average number of children born is well below the minimum required for simple generational replacement. Only one of every five women of reproductive age whose first marriage ended was legally married at the time of the survey. The average number of children among women in unregistered unions is higher than among never-married and divorced women, but lower than among married women" (Sinel'nikov, 2019).

<sup>3</sup> Zemlyanova E.V. (2003). Women's reproductive health as a factor in fertility in Russia: Candidate of Sciences (Economics) thesis. Moscow: ProfSof.

A number of works have studied the impact of education on women's reproductive behavior. Both Russian and foreign demographers reveal lower fertility in women with higher education (Arkhangelsky et al., 2019; Gustafsson, 2005), postponement of motherhood until obtaining a profession and economic security (Marini, 1984; Gustafsson, Worku, 2005; Lappegård, Rønsen, 2005).

Thus, the research results show the presence of features of reproductive behavior of urban women, namely markedly large timing shifts, the spread of small children, due to the values and lifestyle, which are characterized by the choice in favor of welfare and professional self-realization.

#### Research results

The results of the census in 2021 showed that in Moscow and Saint Petersburg the birth rate in real generations is significantly lower than in Russia as a whole and in urban population of the country (*Tab. 1*).

In Moscow the average number of children born in real generations is slightly higher than in Saint Petersburg (except for the age groups of 30–34 and 35–39). Among Russia's constituent entities, the average number of children born to urban women is lower than in Moscow (but higher than in Saint Petersburg) only in Voronezh (age 40–44 and 45–49) and Tula (age 45–49 and 50–54).

One of the factors promoting lower fertility in real generations in Moscow and Saint Petersburg may be the significantly higher education level of population. The share of women aged 15–49 who have higher education, according to the 2021 census, is 35.7% for Russia as a whole, 40.5% for the country's urban population, 47.1% in Moscow, and 47.4% in Saint Petersburg<sup>4</sup>. It is possible to eliminate the influence of these differences by comparing the average number of children born to women with higher education (*Tab. 2*).

<sup>4</sup> Results of 2020 All-Russian Population Census. Volume 3. Education. Table 1 ([https://rosstat.gov.ru/vpn\\_popul](https://rosstat.gov.ru/vpn_popul)).

Table 1. Average number of children born in real generations of women in Moscow, Saint Petersburg and Russia as a whole (per woman)

Age (years)	Moscow	Saint Petersburg	Russia	
			Whole population	Urban population
20–24	0.13	0.10	0.31	0.25
25–29	0.48	0.45	0.90	0.79
30–34	0.93	0.94	1.37	1.26
35–39	1.24	1.26	1.61	1.50
40–44	1.37	1.36	1.66	1.54
45–49	1.34	1.29	1.60	1.48
50–54	1.31	1.24	1.60	1.45
55–59	1.31	1.26	1.68	1.52
60–64	1.35	1.32	1.77	1.62
65–69	1.34	1.32	1.80	1.65
70 and over	1.32	1.28	1.84	1.66

Source: Results of 2020 All-Russian Population Census. Volume 9. Fertility. Table 1. ([https://rosstat.gov.ru/vpn\\_popul](https://rosstat.gov.ru/vpn_popul)).

The difference in fertility rates in real generations in Moscow and Saint Petersburg from the whole and urban Russian population for women with higher education is significantly lower than for all women (for example, while the average number of children born in Moscow for all women aged 45–49 is 0.26 lower than in Russia as a whole, and by 0.14 compared to urban population, for women with higher education – by 0.12 and 0.08, respectively; at the age of 35–39 for all women as a whole – by 0.37 and 0.26, for women with higher education – by 0.26 and 0.21), but still remain.

We should note that, according to census data, in Moscow and Saint Petersburg, women with higher education have a higher average number of children born in the age groups of 40 to 55 years than women with lower education levels and, consequently, than all women (see Tab. 1 and 2).

