

National Research University Higher School of Economics

as a manuscript

Klepikova Ekaterina

OLDER WORKERS IN THE RUSSIAN LABOUR MARKET

PhD Dissertation Summary
for the purpose of obtaining academic degree
Doctor of Philosophy in Economics

Academic supervisor:
Marina Kolosnitsyna
PhD, Associate Professor

JEL: J1, J2, J3, J7

Moscow – 2021

Problem description

The relevance of the study is due to the population ageing taking place today in all developed and most developing countries. Russia is not an exception: it is already a country with an old population (the share of people aged 60 and over was 21.3% in 2018, 65 and over – 14.6%¹), and its population will continue to age (according to the average forecast the share of the population over the working age² will be 30.1% in 2036³). Population ageing is changing society and the economy as a whole. The negative consequences of population ageing are usually listed as follows: a growing burden on the pension system, an increase in health care costs, a reduction in the size and, probably, a decrease in productivity of the labour force and rate of technological progress [Bos, 1989; Börsch-Supan, 2008; Ulmer, Steffensmeier, 2014; Lee, 2016; Kapeliushnikov, 2019; Vishnevskaya et al., 2020]. At the same time, over the past years, there has been an increase in the human capital of older people, an improvement in their health indicators. Studies on the productivity of the older people reveal that their productivity is not statistically related to age in areas that do not require physical labour, quick decision-making and constant switching to new functions [Skirbekk, 2004; Skirbekk, 2008; Van Ours, 2009]. Some studies show that with the expansion of older people employment, it is even possible to boost the rate of economic growth [Acemoglu, Johnson, 2007]. However, the question remains under what conditions an augmentation in the proportion of older workers will have a positive effect on the economy. The necessary conditions include an increase in the labour supply of the older people and in the demand for their labour, as well as the convergence of the professional and sectoral structure of supply and demand. Russian state policy aimed at increasing older people employment is focused on changing the pension system thus enlarging labour supply. At the same time, international experience emphasizes the importance of measures that stimulate labour demand for the older people (primarily age anti-discrimination policy), and increase the convergence between older people labour supply and older people labour demand (training and retraining of the older people, creating flexible and part-time employment) [UN, 2002; OECD, 2006; Kolosnitsyna, Gerasimenko, 2014; Kolosnitsyna, Khorkina, 2016]. The development of a comprehensive policy to counteract the negative effects of ageing and increase older people employment is possible only on the basis of a detailed study of older people position on the labour market.

¹ Federal State Statistics Service – Age structure of Russian society, data on 14.06.2018
[http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography/]

² Hereinafter, the retirement age is the official retirement age before its change from 2019, that is, 55 – for women, 60 – for men, the age older than the working-age is respectively the age after the onset of this retirement age

³ Federal State Statistics Service forecast – Age structure of Russian society, data on 03.10.2018
[http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography/]

The position of older workers in the labour market is a broad field of research, and the analysis of all its components is not covered in one study. This thesis focuses on several aspects of older people position on the Russian labour market: (1) the level of economic activity, employment and unemployment is studied, their features are analyzed; (2) the factors of labour supply and its wage and income elasticity are determined; (3) the presence of age discrimination in hiring is analyzed on the example of one mass profession; (4) the gap between wages of workers of different ages and the factors that determine it are considered.

In foreign practice, old age is usually defined as 60 or 65 years and older; in Russian literature, people after the official retirement age and at preretirement age (5 years before the official retirement age) are usually considered. In this thesis, the age range is expanded – the main attention is paid to persons over 45 years old since this is the age when economic activity begins to decline and it is often mentioned as a lower border in age discrimination studies [Kozina, Zangiyeva, 2014; Lyashok, Roshhin, 2015]. Some parts of the study are devoted to certain age subgroups, for example, only persons at early retirement age are analyzed.

