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Digital technologies in the Russians' everyday life: analysis based on the opinion surveys

Abstract. Recently, the global COVID-19 pandemic has become the most topical matter of public consciousness. In this regard, digitalization, which offers the so called remote models of social communications, is becoming the most topical issue not only among the expert community of politicians, economists, scientists and public figures, but also among ordinary people. The global pandemic has determined both the speed and the global networked nature of the spread of the digital environment in national sociocultural contexts. This determines the special relevance of the problems of professional assessment of the digital environment in the mass consciousness of the Russians. The imperative digitalization of basic social institutions, such as medicine and education, requires the consumer to activate adaptive-compensatory reserves, master new forms of communication and interaction as well as a reflexive response. Basing on the carried out sociological empirical studies (mass surveys of the population), the article presents the results which allow us to see the current state of public reflection on digitalization against the background of the COVID-19 pandemic in 2020, to objectively describe the subjective assessments of the spread of the DT culture thinking patterns and practices in the socio-cultural environment of Russia. As a result, it has been revealed that in all institutional practices, except for family ones, the respondents agree with the need to promote the implementation of digital technologies. The respondents did not demonstrate a high level of negativity or put forward proposals to significantly limit digitalization for all the questionnaire items. At this stage, it can be argued with a certain degree of certainty that digitalization patterns are translated in the context of the reproduction of sociocultural relations for which they have become typical.

Keywords: Industry 4.0; Digital Technology; Public Opinion; Social and Technical Landscape; Technological Progress; Social Changes

JEL Classification: O33; P17; Z13

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Цифрові технології в повсякденному житті росіяни: аналіз на основі опитувань громадської думки

Анотація. Останнім часом найбільш актуальним трендом, що знаходиться в фокусі суспільної свідомості, є світова пандемія COVID-19. У зв'язку з цим цифровізація, що пропонує віддалені моделі соціальних комунікацій, стає найбільш кон'юнктурною темою не тільки в експертному співтоваристві

політиків, економістів, учених, громадських діячів, але й пересічних громадян. Світова пандемія визначила як швидкість, так і глобальний мережевий характер поширення цифрового середовища в національних соціокультурних контекстах. Цим визначається особлива актуальність проблем професійної оцінки «цифри» в масовій свідомості росіян.

Імперативна цифровізація основних соціальних інститутів, у першу чергу таких, як медицина й освіта, вимагає від споживача активізації адаптивно-компенсаторних резервів, освоєння нових форм комунікацій і взаємодії, а також рефлексивного відгуку.

Нами були проведені соціологічні емпіричні дослідження (масові опитування населення), результати яких дозволяють побачити поточну картину суспільної рефлексії цифровізації на тлі пандемії COVID-19 в 2020 році, об'єктивно описати суб'єктивні оцінки поширення патернів мислення й практик диджитал-культури в соціокультурному середовищі Росії.

Ключові слова: індустрія 4.0; цифрові технології; суспільна думка; соціотехнічний ландшафт; цифровізація; технологічний прогрес; соціальні зміни.

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Цифровые технологии в повседневной жизни россиян: анализ на основе опросов общественного мнения

Аннотация. Последнее время наиболее актуальным трендом, находящимся в фокусе общественного сознания, является мировая пандемия COVID-19. В связи с этим цифровизация, предлагающая удаленные модели социальных коммуникаций, становится наиболее конъюнктурной темой не только в экспертном сообществе политиков, экономистов, ученых, общественных деятелей, но и рядовых обывателей. Мировая пандемия определила как скорость, так и глобальный сетевой характер распространения цифровой среды в национальных социокультурных контекстах. Этим определяется особая актуальность проблем профессиональной оценки «цифры» в массовом сознании россиян.

Императивная цифровизация основных социальных институтов, в первую очередь таких, как медицина и образование, требует от потребителя активизации адаптивно-компенсаторных резервов, освоения новых форм коммуникаций и интеракции, а также рефлексивного отклика.

Нами были проведены социологические эмпирические исследования (массовые опросы населения), результаты которых позволяют увидеть текущую картину общественной рефлексии цифровизации на фоне пандемии COVID-19 в 2020 году, объективно описать субъективные оценки распространения паттернов мышления и практик диджитал-культуры в социокультурной среде России.