In the cohorts of younger women in Moscow and Saint Petersburg the indicator of the average number of children born differs more significantly from the value for the country as a whole. Age differences may be both generational in nature (i.e. more significant in younger generations) and related

Table 2. Average number of children born in real generations of women with higher education in Moscow, Saint Petersburg and Russia as a whole (per woman)

Age (years)	Moscow	Saint Petersburg	Russia	
			Whole population	Urban population
20–24	0.12	0.07	0.18	0.17
25–29	0.40	0.34	0.64	0.60
30–34	0.89	0.86	1.20	1.15
35–39	1.24	1.24	1.50	1.45
40–44	1.39	1.36	1.56	1.52
45–49	1.37	1.30	1.49	1.45
50–54	1.32	1.25	1.46	1.40
55–59	1.31	1.25	1.49	1.43
60–64	1.35	1.31	1.58	1.52
65–69	1.35	1.31	1.62	1.55
70 and over	1.29	1.26	1.57	1.51

Source: Results of 2020 All-Russian Population Census. Volume 9. Fertility. Table 5 ([https://rosstat.gov.ru/vpn\\_popul](https://rosstat.gov.ru/vpn_popul)).

to a later, on average, onset of childbearing, a shift in the age pattern of fertility toward older ages in Moscow and Saint Petersburg. The share of women who give birth to their first child aged under 30 in Moscow is 80.0%, 79.6% in Saint Petersburg, 88.6% for Russia as a whole, and 87.0% for the country's urban population, while the share of women under age 25 is 49.4%, 47.8%, 65.1% and 61.4%, respectively<sup>5</sup>.

One of the factors that may contribute to a lower birth rate in Moscow is the relatively high proportion of people in unregistered marital relationships. Among those who consider themselves married, the share of those whose marital relations are not registered is 16.8% for women aged 25–29 (this age group has the highest fertility rate) in Moscow and Saint Petersburg, 12.9% for Russia as a whole, and 12.7% for urban women in the country<sup>6</sup>.

At the same time, according to a sociological study conducted in Moscow in 2021, the average number of children born varies depending on whether the marital relationship is registered or not (*Tab. 3*).

In all age groups of interviewed women, the average number of children born is significantly higher in married women than in those without marriage ( $p < 0.05$ ): the difference ranges from 0.48 for 40–44-year-old women to 0.89 for 20–24-year-olds.

Among those whose marital relationship began in 2010–2018 (i.e., at least 3 years have passed since the beginning of the relationship), if the marriage is registered (at the time of the survey), the proportion of those who have no children born is 18.5%, and 38.8% if the marital relationship is unregistered.

Depending on marital status and marriage registration, reproductive orientations differ as well, which primarily include the expected and desired number of children.

In this sociological research in order to check the influence of question wording on answers about reproductive orientations, in contrast to most of the earlier studies of reproductive behavior, first we asked the expected number of children (“How many children, including the existing ones, are you going to have?”), and then the desired number. And we emphasized on the situation with all the necessary conditions for having children (“Imagine a situation where you have all the necessary conditions to have children. Would you like to have more children than you are going to have now?”). Only those who answered “yes” were asked about the desired number of children “How many children in total, including those you have now, would you like to have if you had all the necessary conditions?”<sup>7</sup>. As a result, the average desired number of children,

Table 3. Average number of children born by age and marriage registration

Age, years	Married	Living together (civil marriage)	Difference
20–24	1.00	0.11	0.89
25–29	0.83	0.20	0.60
30–34	1.17	0.64	0.53
35–39	1.47	0.89	0.58
40–44	1.88	1.40	0.48
45–49	1.74	1.00	0.74

Source: hereinafter, data from the sociological survey, 2021.

<sup>5</sup> According to: Results of 2020 All-Russian Population Census. Volume 9. Fertility. Table 4. ([https://rosstat.gov.ru/vpn\\_popul](https://rosstat.gov.ru/vpn_popul)).

<sup>6</sup> According to: Results of 2020 All-Russian Population Census. Volume 2. Age and gender composition and marriage status. Table 5 ([https://rosstat.gov.ru/vpn\\_popul](https://rosstat.gov.ru/vpn_popul)).

<sup>7</sup> In calculating the distributions for the desired number of children and its average value, those who answered “no” to the question about wanting more children than they were going to have and, accordingly, who did not answer the question about the desired number of children, the expected number, it means that the number they were going to have, was noted as the desired number.

according to the survey, was very high (2.73), one and a half times higher than the average expected number of children (1.81). For comparison, according to data from the Sample survey of population's reproductive plans, conducted by Rosstat in 2017, the average expected number of children for women in Russia as a whole (1.88) is slightly higher than in this study, while the average desired number (2.15)<sup>8</sup> is significantly lower.

Those who are in a registered marriage have not only a higher average number of children born, but also significantly higher reproductive orientations (*Tab. 4*), as compared to those whose marital relations are not registered.