Brief literature review

The position of older persons in the labour market is explained by the labour supply theory [Killingsworth, 1983; Modigliani, 2005], the human capital theory [Schultz, 1961; Schultz, 1962; Becker, 1964] and labour demand and discrimination theories [Becker, 1957; Piore, 1970; Bergmann, 1971; Arrow, 1972; Phelps, 1972; Arrow, 1973; Cain, 1976; Aigner, Cain, 1977; Hamermesh, 1993]. The labour supply theory predicts the decrease of older people labour supply due to an increase in unearned income and a possible change in the conditions for the realization of preferences, which lead to reservation wage rise. The other theories predict the decrease of labour demand for older people. It could be explained by a fall in productivity due to human capital amortization or by the presence of age discrimination.

The position of older persons in the labour market has been studied in many Russian papers [Kondakova, Ivankova, 2001; Maltseva, Lyashok, 2012; Kuzina, 2013; Bushkova-Shiklina, Starikova, 2014; Grigoryeva, Bikkulov, Tsinchenko, 2014; Kolosnitsyna, Gerasimenko, 2014; Sonina, Kolosnitsyna, 2015; Sonina, 2015; Barsukov, 2016; Vishnevskaya, 2017; Lukyanova, Kapeliushnikov, 2019; Vishnevskaya et al., 2020] The recent increase in employment of Russian pensioners are usually explained by labour supply factors. It is noted that there may be restrictions on the labour demand side and a mismatch between the structure of labour demand and labour supply by profession and qualifications. Some papers discuss features of older people employment – its formality or informality, sector and industry structure, – but the related factors are not usually reported. The characteristics of the unemployed and economically

inactive older people have not been fully investigated. Differences in the characteristics of various age groups, changes occurring with the onset of retirement age, and possible employment trajectories of the older people have not been sufficiently studied.

Numerous foreign studies contain a description of possible approaches to assessing the influence of various labour supply factors, provide the comparison of possible methods and discuss the obtained empirical estimates of wage and income elasticities of labour supply [Heckman, Killingsworth, MaCurdy, 1981; Heckman, MaCurdy, 1982; Killingsworth, Heckman, 1986; Lazear, 1986; Pencavel, 1986; Mroz, 1987; Stock, Wise, 1990; Arellano, Meghir, 1992; Blomquist, 1996; Blundell, Duncan, Meghir, 1998; Blundell, MaCurdy, 1999; Euwals, Van Soest, 1999; Lumsdaine, Mitchell, 1999; Saget, 1999; Euwals, 2001; Gruber, Wise, 2002; Pencavel, 2002; Devereux, 2004; Bargain, 2005; Laitner, Silverman, 2005; Blau, Kahn, 2007; Blundell, MaCurdy, Meghir, 2007; Dandie, Mercante, 2007; Heim, 2007; Evers, De Mooij, Van Vuuren, 2008; Manoli, Weber, 2010; Bičáková, Slačálek, Slavík, 2011; Bargain, Peichl, 2013; Brown, 2013; Bargain, Orsini, Peichl, 2014]. There are several Russian papers devoted to the study of labour supply factors of older people [Roshchin, 2003; Merkur'yeva, 2004; Gurvich, Sonina, 2012; Kossova, Sheluntsova, 2014; Nazarov, Dormidontova, Lyashok, 2014; Dormidontova, Lyashok, Nazarov, 2015; Lyashok, Roshchin, 2015; Denisova, 2017; Bakhtin, Aleksandrova, 2018; Vishnevskaya et al., 2020]. However, the only work containing estimates of wage labour supply elasticity is based on data of working-age population [Larin, Maksimov, Chernova, 2016].

