



Peculiarities of Unstable Employment in the Era of a Digital Economy from Data of Social Media of Russia

V. N. Bobkov¹, M. V. Simonova^{2(✉)}, N. V. Loktyuhina³,
and I. A. Shichkin¹

¹ Plekhanov Russian University of Economics, Moscow, Russian Federation
bobkovvn@mail.ru

² Samara State University of Economics, Samara, Russian Federation
best-samara@mail.ru

³ Academy of Labor and Social Relations, Moscow, Russian Federation
cloktrn@mail.ru

Abstract. The article presents the results of references analysis related to precarious employment in Russia found in social networks, blogs and public sources of information. Using thesaurus compiled on scientific articles and public discussions, automatic monitoring of news, topics, reviews and also debates which dedicated to precarious employment issue has been carried out. The search for subjects of precarious employment was conducted by using Big Data technology. There was revealed the connection of individuals affected by precarious employment to a specific age, gender, occupation, as well as their location in Russian Federation. An estimates of precarious employment scale in Federal districts of Russia has given. In result of the study, a socio-demographic profile of an individual affected by precarious employment in Russia was defined. There were factors and components of precarious employment related to social media users are determined, whereby expanded knowledge concerning manifestations of their precarious employment. A list of key problems faced by precarious workers is established.

Keywords: Digitalization · Precarious work · Social guarantees · Social networks · Social protection · Unemployment

1 Introduction

Global changes in national and international political, economic systems, as well as transformations in world of work highlights a discussions connected with “precarity” and “precarious employment” issues in format of public and academic debates within social media [5].

Nowadays, rapid scientific and technological progress, which led to fast development of media platforms and social networks, such as Facebook and Vkontakte, as well as search engines such as Google and Yandex, enables the opportunity to process data related to labour activity. Media platforms users often upload information or enter queries related with current work or looking for a new job.

Internet users search for information about vacancies which implies permanent or temporary employment in certain localities, or they can “tweet” during job search, as well as in cases of starting work [7]. Analysis of social network profiles facilitate to determine the socio-demographic, professional portrait of job applicants and also their location. Web users enter textual reviews and leave comments containing information that can be used in order to obtain specific explanations on various social and labour issues.

Currently precarious employment has become widespread phenomenon in international and national contexts. It represents the forced loss by workers of labour and social rights caused by narrowing of standard employment based on permanent labour contracts with a full working week and high protection of labour and social rights guaranteed to workers [14]. In transition to flexible forms of employment is accompanied by individualization of work, the proliferation of short-term contracts, non-standard working conditions, manifested in part-time employment, volatile wages, expansion of informal employment and shadow economy [12]. This problem is widely explored in scientific literature [11, 15]. Along with mentioned above sources, the importance of such global phenomenon highlighted by its widespread discussion in social networks [10].

The authors identified the problems faced by social media users in the world of labour and manifestations of precarious employment among them. Besides it was revealed the socio-demographic, professional features and also residence of individuals affected by precarious employment.

Using the results of references analysis to precarious employment in Russia found in social networks, blogs and public sources of information it is necessary to draw up an individual’s profile affected by precarious employment comprising residence, socio-demographic and professional attributes. It also requires to figure out a key problems faced by precarious workers.

2 Materials and Methods

This research was conducted in November 2016. Its empirical base was a sample of users from social networks identified through an automatic search using a thesaurus, compiled on the basis of scientific articles, discussions, debates and public sources of information dealing with precarious employment, informal economy and hidden incomes. During the research there was performed an automatic monitoring of references related to precarious employment in Russia found in social networks, blogs and public sources of information. The search for subjects of precarious employment was conducted by using Big Data technology.

In total, over 2 million web pages were processed during the research. Purposive sample covered more than 4,200 unique users. The research methodology is based on an algorithm consisting of the following steps:

1. Drawing up an initial thesaurus including a list of keywords to further search for discussions in automatic and semi-automatic modes. This thesaurus contains more than 190 original queries.

2. Conducting an automated search based on initial thesaurus, as well as enriching it with phrases (terms) similar in semantics and word forms using machine learning technologies. As a result, the list of keywords was increased by 23.6%, and the total number of identified mentions to precarious employment in 2016 exceeded 43 thousand.
3. Semi-automatic segmentation of found references to precarious employment enable to identify association with a specific age and gender group, professional area, as well as to region and federal district. Spatial boundaries to explore precarious employment in Russia is based on quota sampling (Figs. 1, 2).