The average expected number of children of married couples (2.00) is 0.43 more than that of those who are not married (1.57). Those who live together without registration have even fewer children than those who were married before (1.76) and never married (1.62). The average desired number of children of those who have been married before (2.90) is slightly higher than that of those who are registered (2.86), but for those who live together without registration it is significantly lower (2.55).

Thus, there are reasons to talk about the relationship between registration of marital relations and reproductive behavior. Probably the absence of registration determines the orientation to have fewer children. However, the main determinant here, apparently, is the importance of family life, which affects both marital and reproductive behavior.

Another factor determining the relatively lower number of children born to Muscovite women is, if it is possible to say so, the generational transmission of the tradition of small children. In most Moscow families, the norms of small children have been formed for a relatively long time. And our research results, as well as a number of others conducted at different times in various Russia's regions, show a significant dependence of the number of children and reproductive orientations on the number of children in the parental family (*Tab. 5*).

In almost all age groups of respondents (except 45–49 years old) the highest average number of children born is recorded for women who grew up in a parental family with three or more children, and the lowest (except for 25–29 and 45–49 years old groups) for those who grew up in one-child families.

Table 4. Average expected and average desired number of children and age at first birth

Marital status	Average expected number of children	Average desired number of children	Difference
Married	2.00	2.86	0.86
Living together (civil marriage)	1.57	2.55	0.98
Nor married, but previously married (divorced, widowed)	1.76	2.90	1.14
Never been married	1.62	2.51	0.89

Table 5. Average number of children born depending on age and number of children in the parental family

Age, years	Number of children in the parent family		
	one	two	three or more
20–24	0.13	0.21	0.25
25–29	0.48	0.39	0.59
30–34	0.86	0.95	1.17
35–39	1.16	1.22	1.80
40–44	1.15	1.58	1.75
45–49	1.38	1.50	1.27

<sup>8</sup> [https://gks.ru/free\\_doc/new\\_site/RPN17/index.html](https://gks.ru/free_doc/new_site/RPN17/index.html)

Table 6. Average expected and average desired number of children in women depending on the number of children in the parental family

Number of children in the parent family	Average expected number of children	Average desired number of children	Difference
One	1.76	2.64	0.88
Two	1.78	2.64	0.86
Three or more	1.99	3.07	1.08

Women who grew up in families with a large number of children not only have a higher average number of children born, but also a lower average age at first birth and a shorter interval between the registration of marriage and the birth of the first child (protogenetic interval). Those who were an only child in the family have a mean age at first birth of 26.3 years; those who had two children in the parental family have a mean age of 25.7 years; three or more children have a mean age of 25.6 years. Those who grew up in a parental family with one child had an average protogenetic interval of 30.9 months, those with two children 24.1 months, and those with three or more children 21.9 months.

Respondents who grew up in families with three or more children have significantly higher average expected and average desired number of children (Tab. 6).

The average expected number of children for women who grew up in one-child families (1.76) and two-child families (1.78) is almost identical, and for those who grew up in families with three or more children – 0.2 more (1.99). Differences in the average desired number of children are even more

noticeable. For women who had one or two children in their parental families, it is the same, making 2.64, and for those who grew up in families with three or more children, the average desired number of children exceeds 3 (3.07; see Tab. 6).

It would seem that a relatively higher living standards in Moscow could contribute to a higher birth rate. In 2021, the share of population with incomes below the subsistence level in Moscow was 5.5%, which is half as high as in Russia as a whole (11.0%<sup>9</sup>). However, the research results (as well as most of the earlier ones) showed that a higher standard of living, relatively high average per capita income is associated with a smaller number of children (Tab. 7).

In most age groups of interviewed women, a significantly higher average number of children born occurs in the group with the lowest average per capita income (up to 20 thousand rubles). The only exceptions were the groups of women aged 25–29 and 45–49, where the average number of children born is the highest in the group with average per capita incomes of 20 to 50 thousand rubles. On the contrary, the lowest average number of children

Table 7. Average number of children born by age groups of women and average per capita income

Age, years	What is the amount of your family's income per family member per month? (thousand rubles)			
	up to 20	from 20 to 50	from 50 to 80	over 80
20–24	0.41	0.22	0.00	0.00
25–29	0.67	0.69	0.32	0.17
30–34	1.56	1.00	0.69	0.60
35–39	2.08	1.21	0.67	1.11
40–44	2.06	1.28	1.11	1.50
45–49	1.24	1.53	1.11	1.10

<sup>9</sup> <https://rosstat.gov.ru/folder/13397>

born is in the group with the highest average per capita income (over 80 thousand rubles). Only the age groups of 35–39 and 40–44 years are an exception (see Tab. 7).

