Employment as a Modern Development Trend: Social and Labor Relations in the Digital Economy

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ABSTRACT
The purpose of this study is to conduct a comparative analysis of supply and demand in the segment of remote work in the labor market for 2014-2019. The author analyzed the resumes and vacancies of remote employment in the professional spheres of activity in the territorial section (country, region, city). The empirical basis of the study was the reporting of the analytical service "HeadHunter" on the number of vacancies and resumes, including the remote work schedule for the period from 2014 to 2019. Russia, the Sverdlovsk region and the city of Yekaterinburg. The study presented a ranking of the list of occupations of remote employment. The results of the analysis allow us to talk about the interest in the remote format of work of social and labor relations subjects: employees and employers. At the same time, the level of demand exceeds the level of supply of this form of work several times. The results of the analysis of the statistical information of the vacancy bank and the summary revealed the general trends and differences in remote work in the professional structure and territorial aspect. Another conclusion was the difference in the level of demand and offers of work at a distance, where the number of vacancies exceeds the number of resumes several times. The main advantages and disadvantages of remote employment, which can be both prerequisites for its further effective development and an obstacle to its spread, are considered. The results of the study are of practical significance and can be used to improve the regulation of remote employment.

Keywords: remote employment, occupation, vacancy, resume, job market

1. INTRODUCTION
Global changes are taking place in today's economic society, the economy and employment are transforming the labor market, and new alternative forms of work, such as remote employment (intellectual employment) are spreading. Remote employment, Online employment, freelancing, etc., which determines the relevance of the chosen topic of work.

The global spread of the Internet and the widespread use of information and communication technologies (ICT) are driving the transition to the digital economy and the transformation of the labor market infrastructure, influencing effective development and the spread of remote work, under their influence is changing the structure of the economy, where there is an increase in the share of employed in the service sector and a decline in production. Thus, there is a substitution of physical labor for information work.

The ancestor of remote employment is the American scientist John Niles (JackM. Nilles), who defined such a phenomenon as "telework" and suggested that workers could work at a distance, i.e. perform work tasks without being physically in the employer's workplace and using the means of communication for communication. A new form of work in the form of remote interaction has become widespread in the West, the reason for this was the development of the worldwide network of Internet, as well as support for remote work at the legislative level. In Russia, remote employment appeared at the end of the 20th century, later than in foreign countries, but it organically fit into the structure of global changes in the field of work and became a new trend of employment.

1.1. Related Work
In connection with the above author, the following working hypotheses of this study were put forward: remote (remote) employment is prevalent in the labor market and tends in its development as a promising form of employment for employers and for workers, and demand exceeds similar supply.

The purpose of this work is to study the factors of the spread of remote (remote) employment in the labor market, analysis of supply and demand in the remote segment of work, as well as identification of the professional structure of remote employment.

Based on the goal, the following research objectives were identified:
- a comparative analysis of supply and demand of remote (remote) employment in the industry and territorial area;
- identify the main benefits and disadvantages of working remotely.

The practical significance of this study is that the results and features of remote employment will adapt government management tools to current trends in the digital economy. The regulation of the remote employment segment will also contribute to its further development, as well as to address many issues related to the practice of applying work at a distance. Identified basic disadvantages and advantages can serve as prerequisites for the further development of remote employment, as well as existing shortcomings that inhibit the development of remote labor.

1.2. Our Contribution

This study applied an analytical and statistical method of information processing, as well as a comparative analysis of the demand and supply of remote work in the territorial section (country, one of the regions and the city of millionaire) in dynamics for 2014-2019. The information base was the reports of the «HeadHunter» analytics service, the totality is represented by the number of vacancies and resumes in professional areas, including a separate number of offers and offers indicating the schedule of work "remote" (Russia, Sverdlovsk Region and Yekaterinburg) for the period 2014-2019. In the analysis, the author used features of information about vacancies and resumes:
- the information provided on vacancies in professional areas is calculated by the number of vacancies for each year and shows the 10 areas with the highest demand for specialists, i.e. professionals, who are most often sought by employers. Each vacancy can be published in several professional areas;
- provided information on professional fields is calculated by the number of resumes per year and shows 10 areas in which professionals most often post resumes. Each resume can only be published in one professional area.

The purpose of the analysis is to identify the distribution of the format of remote work and the characteristics of the professional structure of the supply and demand of remote employment.

1.3. Paper Structure

The rest of the article is organized as follows. Section 2 provides a literary overview of the topic of this study. Then the results of the analysis of resumes and vacancies in the remote employment segment are presented. Completes work conclusions about the study and an idea of direction of future research.

2. BACKGROUND

2.1. Literary review

The study of remote employment (essence, distribution, application practices, classification) is currently given great attention to both foreign and domestic scientists [1-3]. Thus, O.N. Alhimenkova, V.N. Hebrialaya, A.I. Merko, T.M. Husyanova in their works reveal the conceptual apparatus of remote employment, the causes of its emergence as a modern phenomenon of the labor market [4-7].