The lack of an unambiguous conclusion in the literature on how the productivity of an employee changes with age complicates obtaining reliable estimates of age discrimination since an assumption of equal productivity of employees is required. In opinion of experts, the most adequate way to assess age discrimination is an experimental (correspondence) study that assesses the level of discrimination in hiring. [Ward, 1969; Siegelman, Heckman, 1993; Heckman, 1998; Riach, Rich, 2002; Adams, Neumark, 2006]. The experimental approach is widely used in foreign literature to study age discrimination [Bendick, Jackson, Romero, 1997; Bendick, Brown, Wall, 1999; Gringart, Helmes, 2001; Riach, Rich, 2006; Riach, Rich, 2007; Lahey, 2008; Riach, Rich, 2010; Albert, Escot, Fernández-Cornejo, 2011; Ahmed, Andersson, Hammarstedt, 2012; Tinsley, 2012; Riach, 2015; Baert et al., 2016; Neumark, Burn, Button, 2016; Farber, Silverman, Von Wachter, 2017; Neumark, Burn, Button, 2019]. The only Russian research that used this method is devoted to ethnic discrimination [Bessudnov, Shcherbak, 2019]. Such assessments for age discrimination have not been conducted. Existing studies of age discrimination in Russia are based on in-depth interviews or analysis of job advertisements [Mosakova, 2006; Petrova, 2013; Kozina, Zangiyeva, 2014].

Decomposition method, its modifications and implementation to the analysis of wage differences are discussed in several foreign papers [Winsborough, Dickinson, 1971; Blinder, 1973; Oaxaca, 1973; Koenker, Bassett Jr, 1978; Jones, 1983; Reimers, 1983; Daymont, Andrisani, 1984; Jones, Kelley, 1984; Maddala, 1986; Cotton, 1988; Neumark, 1988; Buchinsky, 1994; Oaxaca, Ransom, 1994; Gardeazabal, Ugidos, 2004; Machado, Mata, 2005; Yun, 2005; Jann, 2008; Firpo, Fortin, Lemieux, 2009; Fortin, Lemieux, Firpo, 2011]. This method is widely used for the estimation of gender and ethnic discrimination [see, for example, reviews Stanley, Jarrell, 1998; Kunze, 2000; Weichselbaumer, Winter-Ebmer, 2005; Atal, Ñopo, Winder, 2009]. It has limited usage for the analysis of age discrimination. Nevertheless, it can be useful for the identification and comparison of wage gap determinants for different age groups and there are some papers where it has been implemented [Quinn, 1979; Wanner, McDonald, 1983; Shapiro, Sandell, 1985; Mueller, Mutran, Boyle, 1989; Galup, Dattero, Quan, 2004; Quan, Dattero, Galup, 2008]. In Russian literature, the decomposition method is used for the analysis of wage gap between various socio-demographic groups [Gimpelson, Lukiyanova, 2006; Oshchepkov, 2006; Stuken, 2007; Abazieva, 2010; Gimpelson et al., 2010; Maltseva, Nesterova, 2011; Lukiyanova, 2013; Sharunina, 2013; Polyakova, Smirnykh, 2016; Vakulenko, Leukhin, 2016]. No studies are examining the wage gap between Russian workers at different ages by this method. Studies on the older workers' wages have only recently appeared in Russia [Aistov, 2018; Gimpelson, 2019; Gimpelson, Zinchenko, 2019]. There are few of them and they cover only a small number of issues: they provide a general description of possible reasons for the relatively low wages of older workers. Detailed decomposition of wage difference on various factors is not presented.

Objectives of the research

The research aims to identify the features of the position of persons of the age group under consideration in the Russian labour market in the following aspects: characteristics of employment, unemployment and economic inactivity; factors of labour supply and its elasticity; factors of labour demand in terms of employment restrictions and wages.

The following tasks are set to achieve the goal:

1. Review of the literature on factors, features of status and characteristics of older people employment.
2. Descriptive analysis of the characteristics of employment, unemployment and economic inactivity of the older people in the Russian labour market, including the comparison with the situation in other countries.

3. Research of the older people labour supply: estimations of its wage and income elasticities as a parameter of labour force participation of people at early retirement age.
4. Research of the older people labour demand: a study of hiring selectivity and restrictions, in particular, age discrimination; analysis of the formation of older people's wage and the wage gap between workers at different ages.