It does not follow, of course, that lower average per capita income determines higher fertility and more children. First, average per capita income is taken into account at the time of the survey, not at the time of childbirth. Second, and most importantly, the data presented show only an inverse relationship between median per capita income and the number of children born, not an effect of income on the number of children. It is likely that, on the contrary, there is an effect of the number of children born on per capita income. With a larger number of children, other things being equal, the average per capita income in the family is lower on average.

However, a lower average per capita income is characterized by a higher number of children not only born, but also expected and desired (Tab. 8).

We note that the group with the lowest average per capita income has the biggest difference between the average desired and expected number of children. It is 1.18, while in other income groups it is from 0.81 to 0.89.

In assessing the relationship between average per capita income and reproductive orientations, at least three circumstances must be kept in mind.

First, living standards in general and income in particular influence mainly the conditions of realization of the need for children, so it is correct to consider this influence on the average expected number of children in groups homogeneous in terms of the desired number of children.

Second, reproductive behavior is probably influenced to a greater extent not by an objective characteristic of living standards, but by its subjective assessment.

Third, the desired number and the expected number of children include the number of children already present, so there is not only an impact of living standards on reproductive orientations, but also partly their impact on living standards.

While in general for all respondents, regardless of the desired number of children, with a higher average per capita income the expected number of children is on average lower, in the groups differentiated by the desired number of children there is no such pronounced inverse relationship (Tab. 9).

Table 8. Average expected and average desired number of children and average per capita income

Average per capita income, thousand rubles	Average expected number of children	Average desired number of children	Difference
Up to 20	2.06	3.24	1.18
From 20 to 50	1.79	2.68	0.89
From 50 to 80	1.72	2.53	0.81
Over 80	1.66	2.50	0.84

Table 9. Average expected number of children as a function of average per capita income and desired number of children

Average per capita income, thousand rubles	Desired number of children				
	1	2	3	4	5
Up to 20	0.80	1.41	2.05	2.45	2.95
From 20 to 50	0.80	1.63	1.86	2.31	3.06
From 50 to 80	0.93	1.52	1.96	2.00	3.27
Over 80	1.00	1.50	1.81	2.50	3.57

For women with the desired number of children 1 and 5 one can speak about the direct connection between the average per capita income and the average expected number of children. In other groups by the desired number of children there is no expressed connection between these indicators.

And, of course, it is important to note that differences in the value of the average expected number of children depending on the desired number of children in the groups homogeneous by the average per capita income are incomparably larger than, on the contrary, depending on the average per capita income in the groups homogeneous by the desired number of children, it means that the need for children differentiates reproductive intentions to a much greater extent than does the average per capita income.

As we have noted above, it is likely that people consider not only and not so much the amount of income as their satisfaction with their reproductive intentions when determining the degree of favorability of their living standards to realize their reproductive intentions.

If with the average per capita income, the relationship with the average expected and desired number of children is inverse, when using the indicator of satisfaction with family income the inverse relationship takes place only with the average desired number of children (*Tab. 10*).

The average expected number of children varies little depending on family income satisfaction: it is slightly higher in the medium range and lower in the low range. The average desired number of children is highest for those with the lowest income satisfaction scores, and lowest for those with the highest income satisfaction scores. Accordingly, with the worst

assessment of income satisfaction there is a big difference in the value of the average desired and expected number of children: 0–3 points – 1.16; 4–7 points – 0.93; 8–10 points – 0.70 (see *Tab. 10*). This is logical, as we can assume that the assessment of income satisfaction influences the perception of the conditions for the realization of the desired number of children.

Given this dependence of the difference between the average desired and average expected number of children on income satisfaction estimates, we can assume a direct relationship between these estimates and the average expected number of children in groups homogeneous in terms of desired number of children.

The most significant direct correlation between the assessment of satisfaction with family income and the average expected number of children is typical for women who would like to have two children given all the necessary conditions: when assessing the satisfaction of family income 0–3 points, the average expected number of children is 1.29; 4–7 points – 1.49; 8–10 points – 1.86. A direct correlation between the family income satisfaction score and the average expected number of children also takes place among those who would like to have five children (*Tab. 11*).

When the desired number of children is equal to 1 and 3, there are practically no differences in the average expected number of children depending on the assessment of income satisfaction, according to the research data. Those who would like to have four children have a significantly lower average expected number of children recorded with a low assessment of income satisfaction, and the highest with an average assessment of income satisfaction.