The legal aspects of the practice of remote employment, which are reflected in the works of Yuri Vasilyev, S.V. Shuraleva, M.G. Belyaeva, V. Stepanova, V.M. Tregubova and others, are interesting and important [8-11]. Pension regulation for workers with such employment is being studied by foreign scientists [10]. Some of the work is devoted to the analysis of legal relations and the identification of existing gaps in the regulation of social and labor relations in remote employment, which highlighted the importance of adapting legislation to the process of new employment and the organization of their employment [13]. Prospects for the development of remote employment in the modern labor market and the peculiarities of the organization of labor itself within the framework of remote employment in their labors explore G.N. Litvinenko, A.P. Prokushev, E.F. Prokusheva [14-15]. Features of the organization of remote work on online platforms are revealed in the works of foreign scientists, which pays attention to the mechanism of control over employees by employers, as well as the negative aspects of remote work with possible ways to solve them [16].

A number of domestic and foreign scientists [17-18] consider remote employment as promising employment for workers with disabilities to work. Some papers explore the strategy for managing remote employment, as well as how to address the work-life balance [19-20]. Foreign scientists in their latest studies have also come to the conclusion that more and more remote workers work overtime, which, on the contrary, leads to an imbalance between work and life outside of work [21-22].

It is possible to single out works studying the gender issues of remote employment, which are important and relevant in the social, economic and political life of modern society. The works of Pesha A.V. examine the main reasons for the large-scale changes in the labor market, which led to non-standard forms of employment, in particular to the remote format of work. The impact of these forms of employment has also been studied, and the main causes of their negative effects on women's physical and psychosocial health have been identified [23].

Other scientists have explored the experience of female tv workers in Spain, analyzing the impact of this format of work on their daily lives, based on the key benefits of telework, which allows women to combine work and family life, which is very relevant for women with children [24].
The writings of foreign scientists address such an important issue as the gender pay gap in Germany in the remote employment format [25]. A number of papers explore the attitude of women to socio-economic conditions in remote employment, the impact of remote work on parental functions, and the peculiarities of remote female employment [21, 26-31]. A group of scientists has studied in detail the distance female employment, revealed its peculiarities of distribution, problems and possibilities of application [32]. The paper describes the criteria for the effectiveness of remote women's employment, and attempts to identify the structure of women's professions by industry [33].

A number of scientists have conducted research among various categories of workers working remotely in Swedish government agencies [21]. In their work, they consider how new mobile on-line technologies and virtual offices contribute to the spread of remote work not only among highly skilled workers with creative and non-standard tasks, but also among the ordinary employees with everyday functionality. It can now be noted that the development of digital technologies in the public sector of the economy is of paramount importance. Digital public services are increasingly seen as a cost-cutting tool, while providing better services to citizens and businesses and enabling them to be more open to the public. It can stimulate economic growth in the development of the public sector of the economy. A number of foreign scientists pay attention to the issues of pros and cons of working outside the office, for example, Romanian scientists have conducted a study of the social consequences of the use of remote work, having identified its main advantages and non-improvement [34-35].

In a number of works of Russian scientists, attempts have been made to study the practice of applying remote work in professional areas of the economy as a whole [4-5, 7, 36]. Thus, a theoretical review of scientific studies has shown that various aspects of remote employment are investigated, and the segment of remote work in the context of professional areas is poorly studied. All of the above confirms the relevance and novelty of this study.