Logic and structure

The objectives of the research determined the following structure. The dissertation consists of four chapters; each is devoted to a different aspect of the position of the older people in the labour market. Each chapter contains a literature review on the relevant topic, a description of the data and research methodology, obtained results and conclusions.

The first chapter presents the analysis of the dynamics of employment, unemployment and economic inactivity for people of different age groups using data from Rosstat and RLMS HSE⁴. Based on OECD data, the results are compared with other countries. The characteristics of the employed, unemployed and economically inactive are considered, the trajectories of employment and the features of unemployment and inactivity of the older people are revealed.

In the second chapter the factors of labour supply for persons aged 25-54 and persons at early retirement age are investigated on RLMS HSE data. Wage and income elasticities are estimated for working hours and economic activity.

The third chapter is devoted to age discrimination. The specificities of age discrimination estimation are discussed. For evaluation of age discrimination in hiring the correspondence study is conducted on the accounting profession as an example.

The fourth chapter contains an analysis of the wage gap between workers of different age groups. On RLMS data age-wage profiles are constructed, wage regression is estimated, and a decomposition of the wage gap is carried out, which makes it possible to identify the main factors of age differences.

The results of the dissertation research are presented in the conclusion. Also, the identified features of the position of older workers in the Russian labour market are formulated and the findings are interpreted from a state policy point of view.

⁴ "Russia Longitudinal Monitoring Survey, RLMS-HSE", conducted by National Research University "Higher School of Economics" and OOO "Demoscope" together with Carolina Population Center, University of North Carolina at Chapel Hill and the Institute of Sociology of the Federal Center of Theoretical and Applied Sociology of the Russian Academy of Sciences. (RLMS-HSE web sites: <http://www.cpc.unc.edu/projects/rlms-hse>, <http://www.hse.ru/org/hse/rlms>).

Methodology

At the *first stage* of the study⁵, an analysis of the characteristics of employment, unemployment and economic activity of people at different ages is carried out to present an overall picture of the situation of older workers in comparison with younger workers, as well as to compare the situation in Russia with other countries. The study is based on a simple statistical analysis of the significance of the observed differences between the groups under consideration; the base group for comparison is the age group 35-39 years old. The first step of the research is an examination of the levels and dynamics of economic activity, employment and unemployment in the Russian labour market by age groups and its comparison with similar indicators for other countries. The second step of the research is a comparative analysis of the characteristics of the employed, unemployed and economically active by age group. The studied characteristics are the main indicators of human capital, highlighted in the literature, – the level of education and health. In the third step, to better understand the possible employment options for persons at the retirement and pre-retirement ages, the characteristics of their jobs and their work history are studied in detail. Workers are divided into groups according to the time of workplace change. The following features of employment are studied: the formality of employment, the sector and the industry of employment, the occupational group of the worker. The fourth step of the research is devoted to identifying the characteristics of unemployment and economic inactivity of the older people: the duration of the job search and the period without work, the reasons for leaving the last job and the occupational group of the respondent in his last job.

At the *second stage*⁶, using regression analysis, the labour supply of the older people is studied to determine the factors that influenced their decisions about employment in the labour market and the amount of labour offered (in hours). The calculation is based on a method conventionally attributed to the second generation of labour supply elasticity studies [Dandie, Mercante, 2007]. The number of working hours and the fact of labour force participation are separately considered as dependent variables in this method. The assessment procedure is based on the paper of Heim [2007]. It has four steps. At the first step, the employment selection equation is estimated by the maximum likelihood method, based on which the Mills ratio coefficients are calculated. Heckman's method is used to solve the problem of non-random selection in employment [Heckman, 1979]. It allows us to take into account the fact that the

⁵ The first stage of the study is based on Rosstat data (sample labour force survey) from 1999 to 2016 and individual data RLMS HSE from 2000 to 2016. The age range of the sample is 25-72 years. A Cross-countries comparison is conducted on OECD.stat data for 2016. (OECD.Stat. URL: <https://stats.oecd.org/>)

⁶ The second stage of the study is based on individual and household data RLMS HSE from 2000 to 2014. Household data was used to identify the structure of the household in which the individual respondent lives, the employment status of the respondent's spouse and her / his income.

indicators of wages and the number of working hours are observable only if the individual has decided to enter the labour market.