Ключевые слова: индустрия 4.0; цифровые технологии; общественное мнение; социотехнический ландшафт; цифровизация; технологический прогресс; социальные изменения.

1. Introduction

In the context of the global COVID-19 pandemic, digitalization is becoming the most topical issue not only in the community of politicians and economists, but also among ordinary people. The diffuse nature of digital technologies (DT) in consumer social practices is reaching great dimensions in Russia. In this regard, the issues of social reflection on the effects of digitalization and their assessment in the mass consciousness of the Russians are becoming more and more significant. The so called imperative digitalization of basic social institutions, primarily, such as medicine and education, requires the consumer to activate adaptive-compensatory reserves, master new forms of communication and interaction as well as a reflexive response.

Nevertheless, in the Russian scientific literature, this issue is still on the periphery of research interest. To fill this gap, we have carried out a sociological empirical study (mass surveys of the population), the results of which allow not only assessing the current state of public reflection on digitalization in 2020, but also seeing its real status in comparison with the 2019 data presented in the previous work (Kamensky & Grimov, 2019). This will provide an opportunity to find out what the impact of COVID-19 on the spread of the patterns of thinking and DT culture practices in the real socio-cultural environment is.

2. Brief Literature Review

It should be noted that in 2020, in comparison with the work presented earlier (Kamensky & Grimov, 2019), no large-scale empirical studies on the integration of Russian ordinary people into intensive digitalization processes appeared. A similar situation is observed in the research community of foreign authors. It is still possible to mention a number of topical research issues related to the problem under consideration. They include socio-humanitarian aspects of convergent technologies and technoscience (Aseeva, 2015, 2016, 2017; Budanov, 2015); interfaces of

sociology and cyberspace (Romanovsky, 2000); the crisis of technogenic civilization and innovative development (Boev, 2015); socio-humanitarian expertise of biomedical innovations (Aseeva & Budanov, 2015); ethical aspects of NBIC-convergence (Grebenshchikova, 2016); a new paradigm of sociology in a complex society (Kravchenko, 2012); socio-cultural transformations of global modernization (Matveeva & Sarapultseva, 2019); answers to the question «How does humanitarian visuality work?» (Kurasawa, 2015); problems of digital culture (Rius-Ulldemolins, Pecourt & Arostegui, 2019); sociological analysis of Big Data (Cointet & Parasie, 2018); issues of digital health and medical innovation (Lennon, 2019); sociology of private life (Anthony, Campos-Castillo & Horne, 2017); a sociological research on digital media (Fero, 2015); issues of cyber-utopianism (Rius-Ulldemolins, 2015), etc. However, in 2019-2020, some works on the issues of our interest were published (e.g. Sobolnikov, 2020; Grimov, 2019).

3. Purpose

The purpose of the paper is to present the results of a mass survey of the Russians on the issues relating to digital technologies in their life based on the materials obtained in 2020, which characterize the spread of consumer DT practices in the main institutional spheres of society against the background of the COVID-19 pandemic.

4. Methodology

The research was carried out by using a questionnaire method; it has an exploratory character and serves as a tool for testing the techniques for studying the problem set in the article. The survey was conducted in 14 cities which are regional centers of the Russian Federation, including Moscow and St. Petersburg; sampling is random, continuous (N = 1.200). While surveying, the approximate sex and age proportions were observed. The work presents the most significant statistical results. Access to the statistical databases of the study is provided on the resource sociokursk.ru (http://sociokursk.ru/?page_id=4703).

5. Results

When verifying the tasks, it is indicative how citizens assess the level of use of digital services in 2020, compared to 2019 in various institutional practices, which, of course, was facilitated by the events related to the COVID-19 pandemic.

In general, 50% of the respondents began to use various digital technologies more, and for 36.7% of the respondents the extent of the use of DT did not change over the year, which together clearly illustrates the significantly increased role of digitalization of social relations in typical consumer practices. The largest increase in the number of people using digital services is in the field of ordering food (41.3%) and ordering a taxi (40.7%). Further, 38.7% of the respondents began to use electronic services more often when paying for utility bills; 31.3% - when ordering/buying clothes; 22% - when paying fines. Also, it should be noted that the number of the respondents whose extent of DT use remained the same as in 2019 is large and averages 30%.