### 2.2. Results of the study

The author expresses gratitude to the «HeadHunter» research analytical service for the information provided. «HeadHunter» is a leading Russian company in the field of Internet recruitment, its services are convenient tools for business in Russia and neighboring countries. «HeadHunter» regional offices are located in several major Russian cities. Currently, «HeadHunter» has more than 44 million Resumes and more than 550,000 resumes. Vacancies. The work portal works with more than 1,183,000. more than half a million vacancies appear on the site every month. According to expert estimates, it is the most effective channel on supply and demand in the labor market, which is one of the largest job search sites and employees according to the «Similarweb» rating, it has become one of the world's leading sites in the Employment. The independent evaluation marks the recognition of «HeadHunter», firstly, as the best mobile application (according to the results of the "Golden App" competition in 2015), and secondly, as the first presented portal in the category "Online Platform". Interest in remote employment increases from year to year, this is due to the possibility of transforming the organization of labor and labor relations through the use of information and communication technologies (ICT) and the Internet in business processes. Consider a comparative analysis of the share of the total number of submitted vacancies and a summary showing in them the schedule of work "assigned" to the labor market in the country, Sverdlovsk region and Yekaterinburg. The calculation is how many times the summary exceeds the number of vacancies and data dynamics for 2014-2019. table 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Russia</th>
<th>Sverdlovsk Region</th>
<th>Yekaterinburg</th>
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<td></td>
<td>Vacancy</td>
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<td>2019r.</td>
<td>2,60</td>
<td>22,48</td>
<td>2,68</td>
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<td>2018r.</td>
<td>8,08</td>
<td>26,68</td>
<td>7,46</td>
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<td>2017r.</td>
<td>10,37</td>
<td>23,17</td>
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<td>2016r.</td>
<td>10,42</td>
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<td>2015r.</td>
<td>11,02</td>
<td>18,37</td>
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<td>2014r.</td>
<td>8,68</td>
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Table 1. Comparative Job Analysis and Summary of Remote Work in Russia, Sverdlovsk Region and Yekaterinburg for 2014-2019, %
According to the results of the study of the labor market in the segment of remote (remote) employment, it can be concluded that there is interest in remote employment from both employers and employees. The share of remote work offers is growing slightly, while the share of resumes for the study period has almost tripled since 2014-2019. There is an excess of the level of demand over the level of supply of this form of work several times during the entire period under study. The exception is in 2019, where there is a decline in the share of vacancies and resumes of remote employment, perhaps due to the fact that from January 1, 2019, the law on the conduct of an experiment to establish a special tax on professional income for the self-employed has come into force. With its introduction in 2019, more than 15 million self-employed.

Next, consider the content analysis of the industry characteristics of vacancies and the summary of the remote segment of employment in the context of the country as a whole, in the region (in the example of the Sverdlovsk region) and in the city-millionaire (example of the city of Yekaterinburg).

Comparative dynamics of demand in the labor market in the segment of remote (remote) employment in Russia, Sverdlovsk region and Yekaterinburg is represented in figure 1, in the period from 2014-2019. Shows a professional structure of 10 areas with the most frequently placed resumes of specialists.

![Figure 1](https://example.com/figure1.png)

**Figure 1** Mid-market structure of the summary of remote (remote) employment in the professional sphere of activity in Russia, Sverdlovsk region and Yekaterinburg for 2014-2019, %

By comparing the demand for remote employment across the territories, the following general trends were identified. Thus, the ranking of the professional structure of the resume allows to identify the top 5 professional spheres, the most interesting to respondents for the entire period of the study: the initial stage of career, the field of sales, IT-telecom, administrative staff and sphere Marketing.

The leader of the demand for remote work are young professionals who start their work, the share of their resume is about 30%. This explains the fact that young
professionals now have one of the main motivations for choosing a job, and remote work can provide such a mode of work. This is also confirmed by the results of Hay's study among more than 1,000 young professionals aged 18 to 30, and 41% of respondents noted "flexible working hours" among the most important factors in the working conditions [38].

The second place in the structure of the resume of the remote segment of work for the entire period of the study invariably takes the field of sales. If we consider changes in the territorial aspect, there is an increase in the share of such resumes in half in the region and the city, this is due to the fact that the sphere of sales is rapidly developing in the labor market, especially in retail.

There is a constant demand for resumes in such a developing field as "IT and telecom" and stable demand for administrative staff, the share of resume marketing remains almost unchanged. Changes have taken place over the past year in the areas of construction, transport and production, where we see an increase in demand in all the territories under study. This is due to an increase in overall demand in the labor market and an increase in the use of ICT in these areas, which make it possible to apply a remote form.

Comparative dynamics of proposals in the labor market in the segment of remote (remote) employment in Russia, Sverdlovsk region and Yekaterinburg for the period from 2014-2019, is represented in Figure 2, where the author compiled a ranking of the professional structure of vacancies of remote employment10 areas with the most frequently placed vacancies.

![Mid-market vacancy structure of remote (remote) employment in the professional sphere of activity in Russia, Sverdlovsk region and Yekaterinburg for 2014-2019, %](image)

**Figure 2** Mid-market vacancy structure of remote (remote) employment in the professional sphere of activity in Russia, Sverdlovsk region and Yekaterinburg for 2014-2019, %

Considering the structure of proposals of the remote segment of work in professional areas, it is possible to identify the prevailing areas of activity in this format of employment during the period under review: it is the sphere of sales, offers for those who only starts his career, IT-

sphere, administrative staff, marketing and banking services.

