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The Impact of Employment Digitalization on Parenting Strategies

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Abstract. The aim of this study is to conduct a comparative assessment of the number of children and the time spent on childcare among Russians of reproductive age working in non-digital and digital (including remote) employment formats. The data source is the Rosstat sample observation database on the population's use of daily time budgets (N=27,082). The research methodology is based on a comprehensive approach to studying the digitalization of employment, the key feature of which is the use of information

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and communication technologies (ICT) at work. According to the All-Russian Classifier of Occupations, digital employment includes: 1) IT specialists; and 2) specialists who actively use ICT in their activities. Statistically significant differences in the average number of children were identified between groups with digital and non-digital employment, between remote and non-remote workers, and between representatives of flexible and other work schedule formats. Hypotheses that the time spent on childcare would differ depending on the level of employment digitalization were also tested. The conducted analysis of variance showed that the fertility rate in the group of workers with digital employment is lower than among those who work without using ICT. The remote work format does not have a statistically significant effect on the number of children; however, the flexibility of the work schedule demonstrates a certain influence: the digitalization of employment positively affects the amount of time devoted to children, both by mothers and fathers. The main conclusions of the study are as follows: the digitalization of job content does not have a direct impact on reproductive behavior; expanding access to remote work formats can positively affect fertility, provided there is flexibility in the work schedule. This aspect should be taken into account when developing corporate social support measures for employees with family responsibilities.

Key words: digitalization of employment, remote work, IT specialists, work-life balance, fertility, time for children, working parents.

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Introduction

Digitalization is rapidly permeating all spheres of human activity, including socio-labor relations. The share of remote employment and employment in the information and communication technology (ICT) sector is growing. The introduction of digital technologies into the world of work opens up both new prospects and new challenges related to finding appropriate approaches to socially regulating work schedules, the nature of work, workspace organization, and the legal nuances of formalizing non-standard employment contracts (Kolesnikova, Strebkov, 2020, p. 63).

The stage of analyzing the outcomes of the forced transition of a portion of the workforce to remote employment has now been completed. Findings from international, national, and regional sociological studies on the well-being of employees working remotely have been published (Gurova, 2020). A coherent framework of perceptions regarding the advantages and disadvantages of remote and hybrid employment has emerged, incorporating the views of both employees and employers. The most frequently cited key advantages include time savings on commuting and the ability to manage one's work schedule flexibly (Rudenko, Dolzhenkova, 2020, p. 52). The main drawbacks of the remote format – such as the lack of a properly organized workspace at home, the blurring of boundaries between work and personal life, and issues with tracking working hours leading to overwork and constant overtime – have been identified (Konobevtsev et al., 2019, pp. 11–12). Nevertheless, the accumulated body of empirical knowledge does not provide complete answers to questions concerning the future development of remote employment and digital technologies. Specifically, the question of how social standards and labor rights will evolve in the context of advancing digitalization remains unresolved. Given that traditional forms of personnel control

and management are losing their effectiveness in a remote work environment, there is a pressing need to develop new approaches to assessing labor productivity, ensuring work discipline, and protecting data (Zvyagintseva, Isaenko, 2019, p. 154).

Currently, it has been completed the stage of understanding the results of the force majeure transfer of part of the staff to the remote field of employment. The results of international, national and regional sociological studies on the well-being of remote workers have been published (Gurova, 2020). A framework of ideas about the advantages and disadvantages of remote and hybrid forms of employment has been formed, taking into account the opinions of both employees and employers. The main advantages most often include saving time on the road and the ability to flexibly manage their working hours (Rudenko, Dolzhenkova, 2020, p. 52). The main disadvantages in the context of the remote format are the lack of proper organization of the workspace at home, blurring the boundaries between work and personal life, problems with time management – they cause overemployment and constant overwork (Konobevtsev et al., 2019, pp. 11–12). The resulting body of empirical knowledge does not provide complete answers to questions about the future development of remote employment and digital technologies. In particular, the question of how social standards and labor rights will change in the context of growing digitalization remains unresolved. Given that traditional forms of personnel control and management are losing their effectiveness in remote employment, it is necessary to develop new approaches to assessing labor productivity, compliance with labor discipline and data protection (Zvyagintseva, Isaenko, 2019, p. 154).

From the employers' point of view, digitalization brings new challenges. In particular, there is an increasing need for information security, especially when employees work from home using personal devices to access corporate systems. Moreover, employers face difficulties in maintaining corporate culture and employee engagement, which can negatively affect team spirit, reduce the level of interaction among colleagues, and affect overall work efficiency (Minchenkova et al., 2023).

The global penetration of modern technologies into the world of work has brought up to date the problems of work-family-personal balance, as well as the issues of effectively combining digital employment with time devoted to children. Modern research is beginning to form a new direction in population economics, focusing on the impact of digitalization of socio-economic and labor relations on demographic processes and the transformation of reproductive attitudes (Mosakova, 2023; Baranova, Kataev, 2022). Few studies have examined the impact of access to the high-speed Internet in professional activities on women's reproductive behavior (Kalabikhina et al., 2020). Remote employment enables women to combine family and professional responsibilities more effectively, which is consistent with the context of national priorities. At the same time, the lack of clear boundaries between work and personal life, a sense of social isolation and an increase in stress levels can act as negative factors contributing to a decrease in fertility (Rusanova, 2020).