In the second step, the wage equation is estimated. The predicted values are subsequently included as factors in the equations for the number of working hours and economic activity.

The third and fourth steps are evaluating of the labour supply equations: the number of working hours and the likelihood of economic activity. They are used to estimate the wage and income elasticities of labour supply.

This methodological approach is used in many papers [see. for example Bishop, Heim, Mihaly, 2009; Macunovich, 2010; Dostie, Kromann, 2013; Kumar, Liang, 2016], including those where only the elasticity of the probability of economic activity is estimated [Saget, 1999; Bičáková, Slačálek, Slavík, 2011].

The choice of variables is based on theoretical models of labour supply and numerous foreign and Russian empirical studies. For all equations, the list of explanatory variables includes key socio-demographic factors (gender, age, education level, self-reported health, marital status) and household characteristics (its size and presence of children up to the age of 7). For the economic activity equation, the employment of the spouse is also taken into account. In the wage equation, the length of experience in the current working place and the year of the survey are controlled. The characteristics of the place of residence are included in wage and economic activity equations. The unemployment level in the region is one of the explanatory variables in the economic activity equation. Indicators of unearned income⁷ and wages are included in the labour supply equations.

The elasticity coefficients are assessed for the following groups: persons in the main working age – from 25 to 54 years old, and persons at early retirement age – women from 55 to 59 years old and men from 60 to 64 years old. For the first group, the division is carried out by sex and marital status: single and married men and women are considered. For the second group – people at early retirement age – the division is carried out only by sex as the number of observations is smaller and one of the groups by marital status is prevailing.

At the *third stage*⁸, using the correspondence study, an analysis of recruitment selectivity is carried out to identify restrictions on labour demand for the older people, in particular, the existence of age discrimination. The experiment consists in creating fictitious written job applications, identical in everything except the studied characteristic (in this case, age), and subsequent sending them to advertised job vacancies. As a result of a statistical comparison of

⁷ The personal income of the individual was taken into account, minus his salary, but including his pension, if any, and the income of the spouse, if any.

⁸ The third stage of the study is based on the data of own field experiment – correspondence study, conducted in February-March 2018. Resumes were sent in pairs to 341 job openings.

the responses received (invitations to interviews or refusals), a conclusion is made about the presence or absence of discrimination. The objectivity of the assessment obtained by the correspondence study is ensured by the fact that the employer receives only carefully prepared resumes, in which the characteristics of candidates are selected in such a way that the employer perceives the productivity of both candidates as equal [Riach, Rich, 2002].

One of the main difficulties in applying the correspondence study to an estimation of age discrimination is the complexity of characteristics rotation, that is, a random selection of characteristics used in a resume from a certain list of them. Key characteristics such as seniority, years of education, and even the way personal information is reflected differ with age. Recent research recommends using characteristics that are closest to real resumes. In particular, the duration of professional experience should correspond to the age of the employee [Baert et al., 2016; Neumark, Burn, Button, 2016]. Besides, a relatively high or relatively low level of productivity in the prepared resumes can lead to a bias in the obtained estimates of discrimination due to the difference in the variation of unobserved variables [Siegelman, Heckman, 1993; Heckman, 1998]

The profession analyzed in the correspondence study is an accountant; the ages are 29 and 48 years. A preliminary analysis of real resumes posted on one of the most popular job search sites (hh.ru) in open access is carried out. Based on the examination of the content of real resumes for the studied ages and profession, the average or median values of the characteristics are estimated and fictitious resumes are created. In the course of the undertaken examination, the importance of creating two resumes for the older candidate with different work histories is determined. In the first one, the duration of professional experience is indicated in accordance with the age of the candidate. In the second version of the resume, the duration of professional experience is reduced in comparison with the maximum possible, since in real resumes, the beginning of professional experience as an accountant often occurred in the late 1990s - early 2000s, after the professional shift. The study is carried out only in Moscow due to resource limitations.