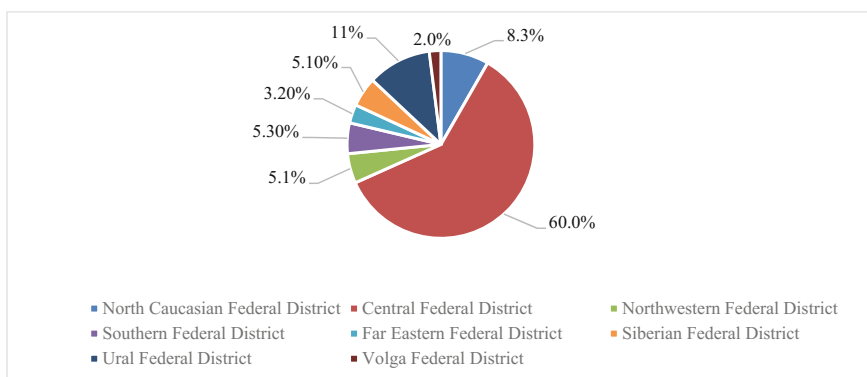


Fig. 1. Distribution of social media users in the sample by federal districts of Russia (Source: compiled by the authors)

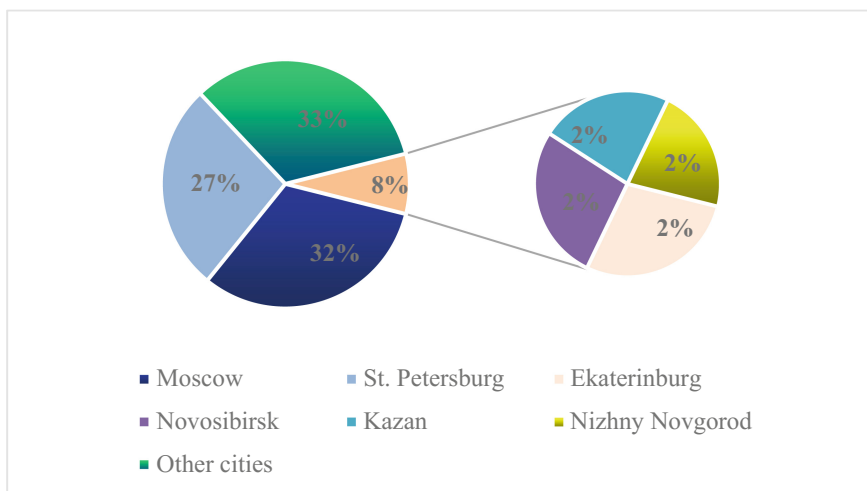


Fig. 2. The share of social media users in Russian cities covered by research of precarious employment (Source: compiled by the authors)

3 Results

As a result of semi-automatic segmentation of references to precarious employment found in social networks, blogs and public sources of information, it was identified relation of precarious workers to a specific age and gender group, professional area, as well as to region and federal district of the Russian Federation. The chart shown in Fig. 3 illustrates the frequency of age-related cohorts in the sample (bar graph), and curved line indicates the proportion of precarious workers.

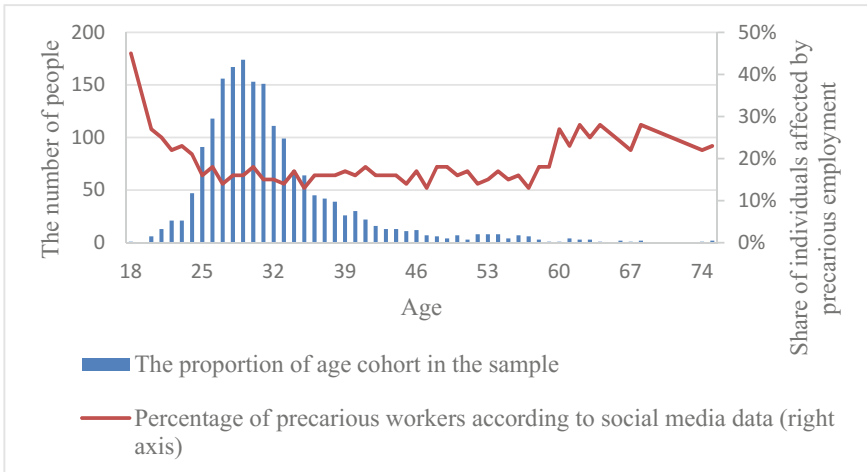


Fig. 3. Age structure of individuals affected by precarious employment (Source: compiled by the authors)

According to the research results, youth under 23 years, as well as elderly people refers to the most vulnerable groups influenced with risks of precarious employment. It's determined by low demand on the labour market and insufficient competitiveness relatively to other age cohorts drives youth and people of pre-retirement age (employed pensioners) to occupy labour market segments with high risk of precarious employment [4]. Thus, for these socially vulnerable groups of population, the fact to have payable employment is more important than have decent work including high remuneration and social guarantees [9].