Table 10. Average expected and average desired number of children and income satisfaction ratings

Current family income satisfaction rating (on 10-point scale)	Average expected number of children	Average desired number of children	Difference
0–3	1.74	2.90	1.16
4–7	1.83	2.76	0.93
8–10	1.81	2.51	0.7

Table 11. Average expected number of children as a function of income satisfaction and desired number of children

Current family income satisfaction rating (on 10-point scale)	Desired number of children				
	1	2	3	4	5
0–3	0.88	1.29	1.93	2.14	3.00
4–7	0.90	1.49	1.93	2.47	3.08
8–10	0.85	1.86	1.95	2.40	3.38

The presented data testify to the presence of some connection between the average expected number of children and the average per capita income, its estimation. However, strictly speaking, they do not allow speaking correctly about the influence of living standards on reproductive intentions. Taking into account that the expected number and desired number of children include already existing children, the nature of the connection may also be affected by the influence of the number of children on living standards parameters.

To avoid this influence and to make a correct assessment of the influence of income, satisfaction with it, and living conditions on reproductive intentions is possible only for those who do not have children yet.

For the interviewed women who have no children, the group with the lowest average per capita income (up to 20 thousand rubles) is characterized by the highest average expected

and desired number of children. However, the differences in the values of these indicators in other groups in terms of average per capita income are comparatively insignificant (*Tab. 12*).

As we have already noted, it is reasonable to estimate the impact of average per capita income (as well as other characteristics of living standards) on the expected number of children in groups that are homogeneous in terms of the size of the desired number of children.

Almost in all groups of respondents by the desired number of children the average expected number of children is higher in those with the average per capita income over 50 thousand rubles than in those whose income does not exceed 50 thousand rubles (although the differences are insignificant among those who would like to have two and four children). The only exception is those who would like to have three children: they have a higher average expected number of children at a lower income (*Tab. 13*).

Table 12. Average expected and average desired number of children and average per capita income for those without children

Average per capita income, thousand rubles	Average expected number of children	Average desired number of children
Up to 20	1.82	3.26
From 20 to 50	1.44	2.31
From 50 to 80	1.53	2.31
Over 80	1.38	2.30

Table 13. Average expected number of children as a function of average per capita income and desired number of children for those who do not have children

Average per capita income, thousand rubles*	Desired number of children				
	1	2	3	4	5
Up to 50	0.60	1.48	2.10	2.08	2.36
Over 50	0.92	1.52	1.73	2.17	3.00

\* Due to the small number of groups of respondents without children, differentiated by average per capita income and the desired number of children, in this case only two groups are distinguished by the value of average per capita income.

Those who have no children have a higher estimate of satisfaction with family income and, on average, a higher expected number of children. On the contrary, the average desired number of children is inversely related. With a higher assessment of income, it is lower. Accordingly, at a lower assessment of satisfaction with incomes there is a considerably bigger difference between the average desired and the average expected number of children (0–3 points – 1.14; 4–7 points – 0.97; 8–10 points – 0.65), which is logical, as in this case women probably assess the possibility of having children and the desired number of children worse (Tab. 14).

A relatively larger, on average, expected number of children with a higher estimate of satisfaction with income among women who have no children is also recorded in most groups of women on the desired number of children (Tab. 15).

Women who have no children yet and would like to have two, three or five children given all the necessary conditions have a higher average expected number of children with a higher estimate of income satisfaction. If at the desired number of children equal to three the differences are relatively small, then at those who would like to have two or five children they are significant. At that time, we should note that while 11.1% would like to have

five children given all the necessary conditions, 30.8% would like to have two children, and this is the largest group by the desired number of children among those who do not have children yet (25.0% would like to have three children).

A lower average expected number of children with a higher estimate of family income satisfaction is typical only for those women who would like to have one or four children given all the necessary conditions. Apparently, it is necessary to keep in mind that the difference in the average expected number of children depending on income satisfaction score for those who would like to have one child is not high at all (0.03), and the average expected number of children for them is calculated for small groups of women (income satisfaction score of 0–5 points for 5 women, 6–10 points for 13 women).

It is worth noting once again that the differences in the average expected number of children in the groups of respondents with the same income or its estimation depending on the desired number of children are incomparably greater than in the groups with the same desired number of children depending on the income or its estimation (see Tab. 13 and 15). In other words, the need for children differentiates reproductive intentions to a much greater extent than does the average per capita income.