At the *fourth stage*⁹, the wage gap between workers of different age groups is estimated to identify the restrictions on the labour demand for the older people in terms of the specifics of their wages formation. In the first step, wage profiles by age are analyzed, separately for each year of the survey. Differences in average wages between age groups in one year are determined and their dynamics in constant prices over a number of years is analyzed. In the second step regression analysis is used to estimate the gap in the level of average wages between age groups

⁹ The fourth stage of the study is based on the individual data RLMS HSE from 2004 to 2015. The sample is composed of persons between the ages of 20 and 72 who have a main job.

other things being equal. The dependent variable is the natural logarithm of monthly wages. The selected specification includes the following variables: sex, age and educational level of the employee, his self-assessment of health, marital status and length of work experience in the last job, the unemployment rate in the region, year of the survey, region of residence and type of settlement, as well as the industry of employment and professional group of the employee. Differences in average wages are assessed as coefficients in a set of dummy variables per employee's age group. The oldest age group in the analysis is 65-72 years, the rest are five-year groups, starting from the 20-24 age group.

In the third step, the Oaxaca-Blinder decomposition method in its basic version is used for the analysis: the wage gap is decomposed into two terms, the effect of employee characteristics and the effect of returns on these characteristics. To reduce the impact of the problem of unobservable individual characteristics, the wage equation is evaluated separately for each of the five-year age groups. The wage gap is calculated to the "previous" age group, that is, wages for the 25-29 age group are compared to wages of the 20-24 age group, for the 30-34 age group - to the 25-29 age group, etc. To identify the characteristics that contribute to the increase or decrease in wages of the older people, a detailed decomposition of the effect of characteristics is carried out. Since a large number of dummy variables are used in the estimated equation, the coefficient normalization method is applied for the correct account of the influence of the base group [Yun, 2005].

Main findings

- 1) The first stage of the study shows that a third of the Russian population over the working age continues to work, but the **employment of these workers has certain peculiarities**. As is known, it is a decrease in the horizontal mobility of workers between jobs. It is shown that about half of the employed persons in the retirement age have been working for the same employer for more than 10 years, while at the age of 40-44 – about a third. At the same time, it was revealed that, first, when a change of job takes place after the retirement age, there is a worsening in job characteristics, which is shown in an increase in the prevalence of informal employment and a decrease in professional status. To a greater extent, this applies to women: among women 65-72 years old who have been working in current organization for more than 10 years, only 5% are employed informally, while among those who have changed job within 5 years – 27%; for women in the 35-39 age group, the same figures are 5% and 18%. Among women who have not changed their jobs at older ages, there is a high proportion of specialists of higher and intermediate qualifications. Among those who have changed jobs, the proportion of specialists is significantly lower, while the proportion of those employed in

unskilled labour and workers in trade and services is higher. Second, there is a redistribution of workers at the retirement age to certain sectors of employment. The trend towards an increase in the share of employees in sectors with significant state participation is observed for both men and women. In the public sector, older people have a relatively high chance of retaining their jobs, and these industries are also willing to hire older people. However, access to these industries is relatively difficult for those who have not previously worked there, which may be due to the necessity of special education and experience. Therefore, when moving to the public sector from other spheres, older people may face a decline in their professional status. After 50 years old, many people find work in housing and communal services and have a high chance of retaining their jobs there even after the onset of retirement age. The share of those employed in army and security forces, trade and finance declines with age; after 60 years old, there is a reduction in the share of those employed in transport. Men in the retirement age, in contrast to women, have rather high chances of finding a job in manufacturing and construction; women – in finance. Among people at the retirement age who have changed job, the share of those employed in trade is relatively high, although less than among younger ones.