The relevance of studying the impact of digitalization of employment on demographic behavior is emphasized by a number of modern studies aimed at identifying cause-and-effect relationships between life satisfaction, including the number of children in a family. The results obtained require further research due to their inconsistency. For instance, based on data from the Russian Longitudinal Monitoring Survey of the National Research University Higher School of Economics (RLMS-HSE), the research of A.R. Kalinin and D.V. Yustratov found an average negative

relationship between having at least one child and life satisfaction. However, the opposite relationship is observed in the Northwestern and Ural Federal Districts: the probability of higher life satisfaction increases among respondents with three or more children (Kalinin, Yustratov, 2025). In conditions of low fertility and aging, it is important to identify significant factors influencing the formation of reproductive attitudes of the population toward increasing the birth rate, which is necessary for further adjustments to the state demographic policy.

Our study is a continuation of a series of studies on the impact of digitalization of employment on the social and demographic processes of society's development. Earlier, the author's team at the Ural school conducted research on the problems of digitalization of employment based on RLMS-HSE materials for 2011–2020, the results of which demonstrated the presence of positive socio-demographic effects of digitalization in the labor sector: among parents who actively use the Internet at work, the average number of children under 18 is significantly higher compared to those who do not uses; The groups of parents using Internet technologies have a higher level of satisfaction with life, work and well-being (Akulova, Tonkikh, 2023). However, a certain conditionality of the obtained results was revealed, due to the specifics of the RLMS-HSE open materials. The database available to researchers allowed only an indirect assessment of the contribution of the growth of remote forms of employment to the socio-demographic well-being of society. This paper is devoted to verifying the results of an analysis of the socio-demographic effects of digitalization of employment, carried out by the authors based on data from the RLMS-HSE.

The aim of our study is to conduct comparative estimates of the number of children and the time to care for them among working Russians of reproductive age, non-digital and digital, including remote, employment formats.

Theoretical and methodological framework of the study

Combining paid employment with household responsibilities, including child care, is an urgent research topic in the field of socio-economic and demographic processes, as well as issues of gender equality in families of working parents. Such studies use the theory of work-life balance (WLB) as a theoretical and methodological basis, as well as the provisions of the theory of the social construction of gender (Lorber, 2018), viewed through the prism of the gender-role concept of the double "burden of responsibility" that arises between paid work and personal life. employment and unpaid domestic work (Kurowska, 2020). The main body of gender studies of the division of domestic and parental labor is carried out using sociological methods of collecting empirical data. Surveys and studies are conducted by both government statistical organizations and initiative research groups.

The results of sample statistical surveys of the population in the 21st century show that women still take on most of the housework and child care. For example, in India, women spend an average of 4.47 hours per week caring for children and the elderly, sick or disabled, while men spend only 0.88 hours per week on these duties (Hirway, Jose, 2011). A study of the time budgets of Australian parents raising children with disabilities showed that caring for such children reduced the leisure time of working mothers, while fathers' time to take care of themselves remained unchanged (Brandon, 2007).

However, in countries with a high level of female paid employment or its dynamic growth, the number of hours spent by women and men on domestic work is converging. The factors regarding such convergence are also the growing level of women's education and processes of transformation of gender roles. Canadian studies have shown that the time spent on child care for parents of both sexes increased between 1986 and 2015, despite a decrease in the average number of children in a family. This

is probably due to the transition to more intensive parenting methods. Nevertheless, the traditional gender division of domestic work persists, with women still taking on most of the child care work (Frank, Frenette, 2021).

In the conclusions of most studies conducted in the pre-pandemic period, it is argued that working from home helps to facilitate the combination of professional and family responsibilities. This, in turn, has a positive effect on the balance between work and family, since there is no need to travel to work (Crosbie, Moore, 2004). However, in situations where parents work from home, mothers, unlike fathers, experience an increase in the time spent on household chores and child care (Hilbrecht et al., 2008). Some studies have identified negative consequences, such as disruption of boundaries between work and family life, as well as increased tension and stress associated with multitasking (Sullivan and Lewis, 2001). Nevertheless, supporters of working from home emphasize the main advantage of this employment model — flexibility in combining work responsibilities not only with family and parental functions, but also in other areas of life (Gregory, Milner, 2008).

It is important to note that the COVID-19 pandemic has contributed to an increase in interest in the issue of work-family balance in remote employment. A comparative analysis of the effects of remote work from home on parents with dependent children in Poland and Sweden, which differ in their models of gender division of domestic work, showed that men in both countries have higher opportunities to balance work with household and parental responsibilities compared to women. However, the difference between genders is less pronounced in Sweden. In society with a relatively equal distribution of gender roles (Sweden), the negative impact of working from home on the ability to balance professional and personal obligations affects representatives of both genders (Kurowska, 2020).

