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DIGITALIZATION OF RURAL TERRITORIES OF OMSK REGION AND PROFESSIONAL IDENTITY OF YOUTH

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Abstract

The paper describes some aspects of the digitalization of rural areas, the consideration of which allows generally assessing the level of digital transformation of a modern village, identifying the main problems of this process especially in the context of professional identity of youth. The analysis of official statistics showed that there is still a digital gap between the city and the village, the backlog of rural areas in the level of digitalization, which is a certain restriction, a negative factor for the professional identity of rural youth in the new innovative economic system. The sociological study made it possible to assess the modern state of professional identity of rural youth from the point of view of the influence of the environmental (settlement) factor. The comparison of data on the level of digital literacy and activity of rural and urban youth showed a lower level of students from rural areas in terms of their modern competencies necessary for effective professional identity and self-realization in the digital economy of the future. The paper also studies the measures taken by federal and local authorities to close the digital gap between the city and the village, create a modern digital environment designed to improve the quality of life of the rural population, create conditions for improving information literacy and develop modern competencies among rural youth. It is noted that the modernization of socio-cultural and information and communication infrastructure creates the necessary conditions for improving the quality of human capital in the village.

Keywords: Digitalization, professional identity, youth, rural areas, digital inequality

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1. Introduction

The digitalization of the economy is currently one of the priority national development goals of the state. Agriculture being one of the basic sectors of the Russian economy, as well as the agro-industrial complex and rural areas in general are undergoing an active digital transformation. The introduction of digital technologies in agriculture and digitalization of a village, on the one hand, are designed to provide a technological breakthrough in the agro-industrial complex and ensure the growth in labour productivity in the industry, which is critical in ensuring the food security of the country in the context of continuous political and global challenges, and on the other hand, to contribute to the sustainable development of rural territories, thus solving social problems and improving the quality of life of rural residents (Altukhov et al., 2019, p. 18).

The most important value of the modern digital economy, the knowledge economy, is the human capital, which is the socio-cultural resource of society acting as the main source of its innovative development (Grigoriev et al., 2018; Ishmurtaeva, 2019). In the conditions of digitalization of the agricultural sector of the economy, the need "for highly qualified specialists for agriculture with competencies in the field of digital economy to create the institutional basis for the digital transformation of agriculture" is also increasing (Departmental project "Digital Agriculture": official publication, 2019, p. 29).

In the modern world, where the development of the economy and society is increasingly determined by creativity and innovation, the importance of the human capital of youth, the most active, mobile, open to the whole new, socio-demographic group of the population, is growing. It is young people who serve an active subject of transformation and renewal of the society, the driver of the country's development, the most valuable human resource for economic growth and digital transformation. As noted in the "Fundamentals of the state youth policy of the Russian Federation for the period up to 2025" approved in 2014: "Global trends convincingly prove that the strategic advantages will be for those states that will be able to effectively and productively use the innovative development potential, the main carrier of which is youth" (Decree of the Government of the Russian Federation…, 2014). It is obvious that the success of the digital transformation and innovative development of the agricultural sector, as well as sustainable and stable functioning of rural settlements, also depends on the participation of young people in these processes, use of their potential, development of new competencies and qualities relevant and required in the digital economy format (Shumakova et al., 2021; Skosyreva et al., 2021).

2. Problem Statement

The environment of the human activity flows is an important factor in the formation of human capital. It creates conditions both for the formation of certain competencies and for their implementation. Modern youth were born and brought up in the digital world, since childhood they have been actively using information technologies. But their accessibility, quality, usability, level of digital literacy largely depends on the place of residence of a person, on his social status. Experts record the existence of digital inequality, which consists in unequal access of various groups of the population to the Internet, the level of necessary knowledge for its full use (Shabunova et al., 2020; Volchenko, 2016). Digital inequality also applies to the

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rural territories of Russia, which lag behind cities in terms of informatization, which negatively affects the quality of the human capital in a village, leads to the outflow of youth from rural areas, and has a negative impact on the professional identity. In this regard, the study of the socio-cultural environment of a rural area is relevant in terms of the conditions for the formation and implementation of digital competencies of young people.