- 2) At the first stage of the study, it is also revealed that **the behaviour of people at the retirement age in case of job loss also has its peculiarities**. First, there are gender differences. For women the duration of unemployment decreases sharply with the onset of the retirement age, that is, they tend to shift into economic inactivity. For men this is not the case: men, especially those with good health and a high level of education, are inclined to start looking for a new job. Second, persons at the retirement age can play the role of additional workers in the household and re-enter the labour market after a period of inactivity when necessary, that is, a job search can be cyclical. Third, the reasons for leaving the last job change with age. Persons at the retirement age tend to hold on to their place of work and are less likely to leave it on their own, for reasons such as dissatisfaction with wages, working conditions, relations with the team or management, or family reasons. At the same time, with the onset of the retirement age, the group of people who can afford not to work increases significantly, although its share remains relatively small. Poor health begins to play a significant role in the decision to end employment at the age of 40, however, with the onset of the retirement age, the significance of this factor decreases. Fourth, certain professional and qualification groups are distinguished, whose representatives can find work easier at the retirement age: specialists of the highest qualification level and workers in the sphere of trade and services. Conversely, there is a high risk of unemployment for mid-level specialists. In

general, the potential expansion of employment in the presence of employment opportunities is 15-30% of unemployed persons at the retirement age.

- 3) **The analysis of the labour supply**, carried out at the second stage of the research, shows certain specificities of labour supply of people at the early retirement age. The wage elasticity of working hours is significant only for women at the early retirement age. Wage and income elasticities of the probability of economic activity turn out to be significant for both women and men, both at the main working age and at the early retirement age. For "young pensioners", the modulus elasticities are significantly higher. The unearned income in the form of pensions, which appears with the onset of the retirement age, has a strong disincentive effect and conditions are emerging under which pensioners may not work. The high sensitivity of economic activity to the size of wages among older people, especially men, indicates their willingness to work, which will increase with the rise of offered wages. At the same time, with low wages, pensioners will leave the labor market. The economic activity of older people increases with the growth of regional unemployment, which confirms the role of pensioners in the household as additional workers.
- 4) **The analysis of labour demand constraints in the form of age differences in hiring** carried out at the third stage of the study make it possible to identify and evaluate discrimination on the example of one profession. Women accountant aged 48, living in Moscow and looking for work via the Internet, compared with 29-year-old, experiences greater difficulties in finding a job. The senior candidate is almost 2.5 times less likely to receive a positive response than the junior candidate. The junior candidate receives an invitation for an interview in more than 90% of cases, while the senior one – only in half of the cases. In other cases, the senior candidate is directly denied. If the senior candidate's work experience corresponds to his age, the difference in chances remains significant but is reduced by about 2 times. If we consider a senior candidate with less work experience, but at the same time significantly exceeding the experience of a young candidate, then the difference in the chances of finding a job increases up to 3.5 times. Based on the results of the analysis, it can be argued that there is a fairly high level of age discrimination in this particular profession in the Moscow labour market.
- 5) **The analysis of labour demand constraints in the form of wage differences**, carried out at the fourth stage of the study, confirmed that the age profiles of wages in the Russian labor market have a relatively early peak. Also, there is a tendency for its shift to earlier ages over the years. The decline in earnings after the age of 45 years old is significant. Workers over 55 years old receive, on average, lower wages than workers aged 20-24. The wage profiles of men are steeper than those of women.

Decomposition of wage differences between neighbouring age groups shows that the unexplained differential in wages for men is negative and significant from the age of 40, and for women - from the age of 55. It is impossible to unambiguously interpret this effect as the influence of age discrimination due to the problem of endogeneity. At the same time, a part of the explained wage differential due to industry and occupational group variables may reflect the impact of older workers segregation. In any case, the existence of such wage gap indicates a relatively low demand for human capital of older workers.