Cross-national assessments of responses from parents raising children under the age of 12, according to the 2021 online survey in Canada, Germany, Italy, Poland, Sweden, and the United States, revealed a positive relationship between telecommuting conditions, work-family balance, and life satisfaction. Fathers and mothers' self-assessment of satisfaction with the work-family balance was significantly higher in cases where parents worked in a standard mode before the pandemic and switched to remote work only during the pandemic. In the groups of respondents who worked from home before the pandemic, satisfaction with the work-family balance was higher only if they did not work overtime (Kurowskaj, Cukrowska-Torzewska, 2025).

In Russia, where significant interest in remote employment emerged in the context of the pandemic (remote work began developing much later than in the developed countries of America and Europe), research also demonstrates both negative and positive social and demographic effects (Loginov, Lopatina, 2021; Nabershukina, 2021). A gender analysis of the consequences of Russians transitioning to remote work during the pandemic showed that many men and women, who encountered remote work for the first time during this period, evaluated the remote work conditions predominantly positively. However, men provided positive assessments more often than women. This may be due to the fact that for women, the reduction in commute time led to an increase in time spent on childcare and household management, while for men, the most noticeable improvement was in the domain of leisure and social interaction (Tonkikh et al., 2025).

Pioneering studies of the influence of broadband Internet on fertility have revealed a positive relationship. In particular, in the work of Francesco C Billari, Osea Giuntella and Luca Stella "Does broadband Internet affect fertility?" conducted on panel data from population surveys in Germany, it

was found that among women aged 25–45, access to broadband internet has a positive effect on the birth rate within the group of highly educated women proficient in digital literacy. In the context of low fertility rates characteristic of Europe, access to broadband internet significantly increases the share of women working remotely or part-time. Furthermore, an increase in time spent with children and a rise in life satisfaction are observed (Francesco et al., 2019).

In the work by I.E. Kalabikhina, "The Impact of High-Speed Internet on Reproductive Behavior in Russia", which utilized panel data from the Russia Longitudinal Monitoring Survey – Higher School of Economics (RLMS-HSE) using a similar methodology, it was identified a similar positive correlation. Among women with secondary specialized or higher professional education who have access to high-speed internet, fertility rates are significantly higher, especially in the 25 to 49 age group. Given that the average age at first birth has shifted closer to 28 years, it can be concluded that the technical and professional ability to work remotely positively impacts fertility (Kalabikhina et al., 2020).

Thus, when analyzing the digitalization of employment specifically within the context of remote or hybrid work formats, a number of studies can be identified that confirm the existence of positive socio-demographic effects. These effects are associated with increased satisfaction with work-life balance and with making positive decisions regarding having children.

However, considering employment digitalization solely through the lens of digital work formats means ignoring the complex nature of this phenomenon. Bibliographic analysis of scientific publications has allowed identifying two broad approaches to defining digital employment.

1) "Narrow" approach: digital employment is understood exclusively as remote / distance work.

2) "Comprehensive" approach: the digital segment includes employment involving the use of ICT and digital platforms in the process of performing job functions (Kamarova, Tonkikh, 2023, p. 569).

We share the position of a number of scholars and practitioners who include in the concept of employment digitalization the integration of information and communication technologies into job functions, which leads to a transformation in the content of labor and is reflected in the labor market through increased demand for workers' digital competencies (Alekseeva, Sazonov, 2019). Digitalization of employment implies not only the use of digital work formats, but also the creation of digital products, as well as the transformation of the substantive essence of job functions due to the application of information and communication technologies (hereafter ICT).

This study is based on a theoretical premise assuming a comprehensive approach, according to which the key criterion for classifying a type of employment as digital is the use of digital technologies in the labor process; the organization of labor for digital workers can be standard or remote. This understanding aligns with foreign classifications and, in particular, does not contradict the methodology of Eurofound[1].

This theoretical framework determines the specific requirements for the methodology of forming an empirical database. The data should enable the assessment of time expenditures on children and also allow for the grouping of respondents into categories of digital and non-digital employment. Furthermore, it is necessary to identify respondents who are raising children.

Considering these requirements, the most suitable source of information is sample population surveys conducted using the self-observation method, where respondents record their time expenditures on various activities throughout the day (using time-use diaries).

[1] Eurofound (2020). New forms of employment: 2020 update. New forms of employment series. Luxembourg: Publications Office of the European Union.

Such sample household surveys, in comparison with traditional methods of population survey, allow obtaining more reliable information about the time spent on paid employment and parental work. The fact is that when conducting questionnaires, respondents often rely on their memories, which distorts the real picture. The method of consistent recording of respondents' activities in self-observation diaries is based on the use of a short-term period of memories (a day), which helps to minimize distortions in the reports. In addition, the classification of activities for which time is recorded in self-observation diaries is more detailed. For example, a comparative analysis of surveys of the Indian population on social and labor issues performed using different methods has shown that the use of diaries for monitoring the use of daily time has advantages over a questionnaire survey in terms of detail and completeness of data on labor activity. An alternative labor force survey (survey), conducted in accordance with the recommendations of the International Labor Organization (ILO) and the United Nations, records the main job and one or two secondary jobs, but does not take into account minor jobs performed in a short time as an employee, as well as unpaid activities for their own needs, and also does not record the costs of parental labor (Hirway, Jose, 2011).