3. Research Questions

The subject of the study is rural youth as a socio-demographic group studied in terms of the characteristics and factors of their professional identity in the context of digitalization of rural territories.

4. Purpose of the Study

The purpose of this study is to characterize the general level of digitalization of rural territories, including the example of Omsk region, to consider the processes of informatization of a village in terms of their influence on the professional identity of rural youth.

5. Research Methods

The main method of study is the statistical method. The study systematizes and analyzes official statistics on the public use of information technology and information and telecommunication networks (Selective Federal Statistical Observation on Public Use of Information Technology and Information and Telecommunication Networks, 2020). The work also uses the materials of a sociological survey conducted in 2020 at Omsk State Agrarian University named after P.A. Stolypin. The survey covered 1,205 respondents-students of Omsk Agrarian University and the University College of Agribusiness of all years of studies and areas of training. An important approach of the study is a comparative method; to assess the level of digital transformation of villages, they are compared by indicators of digitalization: village and city, Omsk region and Russia as a whole, by the possession of digital competencies: rural and urban youth.

6. Findings

According to the “Strategy for the Development of the Information Society in the Russian Federation for 2017-2030”, the priorities of state policy in this area include developing the information and communication infrastructure, creating conditions for the knowledge space and providing citizens and organizations with free access to information, improving mechanisms for the dissemination of knowledge and its application in practice in the interests of an individual, society and the state (Decree of the President of the Russian Federation of 09.05.2017 No. 203…, 2017).

Let us turn to statistics on the development of information and communication infrastructure and compare the use of information and communication technologies by rural and urban residents (Table 1).

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Table 1. Use of information technologies and information and telecommunication networks in households of the Russian population (%)

Year	Percentage of households with…							
	personal computer (desktop, mobile, tablet)		Internet access		Internet access from a personal computer		broadband Internet access	
	village	city	village	city	village	city	village	city
2018	60.5	76.2	67.1	79.7	55.4	73.4	60.7	77.3
2019	56.4	73.6	67.7	79.9	50.6	70.2	60.9	77.7
2020	59.3	76.2	71.6	82.8	50.5	70.9	65.8	80.6

The analysis of statistical data shows that despite the gradual increase in the Internet access by rural residents, there is still a digital gap between the city and the village in terms of the use of computer equipment, accessibility to the network.

Let us consider the statistics on the use of information technologies and information and telecommunication networks in Omsk region (Table 2).

Table 2. Use of information technologies and information and telecommunication networks in households of Omsk region in 2020 (%)

Country/region	Percentage of households with…			
	personal computer (desktop, mobile, tablet)	Internet access	Internet access from a personal computer	broadband Internet access
Russian Federation	72.1	80	65.9	77
Omsk Region	65.5	77	58.3	74

Omsk region obviously lags behind other regions of the country in terms of the Internet access and access to computer equipment. Currently, Omsk region is still among the lagging regions in terms of digitalization of the economy and social sphere. In August 2021, at the Digital Evolution Forum, the Ministry of Digital Development, Communications and Mass Communications of the Russian Federation presented a digital maturity ranking of the regions of Russia, where Omsk region was included in a group of 14 constituent entities of the Russian Federation (out of 85) with low digital transformation indicators (Slyshkin, 2021).

In 2020, among the country's population (above 15 years old) 10.4% did not use the Internet at all, among them 8.1% were urban and 17.2% rural residents, among the residents of Omsk region 11.2% did not use the Internet. The three major reasons for not connecting households of villagers to the Internet, not using information and communication technologies include the following: first – lack of need and interest (18.7%), second – lack of necessary knowledge to work on the network (10%), third – high cost of the Internet connection (5.7%). Urban residents have the same ranking of reasons for not using the Internet (12.7%, 6.5%, 3.7%, respectively). However, as we see, the lack of technical and financial ability to use the Internet, lack of digital competencies and skills, as well as lack of desire and interest, which is also probably largely caused by the low level of computer literacy and ignorance of digital opportunities, are particularly important for rural residents.