The smallest percentage of the population increased the extent of use of electronic services for car sharing (3.3%), while 82% of the respondents never used such services at all. The rank distribution for the entire sampling is presented in [Table 1](#).

However, the data presented in [Table 1](#) do not provide grounds for unequivocally asserting that certain consumer practices using DT have acquired the character of a «boom» in the face of the pandemic. This is confirmed by the results given in [Table 2](#).

As can be seen when comparing the ranking structures of [Table 1](#) and [Table 2](#), both of them almost completely mirror each other. That is, those who have almost never used electronic services in certain practices before, do not use them in the context of the current situation. One could argue that car sharing is unpopular in Russia even if we consider it without taking into account digitalization, but other areas of consumption, ranging from cosmetics to building materials, cannot be described as rare ones. In other words, today it is possible to statistically identify certain groups in the population that do not use digital assistants to meet current needs. However, utility payments, ordering taxi and buying food are gradually and steadily moving to the digital environment. By extrapolation, it can be assumed that the actual percentage of digital nihilists, regardless of the reasons, will be about 25-30%. In any case, the general trend is clear: consumer behaviour is subject to digitalization quite intensively, and, taking into account the timing of our empirical measurements, it is impossible to exclude the current pandemic

from the list of the reasons explaining this. DT pattern diffusion takes on not only typical, but also assimilating character.

Let us emphasize that the traditionalism of certain practices still persists regardless of the forms of their implementation. For example, only 12% of those surveyed more often applied for loans electronically, while 53.3% of the respondents never did it this way. At the same time, nowadays, the overall level of lending is quite high in Russia. The situation with exchange services is even more illustrative: 77.3% of citizens never considered them, and only 4.7% of the respondents became more active in this area. The situation in the field of foreign exchange transactions and investment is similar: 6% and 79.3%, and 3.3% and 84.7%, respectively. 12% of the respondents were more likely to work with bank accounts in the digital environment, and 55.3% of the respondents did not do that. Micro-loans and operations with cryptocurrency are at the lowest ranking position (Table 3 and Table 4). At the same time, 56.7% of the respondents most often made certain online payments in 2020, for 25.3% of the surveyed the situation did not change, and only 12.7% of them never used this opportunity.

Further, we will illustrate empirical results for selected institutional areas. The data on the situation concerning digitalization of consumer services in the field of medicine are indicative. The only practice that citizens began to use much more often in 2020 was an electronic medical appointment booking (32%) against the background of the fact that 40.8% of the respondents had regularly used this service before. 28.6% of the surveyed also used the opportunity of electronic services to provide test results more often, and 32% of the respondents turned to such a service as often as in 2019. Only 21.1% and 32% of the respondents, respectively, have never used these opportunities.

At the same time, people have never used and are not currently using the following universally legitimate digital services: telemedicine (83.7%), registration of a medical insurance policy card (73.5%), registration of a digital medical history (74.1%), registration of a digital medical card (64.6%) and remote medical consultations (57.1%). For the same items, a minimum increase in the use of the services provided was recorded. On average, it is no more than 5-6%, which reflects the stability of traditional consumer patterns in the analyzed institution. However, the main question is to find out reasons for such inertia. Only 29.7% of the consumers

Table 1:
Increase in the use of electronic services in typical consumer practices in 2020 (rank distribution by % of the respondents)

Ranking	%	Consumer practices
1	41.3	Buying food
2	40.7	Ordering taxi
3	38.7	Utility payments
4	31.3	Buying clothes
5	22	Paying fines
6	19.3	Buying cosmetics
7	13.3	Purchasing railway and other tickets
8	12	Buying medicines
9	10	Reserving hotels, accommodation
10	7.3	Buying sporting goods
11	4.7	Buying building materials
12	3.3	Car sharing

Source: Compiled by the author

Table 3:
Distribution of responses to the question: «Estimate how often you carried out the following practices in the digital environment in the field of financial activity - micro-loans in 2020 in comparison with 2019»