Inner circle of the diagram shown in Fig. 4 implies a distribution of the sample by gender. The external circle depicts the proportion of men and women at risk of precarious employment. In gender aspect of Internet users who have touched on the topic of precarious employment, there is a male's predominance (Fig. 4). This circumstance suggests that advantages and benefits provided by formal employment are more important for women [3]. Salary amount is a most considerable factor encourages men in labour relations [8].

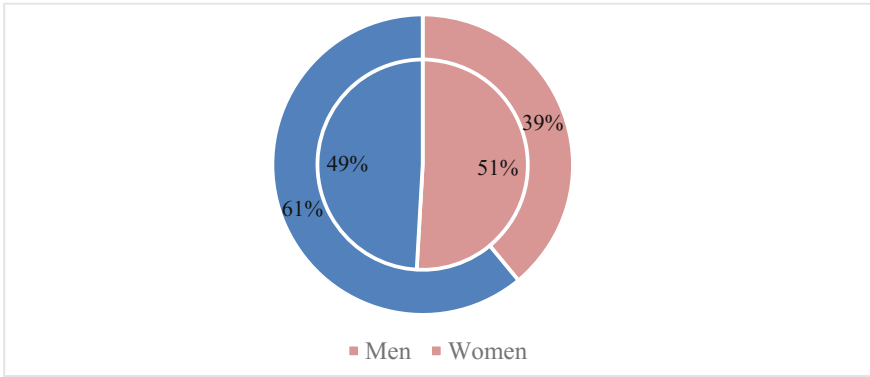


Fig. 4. Gender structure of individuals affected by precarious employment (Source: compiled by the authors)

In result of study the educational level of individuals affected by precarious employment, it was revealed a quite high proportion of precarious workers with higher and secondary vocational education (Fig. 5).

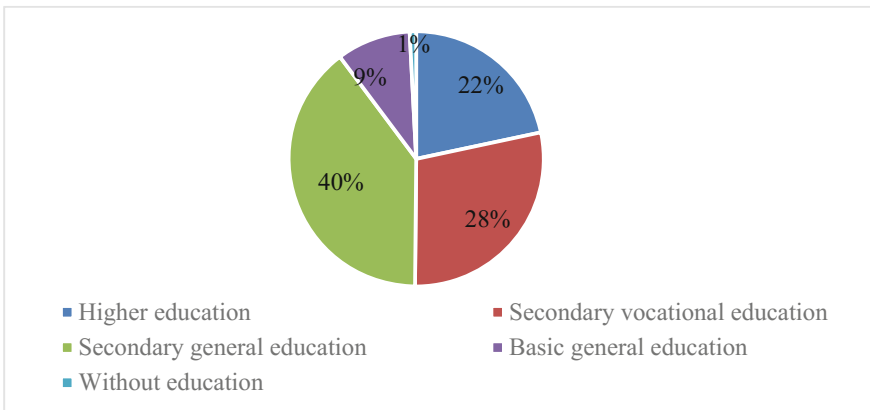


Fig. 5. Educational level of individuals affected by precarious employment (Source: compiled by the authors)

Despite the fact that higher education increases worker competitiveness and possibilities to formal employment with a high level to secure of labour and social rights, in Russian reality higher education is not a guarantee of protection against precarious employment [16].

The research found, in economic sectors the majority of precarious employees belong to trade, agriculture and construction, that is explained mass character of occupations they represent, the features of production and labour in these areas, as well low employer requirements to workers education (Fig. 6) [1].