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The main means of communication for rural and urban residents is a mobile phone or a smartphone. In 2020, 97.9% of citizens and 95.4% of villagers in Russia as a whole, 99.4% of citizens and 95.8% of villagers in Omsk region used such devices. In 2020, 74.9% of citizens and 59% of villagers in general used a personal computer, 68.4% of Omsk region residents. 67.7% of citizens and 49% of villagers used the computer at home, 32.3% of citizens and 19.8% of villagers used the computer at work. This indicator – the use of computers at work – indirectly illustrates the level of digitalization of various enterprises and organizations in rural areas.

Let us consider the use of the Internet by urban and rural residents (above 15 years old) in terms of communication with state and municipal authorities, as well as consumer activity (purchase of goods and services) (Table 3).

Table 3. Use of the Internet to purchase goods and services (%)

Country/region	Village	City
Use of the Internet to purchase goods and services (% of the total population)		
Russian Federation	24	42.2
Omsk Region	21.9	39.1
Use of the Internet to obtain state and municipal services in digital form (% of the total population receiving services)		
Russian Federation	71.2	83.7
Omsk Region	65	78.3

It is obvious that the rural residents use digital technologies less than the urban residents when purchasing goods and services, as well as when contacting state and municipal authorities they prefer the more traditional way of visiting.

Thus, the statistics demonstrates the existence of a digital gap both between the city and the village and between regions within the country. This gap is determined by the degree of accessibility of computer technology and the Internet, the level of digitalization of social and production infrastructure, digital education and computer literacy of the population. Experts in the informatization of the agro-industrial complex state that the village is about 5-6 years behind the city, and do not give any optimistic forecasts (Salnikov, 2021, p. 129). Rural youth, respectively, has more restrictions than the urban in terms of the formation and improvement of skills and competencies that would allow it to fulfill its potential successfully, to be competitive in the new digital economy.

Let us turn to the data of the sociological survey conducted in 2020 at Omsk State Agrarian University named after P.A. Stolypin and compare the level of some digital competencies of urban and rural students. When choosing their future profession, determining an educational institution, 32% of urban students and only 19.7% of rural youth resorted to the help of the Internet. The factor of attractiveness for work in rural areas includes modern working conditions (digitalization, technical equipment) for only 12.9% of rural youth, compared to 17.8% for urban youth.

The respondents assessed their computer literacy as follows (Table 4).

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Table 4. Computer literacy of young people according to the respondents' estimates (%)

Level of digital technology use	Rural youth	Urban youth
Standard user	64	57.6
Advanced user	33	37.7
Professional user	3	4.7

The survey showed that urban youth rate their computer literacy higher. The percentage of advanced and professional computer users, according to the estimates of respondents, is more among urban students than among students from a village.

Let us also consider the level of youth activity in the use of digital opportunities in various spheres of life (Table 5).

Table 5. Frequency of young people using digital opportunities in some areas of life (%)

Level of digital technology use	Rural youth	Urban youth
Use of digital technologies in education and professional activities		
Often	56	58.3
Sometimes	39.2	34.9
Never	4.8	6.8
Use of various online practices (online shopping, online banking, electronic payments, online gaming, online voting, online questionnaires, etc.)		
Often	51.4	54.9
Sometimes	40.7	39.4
Never	7.9	5.7

The analysis of respondents' answers suggests that the rural youth, like urban ones, mainly enjoy digital opportunities in such a significant area of activity as education, as well as popular online practices of social communications, however, they have slightly less digital activity compared to citizens.