The methodology of sample surveys of the time use survey of the population (TUS) is a widespread international practice. Filling out diaries of self-observation of activities during the day allows you to collect information about the time spent not only on paid work, but also on household production, social, community, parenting and other activities, including recreation. Data on how people allocate 24 hours a day is used to assess the impact of time expenditure patterns on household incomes, financial security, work-life balance, physical health, emotional well-being, and overall happiness.

The classification and types of activities during the waking period have national specifics. For example, the American survey methodology takes into account the time spent on "ponds, pools, and jacuzzis". We should note that the time spent caring for children is highlighted and detailed in any self-monitoring diaries. Using detailed TUS codes and personal information about respondents, it is possible to evaluate parental investments in children, aggregate and detail time use by demographic characteristics, and test hypotheses about women's roles in the labor market and at home (Hamermesh et al., 2025).

In conclusion of the theoretical and methodological review, we should say that at present the relationship between employment in professions with a high level of information technology use and the parental sphere of life remains insufficiently studied and represents a gap in existing scientific knowledge. The application of an integrated approach determines the scientific novelty of this study aimed at identifying the socio-demographic effects of digitalization of employment both in the context of remote work formats and in the context of traditional work formats characterized by the intensive use of information and communication technologies (ICT) in professional activities.

Materials, methods and hypotheses of the research

Taking into account the above, the empirical base of the author's research was formed on the basis of microdata from the last sample observation of the use of the daily time fund by the population for 2019 at the time of writing this article (the previous survey was conducted in 2014). The methodology for organizing selective surveillance is presented on the Rosstat website in the sections "Description of surveillance" and "Surveillance materials"[2]. According to the methodology of the sample survey, the respondents recorded in their observation diaries their main activities in

[2] Selective monitoring of the use of the daily time fund by the population. Federal State Statistics Service. Available at: https://rosstat.gov.ru/free_doc/new_site/population/urov/sut_fond19/index.html (accessed: 06.09.2024).

each 10-minute interval from 19:00 to 22:00. For example, the recordings could include the following phrases: "Taking the children to kindergarten", "Waking the children", "Helping the children get dressed", etc. When processing the data from the observation diaries, all activities related to children were summarized. Thus, in our study, time spent with children (in child care) is understood as time related to parenting and communication, transportation and child care.

We used the following methodological approach to study the relationship between the type of employment of respondents and the socio-demographic parameters of parenthood:

1) export data from the "Individual Questionnaire for persons aged 15 and over" (file "IND.sav") and the "Time Use Diary for Persons aged 15 and over" (file "DIARYSMODO.sav") in sav format. The data is available on the website of the Federal State Statistics Service "Selective monitoring of the use of the daily time fund by the population" in the "Microdata" / "Access Policy" section;

2) combining tabular data by a field containing the individual code of a household member; the following R language libraries were used to read and combine the data: Hmisc library for downloading SPSS files (files with the extension sav); the dplyr library for joining tables. An internal join was used (INNER JOIN type), which excludes rows that do not match in the linked table;

3) the selection of data for the study was carried out taking into account the following criteria: age of respondents – from 18 to 49 years; participation in economic activity – working/employed in the economy.

Thus, the array of observations included the personal characteristics and budgets of daily working hours of men and women aged 18 to 49 years, employed in paid employment. A total of 27,082 observations were selected, which is 82% of the total number of participants in the specified age group.

Next, we grouped the respondents by employment type in accordance with a comprehensive approach to understanding the phenomenon of digitalization of employment, reflected in the theoretical materials of this article (*Tab. 1*).

The list of specific professions of the first and second groups of digital employment correlates with the list of professions related to the intensive use of information and communication technologies by

Table 1. Grouping principle and characterization of observations selected into digital and non-digital employment groups

Digital employment		Non-digital employment
1 group: IT-specialists	2 group: ICT Specialists	3 group: Non-digital employment
Principle of selection		
Specialists whose profession is related to information technology: development, implementation, improvement and maintenance of software products and computer systems	Specialists who intensively use information and communication technologies (Internet technologies) in their work, but are not IT specialists	Respondents who work without the use of ICT in their work
Examples of selection		
Selection by All-Russian Classifier of Occupations (OKZ) codes: OKZ 251 – Software and application developers and analysts OKZ 252 – Database and network specialists ….	Selection by All-Russian Classifier of Occupations (OKZ) codes: OKZ 241 – Financial activity specialists OKZ 231 – University teaching staff …	The group includes observations that are not included in the digital employment category (based on the residual principle)
Source: own compilation.		

occupation groups, which are published annually by the Higher School of Economics in short statistical collections on the digital economy[3]. The selection of observations was carried out according to the codes of the "All-Russian Classifier of occupations", which are indicated in the microdata of observations. The OKZ code was determined by Rosstat specialists based on the answers to question 10 of the individual questionnaire: "Who did you work for? Please indicate the name of your profession and position".

In the observations related to the category of digital employment (IT and ICT Specialists), it was also identified subgroups of respondents who work remotely and those who work in other formats.

The selection of observations for the remote employment group was based on the answers to question 12 K 10: "Do you spend most of your working time at this job ...?" with the answer option "you work remotely (using the Internet)".