There has been a decrease in demand in the banking sector by 2 times for the whole period under review, perhaps this is due to changes in the work in general in this professional area, with the increase in the use of on-line tools and
platforms in the use of banking services population, which leads to a general reduction in staff in this area. In the construction sector, there is an increase in demand in 2019, compared to 2014, more than twice, perhaps this is due to the overall increase in demand in the construction sector. There has been a sharp increase in offers for staff, as well as in insurance and transport, which can be attributed to the expansion of activities in these areas in the labor market, as well as the introduction of ITC in business processes when doing work in the areas. It can be noted that there has been a 3-fold decrease in offers for young professionals during the study period. Between 2014 and 2018. there has been an increase in job offers in the IT sector, which is gaining popularity in the labor market recently, but in 2019. their decline. This is probably due to the fact that employers use a different channel of attraction, and "hunting for heads" invite not only graduates, but also students, offering attractive working conditions. Starting in 2016. the share of vacancies in the transport industry has significantly increased, this is due to the fact that the transport sector is experiencing a "staff hunger" in general, with the development of the transport sector, the increase in demand for logisticians, couriers, dispatchers, the increase in taxi services, etc., this is especially true of the million-cities.

2.3. Discussion of the results

Comparative analysis of the average market structure of vacancies and a summary of remote work in professional areas for the period 2014-2019. it leads to the conclusion that the Russian labor market at the moment is not ready to fully meet the demand from those wishing to work on the terms of remote (remote) employment. For example, in Russia for 2019. CV of young professionals at the beginning of career strains on average 3 times the number of vacancies, thus it can be concluded that the labor market can not provide the supply of work half of the demand among young people starting their careers Specialists. On the contrary, sales vacancies are 1.5 times higher than the number of resumes submitted. If we consider the sphere of "IT, telecom", then there is a predominance of supply over demand for 2014-2016, then this skew almost leveled except for 2019. A similar dynamic is observed in the field of marketing. Throughout the period, there has been a skewed supply and demand in sales, where vacancies in the labor market are more than summary. The benefits of remote employment are driving up demand and the current spread of this form of employment. Previously, in his works, the author explored the main advantages of remote (remote) work, which was noted by employees of various professional industries, already engaged remotely. In the top 5 advantages of remote work on the responses of respondents of each professional area were highlighted the following opportunities: to allocate their working hours independently; combine several works at the same time: Work from another region, country; to combine work with study, to take care of a child (which are a huge advantage for women), as well as to save time and money on the road. A separate advantage is the reduction in the risk of contracting the disease from colleagues, or in transport on the way to work, especially during the spread of the pandemic.

But along with the benefits, there are a number of weaknesses in remote work that can hinder the development of this form. The main shortcomings that remote workers note are related to socio-psychological aspects: communication problems, lack of communication with colleagues and supervisors, lack of feedback, do not affiliate with Organization. To mitigate such negative consequences in the use of remote employment, as well as to help remote employees feel part of the general team, we propose to organize for remote employees: a system of adaptation, A training system, a single corporate portal for general communication; webinars and teleconferences with discussion of corporate news, etc.; corporate events with remote workers.

The results of the study are of practical significance and can be used in the development of programs to regulate remote (remote) employment, both locally and regionally and in the country as a whole. On the basis of this work, it is planned to implement further research on the specifics of modern trends in the development of remote employment, to identify an assessment of the effectiveness and feasibility of the distribution of remote format of work in the country, region, city.

3. CONCLUSION

Thus, in his study, the author conducted a content analysis of vacancies and a summary of the remote (remote) work of the work portal «HeadHunter», a comparative analysis of supply and demand in the segment of remote employment in the labor market in the dynamics of the 2014-2019 in the territorial section (Russia, Sverdlovsk region and Yekaterinburg), analysis of the industry characteristics of the remote (remote) labor market in professional fields on the basis of resumes and vacancies to find remote employment. The results of the study revealed professions in the segment of remote (remote) work, as well as the ranking of their list for Russia, Sverdlovsk region and Yekaterinburg.

The results of the study suggest that interest in remote (remote) employment is growing from year to year, both from job seekers and employers. There is an excess of the level of demand over the level of supply of this form of work several times. Excess demand over such supply suggests that remote (remote) employment has development prospects, and its main merits may be prerequisites for its further effective dissemination. We believe that such areas of activity, where there is already demand and supply of remote employment format, are primarily promising for the use of remote employment in the near future. It is also possible to assume the prospect of the development of remote employment in almost all professional areas, where there is a technical opportunity to perform work remotely, the ability of the employer to
control the performance of work employees and the main availability of work that can be done remotely. According to employers, remote work is a trend of today, so which is associated with the benefits of remote employment, believes of respondents "Hays" [38], and according to experts in the near future will switch to the finished format of work more than 20% of employees.

But for remote work to continue, it is necessary to improve the regulation of remote employment at the legislative level, as well as the development of digital infrastructure, technological progress and application of remote work. Information and communication technologies in the organization of labor, increasing the level of digital ownership, training and retraining of specialists. This will allow for remote employment in various professional fields and the development of the digital sector of the economy. Improving the regulation of remote employment at the legislative level will contribute to its further development, for example, replacement in 2020, paper work books as a systematic process of digitizing all areas of modern life on electronic, will create additional opportunities for the development of remote work.

REFERENCES


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