To a large extent, this state of affairs is the result of the digital gap outlined above, the inaccessibility of the Internet, especially in small and remote rural settlements. The problem of the Internet access was particularly acute during the pandemic, when students had to study remotely using online technologies. The act of Alexei Dudoladov, a young resident of the village of Stankevichi, Omsk Region, who climbed a tree to ensure that the signal was received, and posted these videos on the web, gained the All-Russian fame and great resonance. In November 2020, he recorded an appeal to the governor of the region talking about the problems of remote learning for young people due to the lack of high-quality Internet. As a result of this appeal, the work of the authorities to provide Internet to villages of the region was intensified. In March 2021, in the village of Redkoye, Nazavevsky district, where there are only about 200 inhabitants, the country's first base station with a coverage area of 6 km was opened. At the opening ceremony in the village of Redkoye, the Governor A.L. Burkov noted that there is still much work to be done in this area, since 53 settlements of Omsk region do not have either cellular or wired communications, and 300 settlements need to improve communications. In total, 60 thousand residents in Omsk Region remain without cellular communications and broadband Internet (Twelve settlements will be connected to the Internet in Omsk region in 2021, 2021).

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In this regard, Rostelecom plans to open new stations in Omsk region by the end of 2021 as part of the second stage of the federal project to eliminate digital inequality. Thus, high-quality and fast Internet will be available in 19 settlements of the region: Tevrizsky, Tarsky, Nazyvaevsky, Bolsheukovsky, Poltavsky, Cherlaksky, Muromtsevsky, Omsky, Maryanovsky and Sedelnikovsky. By the end of 2021 such base stations should appear in 1,198 villages of Russia, of which 203 are located in Siberia. Until 2030 it is planned to provide mobile communication to more than 24 thousand settlements of the country (Rostelecom continues to implement the second stage of eliminating digital inequality in Omsk region, 2021).

An important step in bridging the digital gap and creating a modern digital environment for the formation of relevant youth competencies is the project on the creation of the "Growth Point" Centers of Digital and Humanitarian Profiles in the rural territories of Omsk region, the implementation of which began in 2019. The creation of such centers is carried out within the framework of the "Modern School" federal project and the "Education" national project. The purpose of the "Growth Point" centers is to update the material and technical base of educational organizations located in rural areas in order to create the necessary conditions for the formation of modern competencies in children in such subject areas as mathematics, computer science, technology, health and wellness basics, etc. (Order of the Government of Omsk Region dated 27.06.2019 No. 120-rp, 2019). The creation of such centers equipped with modern technology is designed to introduce a model of equal access to modern educational programs, create conditions for students to master digital competencies, in such areas as web design, graphic design, video production, engineering design, mobile robotics, network and system administration, prototype manufacturing, design activities, etc. The "Growth Points" are equipped with such modern digital technologies as quadcopters, robotic sets, VR helmets, laptops, 3D printers, demonstration equipment, and digital laboratories. Rural youth have the opportunity to study school subjects using this equipment, create projects, prepare for various competitions and conferences, and participate in extracurricular educational and socially significant events. To date, 172 such centers have already been opened in the region. In total, by the end of 2023, it is planned to create 312 centers in Omsk region, i.e. in every second rural school a modern digital environment will be created to form the corresponding competencies of youth (Growth Point. List of centers (2019-2023), 2021).

7. Conclusion

The role of the youth's human capital as a valuable resource of the economy aimed at innovation is growing in the context of the digital transformation of the society. The qualities of human capital and its potential are developed in unity with the social and cultural environment in which it is formed. Therefore, upbringing, education, development of a person as a future professional with knowledge and competences allowing him to be implemented successfully in the modern digital world is impossible without the qualitative digital environment. Modern Russian realities are characterized by digital inequality between urban and rural territories. Digitalization, which would seem designed to close the gap between the city and the village, would help to provide rural people, especially young people, with new opportunities in terms of education, professional identity, employment, earnings, various social and cultural benefits, and, as a result, contribute to the sustainable development of rural areas thus reducing the outflow of young people to cities, has not yet being successful in coping with this task. Rural youth has a lower level of computer

literacy, less digital activity, compared to citizens, and therefore restrictions in the use of opportunities and advantages of digitalization in professional identity. The state and the scientific and pedagogical community, however, are well aware of the existing problem, and are making great efforts to further digitalize rural areas, create a modern and comfortable educational environment in rural schools, which will inevitably improve the human capital of rural youth, and therefore will ensure the successful digital transformation of the village and the agro-industrial complex in general.

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