Table 2 presents the research hypotheses which indicates the test respondent groups. To test hypotheses H3 and H4, it was formed male and female subsamples of respondents with children under the age of 18. In these subgroups, women and men working in the flexible schedule format, as well as in other modes, were also distinguished. The grouping was based on the answers to question 14 and 11: "What is your work schedule?" – with one of the possible answers "Flexible working hours".

ANOVA analysis of variance was used to test hypotheses, and Tamhaine's criterion was used for pairwise comparison. Statistical data processing was performed using the R programming language in the RStudio development environment. Comparative assessments did not take into account the factor concerning redistribution of time spent on child care within the family if the respondents belong to the same household. This is a limitation for the conclusions of this study.

Table 2. Correlation of the hypotheses put forward with the test subgroups of the sample

Hypotheses put forward	Verification subgroups
H1: The average number of children under the age of 18 per 1 respondent will differ statistically significantly in the digital and non-digital employment groups.	1. IT-specialists; 2. ICT specialists; 3. Employees who do not use ICT in their work (hereinafter referred to as "non-digital employment")
H2: The average number of children under the age of 18 per 1 respondent will differ statistically significantly in the digital employment group of remote workers and respondents working in other employment formats.	1. IT and ICT specialists who specified the remote work format; 2. IT and ICT specialists who have indicated other non–remote work formats.
H3: The average number of children under the age of 18 per 1 respondent will vary statistically significantly depending on the work schedule.	1. IT and ICT Specialists, and employees of "non-digital employment" group who indicated flexible working hours; 2. IT and ICT Specialists, and employees of "non-digital employment" group who did not specify a flexible work schedule
H4: The average amount of time spent by working women caring for children per child under the age of 18 will vary between digital and non-digital employment groups.	Women with children under 18 years of age in groups: 1. IT-specialists; 2. ICT specialists; 3. Employees who do not use ICT in their work / non-digital employment
H5: The average amount of time spent by men caring for children per child under the age of 18 will vary between digital and non-digital employment groups.	Men with children under 18 years of age in groups: 1. IT-specialists; 2. ICT specialists; 3. Employees who do not use ICT in their work / non-digital employment
Source: own compilation.	

[3] Abdrakhmanova G.I., Vasil'kovskii S.A., Vishnevskii K.O. et al. (2023). Digital Economy: 2023: Short Statistical Collection. Moscow: HSE.

Let us present the gender and age characteristics of the identified groups of digital and non-digital employment (*Tables 3 and 4*).

The average age of the respondents in the IT specialist group was 33.67 years, which is statistically significantly lower than the average age of employees in other selected groups (Tab. 3). The highest age among the respondents is observed among those who belong to the category of "non-digital employment" (do not use ICT and the Internet in their professional activities). There is a significant predominance of men in the IT Specialists group (83.2% of the total number of specialists in this category). At the same time, the groups "ICT Specialists" and "non-digital employment" are dominated by women, their share is 64.3% and 53.3%, respectively. Differences in the proportions of men and women are statistically significant for all groups (Tab. 4). The proportions were compared using the χ^2 criterion, the results of which showed the significance of differences at the level of $p = 0.000$.

Of the 3,789 observations in the digital employment segment, 6.5% worked primarily remotely. Among the total number of respondents with children under the age of 18, 8.8% of the survey participants in the female group worked on a flexible schedule, while in the male subsample this figure was 17.9% of the participants.

Results and discussion

1. As a result of testing the H1 hypothesis about the difference in the number of children among respondents representing digital and non-digital employment groups, we revealed statistically significant differences. In a pairwise comparison using the Tamhain criterion, we found that the average number of children in the families of specialists in the "non-digital employment" group is statistically significantly higher than in the families of the "IT specialists" and "ICT Specialists" groups and the "Uses the Internet for work" group 2 ($p = 0.014$ and 0.012, respectively). *Figure 1* shows the spread of the average number of children by type of employment.

There were no statistically significant differences between the number of children in the digital employment subgroups ($p = 0.294$). Thus, the H1 hypothesis was partially confirmed. The difference in the number of children in the selected subgroups can be explained by a statistically significant difference in age between representatives of digital employment and representatives of non-digital

Table 3. Descriptive statistics on the age of respondents by employment groups

Employment groups	Number of respondents, people	Average age, years	Standard deviation
1. IT – specialists	519	33.67	6.505
2. ICT specialists	3 270	36.09	7.160
3. Non-digital employment	23 293	36.73	7.523
Total	27 082	36.60	7.475
Source: own compilation based on the Federal State Statistics Service. Results of the sample observation "Use of the daily time fund by the population". Available at: https://rosstat.gov.ru/itog_inspect.			

Table 4. Structure of observations by gender in the context of employment groups, %

Employment groups	Gender	
	Male	Female
1. IT – specialists	83.2	16.8
2. ICT specialists	35.7	64.3
3. Non-digital employment	46.7	53.3
Total	46.1	53.9
Source: own compilation based on the Federal State Statistics Service. Results of the sample observation "Use of the daily time fund by the population". Available at: https://rosstat.gov.ru/itog_inspect.		