Note that the analysis does not distinguish between the effects of age and cohort; therefore, the obtained differences are interpreted in the context of age groups. The explained wage differential in older ages for men does not differ significantly from zero, for women it is negative only for the age group 64-72 years. The insignificance of this differential at the age group 50-64 years can be explained by the presence of two opposite tendencies: on the one hand, accumulated human capital depreciates with age (knowledge becomes obsolete, physical strength, stamina and reaction speed decrease), on the other hand, human capital accumulates in the form of experience. Also, the explained wage differential can be influenced by self-selection into employment, which begins to manifest itself more clearly at the pre-retirement age. The characteristics of labour markets (region, type of settlement, unemployment rate and year of the survey) make the greatest contribution among the factors that increase the wages of older people; thus, older workers have relatively high wages on the labour market with better conditions. The level of education also has a positive effect on earnings, reflecting the greater value of educated workers to the labour market. The employment sector and the professional group reduce the level of wages of older workers; it may be a consequence of discrimination – ousting pensioners from high-paid industries and/or positions. Older workers are often employed in jobs that do not require high qualifications, or in industries with relatively low wages (education, healthcare, trade). The better position of working pensioners who have retained their jobs from the pre-retirement period is confirmed by their higher wages compared to those who changed jobs after the onset of retirement age.

Contribution

This dissertation contributes to the empirical literature that analyzes the position of older people in the Russian labour market.

- 1) The contribution of the dissertation research in terms of **analyzing the employment peculiarities of older persons** is that it is revealed that the duration of employment with the same employer and the change of employer occurring at retirement or pre-retirement age

influence the employment formality, the employment sector and the professional group of older workers. It is shown that job change at pre-retirement and retirement ages for women is associated with significant risks of transition to informal employment and decline in professional status.

- 2) The contribution of the dissertation research in terms of **analyzing the characteristics of unemployment and economic inactivity of older persons** consists in the following: gender differences in the behaviour in case of job loss are determined, changes in the reasons for leaving the last job occurring with age are analyzed, and professional and qualification groups, whose representatives find it easier to find work at retirement age, as well as those whose representatives find themselves in the zone of the greatest risk of unemployment, are identified.
- 3) The contribution of the dissertation research in terms of the **study of the factors of labour supply of older persons** is that estimates of wage and income elasticities of labour supply of persons at early retirement age are obtained. They are higher than estimates of labour supply elasticities for persons aged 25-55 years. This shows the greater sensitivity of the labour supply of the older people to the household financial condition and the proposed level of wages.
- 4) The contribution of the dissertation research in terms of **studying labour demand constraints in the form of age differences in hiring** comprises the fact that estimates of age discrimination in hiring are obtained in the correspondence study for the first time for the Russian labour market. They confirm the existence of discrimination on an example of accountants on the Moscow labour market. The method used allows comparing the results obtained with similar foreign studies.
- 5) The contribution of the dissertation research in terms of **studying labour demand constraints in the form of wage differences between workers at different ages** consists in the estimation of explained and unexplained wage differentials between neighbouring age groups, ranging from 25-29 years old and ending 65-72 years old, using the Oaxaca-Blinder decomposition method. These estimations reflect the relatively low demand for older workers labour. In addition, a detailed decomposition of explained wage differential is made, both in general and for men and women separately, showing the decisive role of labour market characteristics in wage formation in comparison with the characteristics of the employee himself.

List of author's original articles

1. Klepikova E. A. Vozrastnaya diskriminatsiya pri nayme: rezultaty eksperimentalnogo issledovaniya [Age Discrimination in Hiring: An Experimental Study] // Ekonomicheskaya politika [Economic Policy]. 2019. Vol. 14. No. 2. P. 64-89.
2. Klepikova E. A., Kolosnitsyna M. G. Eydzhizm na rossiyskom rynke truda: diskriminatsiya v zarabotnoy plate [Ageism at the Russian Labour Market: Wage Discrimination]. Rossiyskiy zhurnal menedzhmenta [Russian Management Journal]. 2017. Vol. 15. No. 1. P. 69-88.
3. Klepikova E. A. Elastichnost predlozheniya na rossiyskom rynke truda [Labor supply elasticity in Russia] // Voprosy Ekonomiki. 2016. No. 9. P. 111-128.