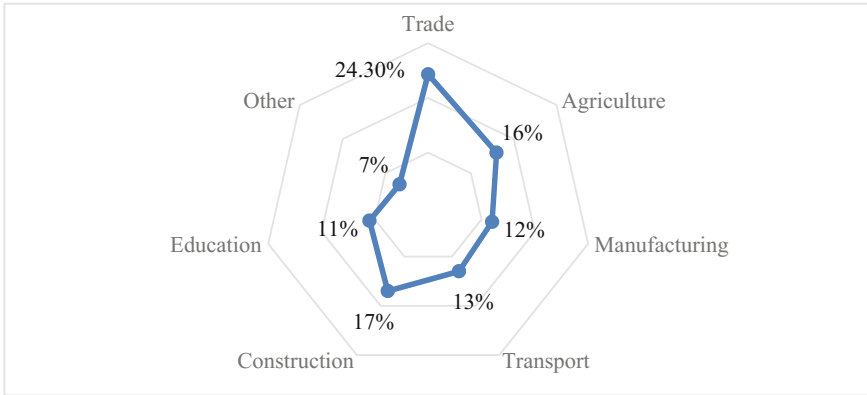


Fig. 6. Sectoral distribution of precarious workers (Source: compiled by the authors)

Social media analysis showed that largest scale and spread of precarious employment are observed in North Caucasus, Far Eastern and Volga federal districts (Fig. 7).

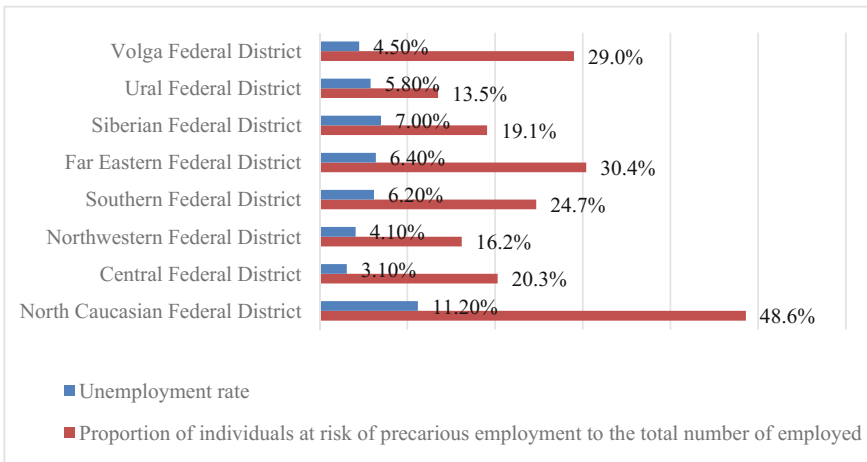


Fig. 7. Precarious employment to unemployment ratios in federal districts of Russia according to Rosstat [13] data and social media analysis (Source: compiled by the authors)

Modern information and communication technologies enables to monitor references to precarious employment in social networks, blogs and public sources of information. To search for individuals affected by precarious employment is possible due to usage of Big Data technology. Thus, analyzing the profiles and messages of social media users, it is possible to get data describes the scale, forms and manifestations of precarious employment. This information is a valuable resource to fight such considerable issue in the social and labour sphere as precarious employment.

4 Discussion

It occurs because in regions with high unemployment rates and growing labour market tension, people who do not intend to migrate have to accept informal labour relations, lack of social and labour guarantees [17], overtime work or temporary employment and other forms of precarious employment [6].

In addition, the research found that distance between Central federal district and other federal districts of Russia contributes to increase relevance of precarious employment issue to the local population. This is mainly due to the inter-regional disparities in socio-economic development of Russian Federation [2].

5 Conclusions

1. According to results of the conducted research based on social media data, a socio-demographic, professional and regional profile of the individual affected by risks of precarious employment in Russia was defined (Table 1).

Table 1. Profile of Individual Affected by Precarious Employment in Russia

Gender	Age	Education	Economic sector	Location
Male	Up to 23 and over 58 years old	General secondary	Trade, agriculture and construction	North Caucasian, Far Eastern and Volga Federal Districts

Source: compiled by the authors

2. As a result of social media data analysis it has been concluded that the main problems faced by individuals influenced by risks of precarious employment in Russia are:
 - Lack of social security and confidence in work and life;
 - Harmful or insecure working conditions;
 - Variable and non-competitive wages;
 - Unreasonably low wages;
 - Delays or non-payment of wages, social benefits;
 - Unpaid overtime work;
 - Failure to pay taxes or insurance payments by the employer;
 - The employer does not pay for vacation or sick leave;
 - Difficulties to finding a new job.

Acknowledgments. This article has been written under support of the Russian Science Foundation (RNF) “Precarious employment in Russian Federation: the state and ways to reduce № 16-18-10140”.