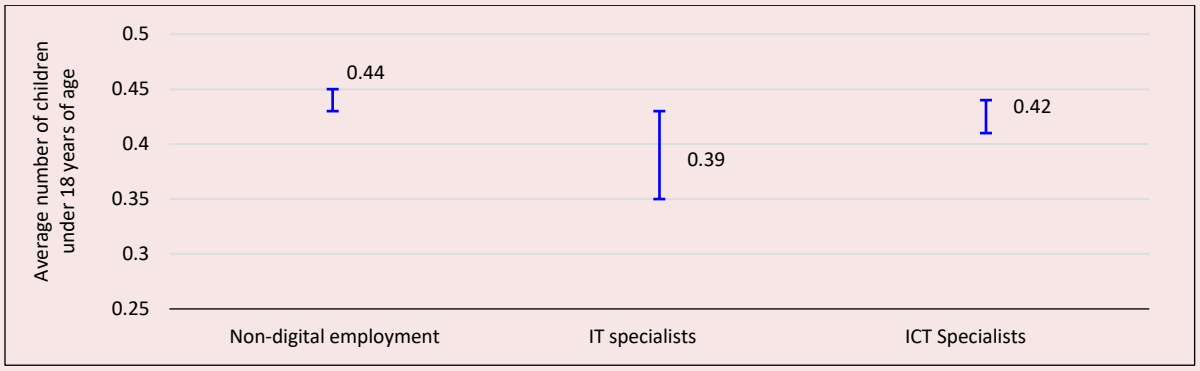
employment. Modern demographic statistics show an increase in the average age of mothers at first birth. There is a possibility that parents working in the digital employment segment will "catch up" with representatives of non-digital employment in terms of the number of children born.

2. To test the H2 hypothesis that there are differences in the number of children among respondents depending on the remote work format, data was collected and analyzed, limited to the digital employment subgroups of "IT specialists" and "ICT Specialists". This is due to the fact that remote work is impossible for non-digital employment respondents.

Figure 2 shows the graphical ratio of the average number of children in the families of remote employees and all other respondents related to digital employment.

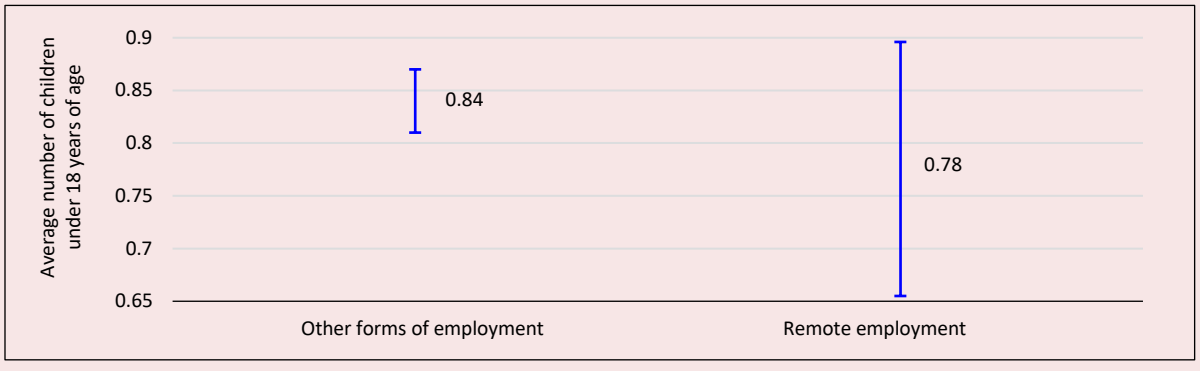
The value of the p-criterion, equal to 0.279, indicates that the differences in the number of children in the families of remote employees and all other respondents are not statistically significant. The null hypothesis cannot be rejected, and the alternative hypothesis H2 has not been confirmed. The hypothesis of differences depending on remote work was also tested among parents raising children under the age of 2 and at the age of 3–6 years. There were also no statistically significant differences.

Figure 1. Average number of children in the families of respondents with different types of employment



According to: results of the sample observation "Use of the daily time fund by the population". Available at: https://rosstat.gov.ru/itog_inspect

Figure 2. Average number of children in the digital employment group by job format



According to: results of the sample observation "Use of the daily time fund by the population". Available at: https://rosstat.gov.ru/itog_inspect

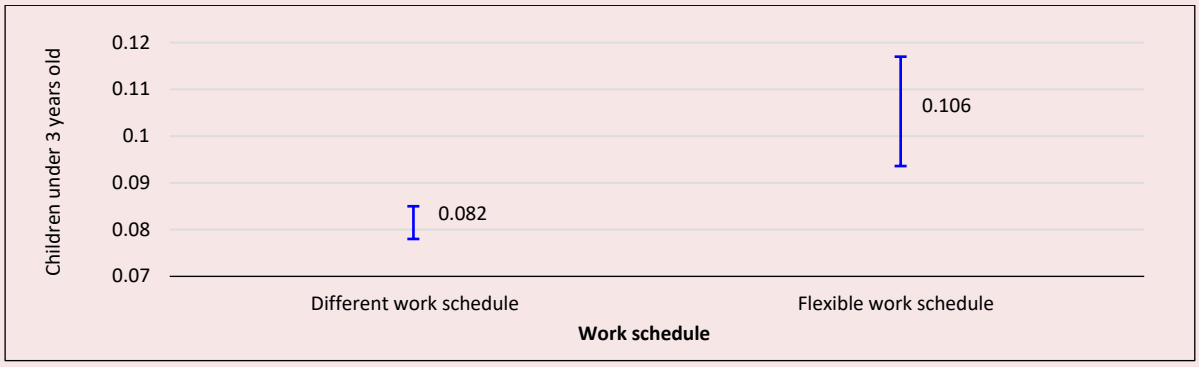
3. The study tested whether there were statistically significant differences in the number of children depending on the flexibility of the work schedule (hypothesis H3). There were no statistically significant differences in the groups of parents with children under the age of 18. However, when the subsample was narrowed down to parents raising children under the age of three, such a difference was revealed. In the group of parents with flexible working hours, the average number of children per respondent is statistically significantly higher (*Fig. 3*).