Response options	%
1. More often	0.7
2. More seldom	8.1
3. The same as before	9.5
4. Never used and do not use now	81.8
Total	100

Source: Compiled by the author

Table 2:
Frequency of use of electronic services in typical consumer practices which remained unchanged in 2020 in comparison with 2019 (rank distribution by % of the respondents)

Ranking	%	Consumer practices
1	82	Car sharing
2	70.7	Buying building materials
3	61.3	Reserving hotels and accommodation
4	56	Buying sporting goods
5	52.7	Buying cosmetics
6	50	Buying medicines
7	48	Purchasing railway and other tickets
8	34	Buying clothes
9	33.3	Paying fines
10	26.7	Buying food
11	23.3	Ordering taxi
12	22.7	Utility payments

Source: Compiled by the author

Table 4:
Distribution of responses to the question: «Estimate how often you carried out the following practices in the digital environment in the field of financial activities – transactions with cryptocurrency in 2020 in comparison with 2019»

Response options	%
1. More often	2.7
2. More seldom	5.4
3. The same as before	8.1
4. Never used and do not use now	83.8
Total	100

Source: Compiled by the author

noted that they did not have any difficulties in the field of digital institutional practices in health care services. The general distribution of the main difficulties is presented in Table 5.

As can be seen, the main problems are mediated by the human factor. The lack of specialists and feedback, difficulties with booking an appointment, lack of skills in using DT among medical personnel and patients cumulatively exceed purely technical problems. Consequently, a weak level of personal adaptation to digitalization, traditional organizational problems of management and professional responsibility of personnel rather than a low digitalization of the institution of medicine will most likely form negative attitudes of consumers and institutional agents towards digitalization policy.

In 2020, using messengers for communication, digital music and digital video services significantly increased in the field of leisure activities - 49.3%, 47.3%, and 39.9%, respectively. Only 18.2%, 16.9% and 16.9% of the respondents never used them. The use of these practices is at quite a high level, remaining at the level of 2019 - 23.6%, 31.8%, and 35.8%, respectively. It is indicative that despite the fears of a total brain capture by computer games on the network, the growth rate of using computer games is lower than in the above-mentioned leisure practices - 26.4%. 33.8% of the users played as much as before. At the same time, only 9.5% of the respondents turned to keeping their own blogs in 2020, and 77% never practiced blogging.

In 2020, a significant number of people read as much electronic publications as in 2019 (33.1%) or even more (22.3%). However, 20.3% of the respondents reduced the use of this form of leisure activity, and 24.3% of the surveyed never read periodicals on the Internet.

Online worship and online charity are still not popular. 86.5% and 76.7% of the respondents have never used such forms of practice, respectively. The growth of their popularity is on average at the level of 2% against the background of the stable statistical group that regularly uses these forms of activity at 1.4% and 10%, respectively. The level of popularity of excursions advertised online did not increase either (Table 6).

Rather small progress is observed in the field of using GPS tracking. Only tracking of postal items is gaining popularity (Table 7).

Despite the popularization of the possibilities and necessity of using GPS tracking for the control and safety of children and pets, it also does not find mass distribution (Table 8 and Table 9).

Even such insignificant manifestations of the Internet of Things as tracking devices have not gained the expected popularity in Russia yet (Table 10).

Let us dwell separately on the issues of digital education as the most circumstantial and debatable trend of 2020. First of all, we can identify certain nominal groups in respect of which the respondents noted certain difficulties. In particular, the respondents noted the lack of necessary

Table 5:
Distribution of responses to the question: «What problems did you face when using digital technologies in the field of medicine and health care?»