References

1. Benavides FG, Benach J, Diez-Roux A, Roman C (2000) How do types of employment relate to health indicators? Findings from the second European Survey on working conditions. *J Epidemiol Community Health* 54(7):494–501. <https://www.ncbi.nlm.nih.gov/pubmed/10846191>. Accessed 8 May 2018
2. Bobkov VN, Kvachev VG, Novikova IV (2018) Precarious employment in the regions of Russian Federation: sociological survey results. *Ekonomika regiona [Econ Reg]* 14(2):366–379. <https://doi.org/10.17059/2018-2-3>
3. Bobkov VN, Kvachev VG, Shichkin IA (2017) Determinants of precarious employment of labour migrants in Russia estimated by respondents of sociological survey. What human resources are needed for the Russian economy?: research papers of the VII International scientific and practical conference “Abalkin readings” held on May 23–25, 2017/edited by Valentei SD. Moscow: FSBEI of HE “REU named after G.V. Plekhanov 131–142
4. Bobkov VN, Novikova IV, Odintsova EV (2017) Profiles of precarious employment in Russia. The standard of living of population in Russian regions, vol 4, pp 26–35. https://www.hse.ru/data/2011/04/06/1211703897/Mode_of_life-ENGL.pdf. Accessed 8 Mai 2018
5. Bobkov VN, Shichkin IA (2017) Priority directions of reducing the unstable employment of labor and forced migrants in Russia. The standard of living of the population of the Russian regions, vol 4(206), pp 45–51. CyberLeninka: <https://cyberleninka.ru/article/n/prioritetnye-napravleniya-snizheniya-neustoychivoy-zanyatosti-trudovyh-i-vynuzhdennyh-migrantov-v-rossii>. Accessed 8 Mai 2018
6. Puig-Barrachina V, Vanroelen C, Vives A, Martinez JM, Muntaner C et al (2014) Measuring employment precariousness in the European working conditions survey: the social distribution in Europe. *Work* 49(1):143–161. <https://doi.org/10.3233/wor-131645>
7. Castells M (2010) *The rise of the network society*. Blackwell Publishing Ltd., Oxford
8. Cranford C, Vosko LF, Zukewich N (2003) Precarious employment in the Canadian labour market: a statistical portrait. *Just Labour* 3:6–22. http://www.yorku.ca/julabour/volume3/cranfordetal_justlabour.PDF. Accessed 8 Mai 2018
9. Druzhilov SA (2015) Precariat and informal employment in Russia: social and psychological aspects. *HumItarian Sci Res* 1(2) [Electronic resource]. <http://human.snauka.ru/2015/01/9491>. Accessed 8 Mai 2018
10. Golenkova ZT, Goliusova YV (2013) New social groups in the modern stratification systems of global society. *Sociological science and social practice*, vol 3. http://teoria-practica.ru/rus/files/arhiv_zhurnala/2015/24/sociology/orekhova.pdf. Accessed 8 Mai 2018
11. Kalleberg AL (2009) Precarious work, insecure workers: employment relations in transition. *Am Sociol Rev* 74:6–8. (Feb 1–22). <https://doi.org/10.1177%2F000312240907400101>
12. Murgia A (2014) Representations of precarity in Italy. *J Cult Econ* 7(1):48–63. <https://doi.org/10.1080/17530350.2013.856336>
13. Number of unemployed according to ILO methodology (2018) Federal State Statistics Service (Rosstat). http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/wages/labour_force/#. Accessed 8 Mai 2018
14. Bobkov VN et al (2017) *Precarious employment: Russian and international contexts of the future world of work*. Publishing House “RealPrint”, Moscow
15. Gorshkov MK et al (2015) *Russian society and the challenges of time*. Publishing House “Ves Mir”, Moscow

16. Benach J, Vives A, Amable M, Vanroelen C, Tarafa G, Muntaner C (2014) Precarious employment: understanding an emerging social determinant of health. *Annu Rev Public Health* 35:229–253. <https://doi.org/10.1146/annurev-publhealth-032013-182500>. Accessed 8 Mai 2018
17. Simonova MV, Zhukova AA (2018) Informal employment in the labor market: trend analysis. *Bulletin of VSU. Series: Economics and Management*, vol 2, pp 82–89. <http://www.vestnik.vsu.ru/pdf/econ/2018/02/2018-02-11.pdf> Accessed 8 Mai 2018