Table 14. Average expected and average desired number of children and income satisfaction scores for those without children

Current family income satisfaction rating (on 10-point scale)	Average expected number of children	Average desired number of children	Difference
0–3	1.38	2.52	1.14
4–7	1.47	2.44	0.97
8–10	1.69	2.34	0.65

Table 15. Average expected number of children as a function of income satisfaction and desired number of children for those who do not have children

Current family income satisfaction rating (on 10-point scale)*	Desired number of children				
	1	2	3	4	5
0–5	0.80	1.13	1.89	2.40	2.00
6–10	0.77	1.61	1.97	2.00	3.17

\* Due to the small number of groups of respondents who have no children, differentiated by assessment of satisfaction with family income and the desired number of children, in this case only two groups are distinguished by assessment of satisfaction with family income.

The desired number of children is largely determined by value orientations. In the course of the sociological research, two extreme groups of respondents were identified: family-oriented and individual values-oriented. The first group included those who gave a score of 5 to the value of living in a registered marriage and a score of 1 to the value of “being free, independent and doing what only I want”. The second group, on the contrary, includes those who gave 5 points for the value “to be free, independent and do what only I want” and 1 point for the value of living in a registered marriage. The first group included 46 female respondents, while the second group included 67.

In the family-oriented group, the average expected number of children is 2.20, and in the individual values-oriented group it is 1.30. The differences are even greater for the average desired number of children, 3.33 and 1.90, respectively. Whereas in the Moscow study, among the respondents from the two extreme groups of family-oriented and individual values, 40.7% were family-oriented and 59.3% were individual values-oriented, according to the 2022 Rosstat Sample Survey of Reproductive Plans of the Population, the proportion of family-oriented respondents from the two extreme groups was 87.7% and individual values were 12.3%, for example.

#### **Discussion and conclusion**

Thus, the fact of increased fertility among urban residents is not confirmed by calculations of fertility indicators for real generations of women, including in the largest megacities of the country – Moscow and Saint Petersburg. Sociological research confirms the influence of traditional factors (attitude to marriage, level of education, financial situation) on the reproductive strategies of Muscovite women.

For example, V.M. Medkov wrote about the influence of income on reproductive intentions in groups homogeneous in terms of need for children: “It is methodologically correct to analyze

the relationship between income and reproductive behavior results only in groups with the same need for children and with the same ratio of family and non-family orientations, as only in such homogeneous groups can the influence of various socio-economic factors be studied in pure form” (Medkov, 1983). The need to consider the influence of living conditions on fertility taking into account differentiation of the need for children was noted by V.A. Borisov, but as applied not to income but to living conditions: “The main shortcoming of the studies conducted so far, as it seems to us, is that researchers actually look for a direct link between living conditions and fertility, axiomatically assuming the same need for children among respondents...” (Borisov, 1976).

V.A. Borisov wrote: “The nominal value of income does not yet give an idea of family well-being without taking into account differences in the level of needs and the dynamics of their development” (Borisov, 1976, p. 152–153). According to V.M. Medkov, “a much larger role in determining the preferred numbers of children should probably be played not by family income itself, but by orientations on the desired level of income and the degree of satisfaction with the income available” (Antonov et al., 2002, p. 85). V.A. Belova and L.E. Darskii emphasized: “It is the subjective assessment of the material situation that underlies family planning” (Belova, Darskii, 1968, p. 35). R.I. Sifman noted: “From a theoretical and methodological point of view, when studying the influence of family income on the number of births in women, it is important to proceed from the position firmly established now in demographic research that it is not the absolute size of income that influences, but its evaluation by the family” (Sifman, 1976, p. 88). It means that the conclusion that income significantly less determines reproductive intentions than the need for children should be taken into account when developing forecasts and demographic policy

measures. At the same time, the influence of the level of income on the degree of realization of reproductive intentions has been proved: the higher the satisfaction with income, the lower the difference between the desired and expected number of children.

The influence of value orientations is also undeniable. A significantly higher proportion of female residents of Moscow, oriented toward individual values, as compared to the all-Russian

study, determines a lower fertility level (if we talk about fertility rates in real generations) in the metropolitan megacity. Characteristically, childlessness is fixed and transmitted: for Muscovite women, there is a special factor – the generational transmission of traditions of families with few children. Consideration of these fertility trends and peculiarities of reproductive behavior of Muscovite women may contribute to the effectiveness of demographic policy.

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