Response options	%
1. Difficulty in booking an appointment with a doctor	39.9
2. Lack of necessary specialists	31.8
3. Failure of digital services (system overload and other technical failures)	36.5
4. Lack of feedback (no response to requests)	28.4
5. Patient's inability to use electronic services	10.8
6. Medical worker's inability to use electronic services	18.2
7. Inaccessibility of the Internet connection due to the impossibility of paying for it	6.8
8. Inaccessibility of the Internet connection due to the territorial restrictions (there is no reception)	8.8

Source: Calculated by the authors

Table 6:
Distribution of responses to the question: «Estimate how often you performed the following practices in the field of leisure activities - online excursions in 2020 in comparison with 2019»

Response options	%
1. More often	9.5
2. More seldom	10.8
3. The same as before	14.9
4. Never used and do not use now	64.9
Total	100

Source: Compiled by the author

Table 7:
Distribution of responses to the question: «Estimate how often you used GPS tracking services for the following purpose - mailing in 2020 in comparison with 2019»

Response options	%
1. More often	26.4
2. More seldom	13.5
3. The same as before	30.4
4. Never used and do not use now	29.7
Total	100

Source: Compiled by the author

skills in implementing models of online education in groups of teachers (68.9%), among students' parents (45.9%), and among students themselves (22.3%). In the field of material and technical support for digital education, there is a lack of proper equipment (computers, mobile phones, etc.) (68.2%), software (50.7%), electronic textbooks, and other educational materials (36.5%). The mirror distribution of assessments of the level of motivation in the educational process looks somewhat curiously. The lower the level of difficulties in mastering DT forms of education in the nominal group, the lower the motivation is, which is 87.2% among students, 16.2% among students' parents, and 13.5% among teachers. A statistically similar distribution is observed when the respondents assess the problem of increasing the time spent in mastering DT educational process (Table 11).

The following problems were primarily noted among those arising from the use of digital technologies in the field of education:

- 1) failure of digital services (system overload and other technical failures) - 74.7%;
- 2) lack of face-to-face, live communication - 50%;
- 3) inefficiency of the knowledge control system - 45.3%.

As can be seen, the reduction of face-to-face communication in favour of online forms does not take the first place in the ranking, yielding to purely technical difficulties. Such a situation may already indicate a certain adaptation of the population to the fact of expanding digitalization. The compensatory reflection of the diffusion of DT practices is obvious, when, in the pandemic conditions, educational institutions were forced to transit to a digital format. Due to its institutional totality, this pattern received an adaptive-compensatory response from institutional agents much faster than, for example, in the field of medicine or finance.

It is noteworthy that in the field of leisure activities, purely technical problems play a significant role in assessing the existing difficulties (Table 12).

Table 8:
Distribution of responses to the question: «Estimate how often you used GPS tracking services for the following purpose - tracking the children's location in 2020 compared to 2019»

Response options	%
1. More often	5.3
2. More seldom	5.3
3. The same as before	9.3
4. Never used and do not use now	80.0
Total	100

Source: Compiled by the author

Table 9:
Distribution of responses to the question: «Estimate how often you used GPS tracking services for the following purpose - tracking the location of pets in 2020 compared to 2019»

Response options	%
1. More often	4.7
2. More seldom	5.3
3. The same as before	3.3
4. Never used and do not use now	86.7
Total	100

Source: Compiled by the author

Table 10:
Distribution of responses to the question: «Estimate how often you used GPS tracking services for the following purpose - tracking the location of devices in 2020 in comparison with 2019»

Response options	%
1. More often	6.8
2. More seldom	6.1
3. The same as before	8.8
4. Never used and do not use now	78.4
Total	100

Source: Compiled by the author

Table 11:
Distribution of responses to the question: «Have you faced an increase in the time spent on completing coursework when using digital technologies in education?»

Response options	%
1. Students	84
2. Teachers	24.7
3. Students' parents and representatives	24

Source: Compiled by the author

Table 12:
Distribution of responses to the question: «What problems did you face when using digital technologies in the field of leisure activities and communication?»

Response options	%
1. Lack of required skills	20.9
2. Confidentiality of communication	16.9
3. Depersonalization of communication	29.7
4. Inability to assess the emotional state of the opponent	21.6
5. Unreliability of information, its inaccuracy	43.9
6. Failure of digital services (system overload and other technical failures)	40.5

Source: Calculated by the authors

As can be seen from the table, the failure of digital services leads in the rank distribution, competing only with the possibility of information inaccuracy in the digital environment. Depersonalization, impossibility of perception and empathy are considered by the respondents twice less complex than the indicated ones.