It is worth saying that testing the hypothesis in the subgroups of digital and non-digital employment showed that the digitalization of labor content does not affect the number of young children in families. The dependence shown in Figure 3 is also observed among "non-digital" employment representatives.

4. As part of the testing of the H4 hypothesis, we created a graphical representation of the data that visualizes the time spent ratio on child care (in minutes per day) per child under the age of 18 for women with different employment types (*Fig. 4*).

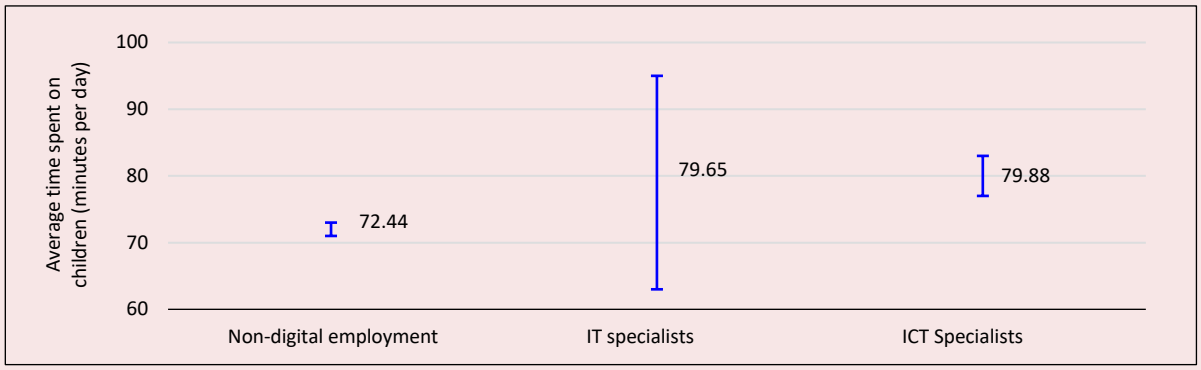
When testing the null hypothesis about the equality of the average time spent on childcare per 1 child under the age of 18 for women with different types of employment, the following result was

Figure 3. Average number of children aged 0–3 years per respondent in terms of work schedule



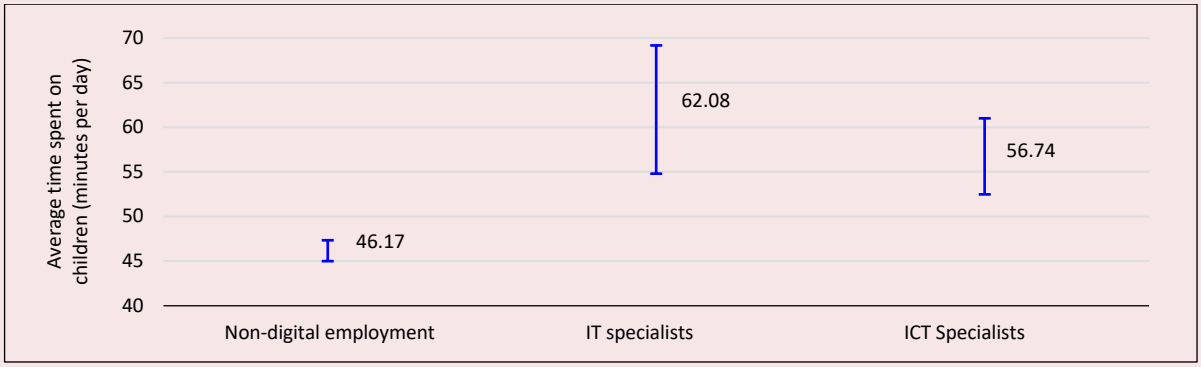
Source: own compilation based Federal State Statistics Service. Results of the sample observation "Use of the daily time fund by the population". Available at: https://rosstat.gov.ru/itog_inspect.

Figure 4. Time spent ratio on child care (in minutes per day) per 1 child under the age of 18 for women with different employment types



Source: own compilation based Federal State Statistics Service. Results of the sample observation "Use of the daily time fund by the population". Available at: https://rosstat.gov.ru/itog_inspect.