According to the respondents, the problems of spreading DT practices at financial institutions are quite typical and do not have any peculiarities in comparison with 2019, which is also described in detail in the scientific periodicals of recent years (Table 13). The threat of embezzlement in the digital environment worries the population much more than data confidentiality and all other risks. In addition, about a third of the respondents still experience difficulties in developing the skills to use digital services in the field of financial transactions.

It is extremely significant that only 16.2% of the respondents have difficulties keeping up with new digital technology advances over the past year. 41.2% of the respondents assessed their skills at the same level as before, and 42.6% of the surveyed assessed their skills as improved. It goes without saying that this fact states a large-scale launch, and effectiveness of adaptive-compensatory processes shows the formation of a strong reflexive relationship between the traditional culture and DT culture of institutional practices. Such reflexivity, being an extremely latent variable, can still be measured in the respondents' assessments of the degree of the impact of digital environment on certain aspects of people's lives. Let us note that predominantly digital technologies did not have a significant impact on institutional practices in the opinion of the respondents. This may indicate a certain degree of naturalness of their integration into the phenomenology of the modern socio-technical order. In addition, there are some positive changes in certain institutional areas. For example, in education, improvement was noted in the case of 27.7% of the responses, while the negative impact was emphasized by 9.5% of the respondents. In other institutional practices, they are as follows:

- leisure activities: 6.1% and 18.2%;
- household sector: 4.7% and 16.2%;
- family life: 6.8% and 8.8%;
- professional activity: 8.8% and 27%;
- income stability: 4% and 19.3%.

Only in the field of health care, the negative effects are a little more pronounced than the positive ones (Table 14).

It is also extremely significant that in all institutional practices, except family practices, the respondents agree on the need to develop the scope of digital technologies implementation. A high level of negative response or any proposals on a significant limitation of digitalization were not observed for all positions of the questionnaire (Table 15).

Table 13:

Distribution of responses to the question: «What problems did you face when using digital technologies in the field of financial activity?»

Response options	%
1. Lack of skills	28.4
2. Low digital literacy	18.2
3. Insecurity of transaction operations	18.2
4. Threat of embezzlement	61.5
5. Bank access to confidential data	31.1
6. The ability of banks to manage clients' money	10.8
7. Higher level of bureaucracy	15.5
8. Document management both in electronic and paper forms	10.1

Source: Calculated by the authors

Table 14:

Distribution of responses to the question: «In what way have digital technologies affected the quality of your life in the field of health care over the past year?»

Response options	%
1. Worsened	18.2
2. No changes	67.6
3. Improved	14.2
Total	100

Source: Calculated by the authors

Table 15:

Distribution of responses to the question: «In which spheres of activity would you prefer to use DT applications?», %

Response options	Leisure activities	Education	Health care	Household activities	Professional activities	Family
1. to exclude	8.7	6.7	8.7	7.3	6.7	9.3
2. to limit	8.7	10.0	10.0	8.0	6.0	14.0
3. to keep without changes	53.3	29.3	29.3	55.3	32.7	60.0
4. to develop	26.0	50.7	47.3	24.7	52.7	8.7
5. it is difficult to say	3.3	3.3	4.7	4.7	2.0	8.0
Total	100	100	100	100	100	100

Source: Calculated by the authors

6. Conclusions

It can already be argued with a certain degree of confidence that digitalization patterns are translated in terms of the reproduction of sociocultural relations in which they are becoming typical. They are inherited, for example, as a gene in the process of biological replication, from one social agent (institution, group, personality) to another. Consequently, the social gene, or DT sociocode is transmitted to the social perspective, replicating in sociocultural, institutional, sub-institutional and subjective structures.

Thus, it can be argued that the replication of DT culture occurs through the replicated production and selection of its components, and, most importantly, its entire structure and relations of the digitized sociocultural hierarchical system, that is, the matrix of the norm of DT practices and their favourable environmental conditions.

This is the mechanism of closed determination (circular causality) of replication of DT patterns, cyclic reproduction and sequential transformation of terminal and instrumental values and norms in the adaptive-compensatory interaction of both the traditional culture and the DT culture.

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