Figure 5. Time spent ratio on child care per 1 child under the age of 18 for men with different employment types, minutes per day



According to: Results of the sample observation "Use of the daily time fund by the population". Available at: https://rosstat.gov.ru/itog_inspect.

obtained: women in group 2 "ICT specialists" spend more time with children than women in group 3 "Non-digital employment" ($p = 0.06$). There were no statistically significant differences between the average time spent on child care per 1 child under the age of 18 for women in group 1 "IT specialists" and group 3 "Non-digital employment" ($p = 0.114$). There were no statistically significant differences between the average time spent on child care per 1 child under the age of 18 for women in group 1 "IT specialists" and group 2 "ICT specialists" ($p = 0.569$). The H4 hypothesis has not been confirmed.

5. *Figure 5* graphically presents the results of testing hypothesis H5 on the presence of differences in the time devoted to children by working fathers of different types of employment.

We obtained the following results in the course of testing the null hypothesis about the equality of the average time spent on childcare per child under the age of 18 for men with different types of employment: men from the "Non-digital employment" group spend less time on children than men from the "IT specialists" and "ICT Specialists" groups ($p = 0.000$ for each comparison pair). At the same time, there were no statistically significant differences between the average time spent on childcare for men from the "ICT specialists" and "Use the Internet for work" groups ($p = 0.511$). Thus, the H5 hypothesis was confirmed. Fathers working in the digital employment segment spend more time with their children than those who work without the use of ICT technologies.

It is worth noting that in each of the identified groups of working parents, women spend on average twice as much time caring for children. In the groups of "Non-digital employment" and "ICT Specialists" this ratio is 2:1, while in the group of IT specialists it is 1.8:1.

Conclusion

The research results confirmed most of the hypotheses put forward by us, including the hypothesis of the relationship between fertility and digitalization of employment. However, the nature of this relationship turned out to be negative, not positive, as was assumed from the theoretical materials. The average number of children under the age of 18 among parents in the digital employment group is statistically significantly lower than among parents who work without the use of digital and the Internet technologies. At the same time, no statistically significant differences in the number of children were found within the digital employment groups (IT specialists and specialists who actively use ICT in their work). The explanation for

the revealed difference can be a statistically significant difference in the age of the respondents: representatives of digital employment, as a rule, are younger. Given the current trend toward an increase in the age of mothers at first birth, it is likely that parents from the digital employment sector will "catch up" with representatives of the non-digital sphere in the number of children born in the future. However, the risks of reducing the birth rate associated with further digitalization should also be taken into account. These risks are caused by the increasing qualification requirements for workers in the digital sectors, which leads to the need to increase the duration of professional training, and an increase in the women's education level can have a negative impact on fertility.

The hypothesis that there are differences in the number of children among respondents in digital employment depending on the format of work (remote or traditional) has not been confirmed. This applies to both parents raising children under 2 years of age and those raising children aged 3–6 years, where there were also no statistically significant differences. However, among parents with flexible working hours, there was a statistically significant excess of the average number of children aged 0–3 years per respondent.

The results of the analysis of the time use survey of working parents indicate the preservation of the traditional gender model of parental responsibilities in Russia. Working mothers in each of the employment groups under consideration devote twice as much time to their children as fathers in the same groups.

We revealed positive impact of digitalization of employment on the amount of time devoted to children. Men and women in digital employment groups spend significantly more time with children than parents working in traditional sectors. We can conclude that digitalization of employment provides more flexibility in organizing one's time, which makes it possible to spend time with children together.

The results obtained do not confirm the conclusions of our previous work based on materials from the Russian Longitudinal Monitoring Survey – Higher School of Economics (RLMS-HSE) for 2011–2020, which found that the average number of children under 18 among respondents who use the Internet in their professional activities is statistically significantly higher than those who does not use the Internet for work purposes (Akulova, Tonkikh, 2023). The results of our study do not refute or confirm the conclusions of colleagues about the positive impact of broadband Internet availability on fertility through the indirect opportunity to work remotely (Francesco et al., 2019).

In our opinion, the comparative estimates of the relationship between the remote work format of fathers and mothers with the average number of children presented in this article have a higher relevance. This is due to the fact that the database of a sample survey of daily time spent by the population allows accurately identifying a group of remote workers. The conclusions on the RLMS-HSE for 2011–2020 were made with the assumption that respondents who use the Internet at work have the opportunity to work remotely. Similar assumptions have also been made in studies devoted to comparative estimates of fertility depending on access to broadband Internet.

Thus, it can be concluded that the digitalization of labor content does not have a direct impact on reproductive behavior. However, expanding access to remote work formats can have a positive impact on fertility only if the work schedule is flexible. By itself, the deleted format does not affect the parent scope. It is precisely the flexibility of the work schedule that is an important factor for the successful combination of paid work with the upbringing of young children and can have a positive impact on reproductive plans. We believe that this aspect should be taken into account when developing corporate social support measures for employees with family responsibilities. Within

the framework of corporate social programs, it is recommended to introduce support measures, such as providing flexible working hours and remote work formats. As promising areas of research, it is advisable to consider monitoring calculations based on materials from a future sample survey of the use of the daily time fund by the population, as well as a "dynamic" panel analysis of changes in the employment format in the context of the appearance of a child, using data from the Russian Longitudinal Monitoring Survey – Higher School of Economics.

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