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This research explores the relation between labor mobility in pre-retirement and retirement ages and further employment in old age in Russia. Older workers often face the challenge of keeping their job due to impaired health, age discrimination, and other factors. Job change can be a potential strategy to maintain employment in old age. Our study uses panel data of the Russian Longitudinal Monitoring Survey of Higher School of Economics (RLMS-HSE) for 2010–2017. Logistic regression models show that labor mobility can be an effective strategy to maintain employment in old age but only for men. Older workers are more likely to change their job if they do not have stable employment relationships and are not satisfied with their current job.

JEL Classification: Z

Keywords: older people, pensioners, employment in old age, labor mobility

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Introduction

The topic of employment of older individuals is relevant for Russia due to the recent reforms in Russian pension system. Beginning on the 1st January, 2019, the state retirement age is increasing by 1 year annually up to 60 years for women and 65 years for men by 2023 (350-FZ, 2018). The early retirement age has also been raised for the Far North workers, medical workers, teachers, the workers of artistic professions. The ongoing retirement age increase in Russia causes concern that not all the people of pre-retirement and retirement ages can keep their jobs or find new ones.

In some cases, employers prefer to replace older employees with younger ones due to their more recent training and potentially higher productivity (Bratsberg et al., 2003). Surveys show that, in Russia, ageism in employment is widespread, and people meet obstacles in finding a job long before the state retirement age.[4]

In the last two decades, the total number of working pensioners has increased as has the share in the total number of pensioners (in 2016, 15.3 million or 35.7% of the population)[5]. Extensive research has been done on the factors of employment in older age in Russia (Gora et al., 2010; Levin, 2015; Sonina, Kolosnitsyna, 2015).

However, there is little research on labor mobility within this age group. The majority of the workers of retirement age continue working at the same job (Maleva, Sinyavskaya, 2007). However, one of the potential strategies to maintain employment may be to change a job. This transition can be involuntary because of impaired health, a high workload, or age discrimination. However, the work experience of older individuals may be in demand, for example, at a different job in a related occupation. In the latter case, public employment services should assist workers of pre-retirement ages finding a new job and/or occupation.

This research evaluates the effect of a job change in pre-retirement or retirement age on maintaining employment. It addresses the following questions: (1) what factors influence changing job in pre-retirement or retirement age; (2) whether, and to what extent, this transition contributes to maintaining employment in retirement age. To answer these research questions, we apply two independent logistic regression models based on seven annual waves of the Russian Longitudinal Monitoring Survey – Higher School of Economics (RLMS-HSE)[6,7] (2010–2016).

This paper has the following structure. Section 1 overviews theoretical and empirical studies on labor mobility in old age in Russia and other countries. Section 2 describes the applied

[4]Validata survey (2016).
[5]http://www.gks.ru
[6]https://www.hse.ru/en/rlms/
[7]http://www.cpc.unc.edu/projects/rlms-hse

methodology and data, then the main trends in labor mobility in Russia are discussed. Section 4 summarizes the results. Finally, the conclusion discusses the results and describes areas for future research.

1. Literature review

1.1 The types of labor mobility

Theoretical and empirical studies use many terms related to the phenomenon of labor mobility. Tenure or specific tenure is the duration of employment in the current job. Closely related to this, specific human capital reflects the expenditures on the employment relationship (searching for a worker, training, etc.) that has no value outside of this relationship (Farber, 1999).

The existing studies are based on two main approaches to define labor mobility. The first approach represents the employees' ability to change their job; the second one implies an actual change of job. Quantitative studies more often apply the second approach because of the simplicity of accountability (Maltseva, Roshchin, 2007).

There are different types of labor mobility distinguished by the similarity between previous and present jobs. Feldman (2007) differentiates career change, organizational change and job change. Career change is the transition to a new occupation that requires a different skill set. Organizational change means the transition to a new employer without a change of occupation. Finally, job change refers to the transition to another position within the same organization, but without a change of occupation.

We define labor mobility as a change of job and/or occupation during the last three years preceding the survey. The separate proportions of those who changed their job and those who changed their occupation are too small for analysis, so we merged them. RLMS also contains a question about position change within the organization, but these transitions can include promotions and demotions without substantial changes of duty, or internal restructuring. To estimate, whether an individual has experienced a promotion/demotion within the same organization, we may look at changes in earnings. On panel data, these changes require the methodological development of earnings discounting that we do not estimate in this paper, although we plan to take it into account in future research.

1.2 Theoretical concepts of labor mobility

As far as labor mobility characterizes employment relationships, it depends not only on employee behavior but also on employer policy, instructional norms, the economic situation, etc.

In life-course analysis, such as career trajectories, it is crucial to take into account the institutional context, but its impact depends on individual choices (Henretta, 2003).

Several theories explain the phenomenon of labor mobility. According to human capital theory, long-term employment relationships contribute to specific human capital accumulation through job training and experience. This capital is lost at resignation or redundancy which is unprofitable for employers and for employees, so long-term employment relationships are preferable for both sides (Gimpelson, Kapeliushunikov, Otshepkov, 2017). Specific human capital accumulates with age; therefore, labor mobility rates decrease in older age groups.

Based on the job-matching theory, labor mobility represents the process of searching for optimal matching between employees and their job (Jovanovic, 1979; Flinn, 1986). The primary measure of this match is labor productivity, influencing the employee's wage. With age, and the number of jobs, the probability of optimal matching between employees and their jobs increases, thus the rate of labor mobility is lower in older age (Gimpelson, Kapeliushunikov, 2011).

The growing demand for production in prosperous sectors of the economy and, as a result, the increasing wages in these sectors are the factors of labor mobility in the theory of demand-side shocks (Jovanovic et al., 1990; Davis et al., 1995). Technological progress and the business environment determine the requirements for workers, so labor demand shifts from stagnant to growing sectors of the economy.

In practice, labor mobility depends on the interaction of the above factors. Firms take into account the economic situation, which determines labor demand. In particular, technology shocks and reduced labor demand may lead to redundancy and labor mobility growth, but firms interested in specific human capital prefer to dismiss less senior workers because these people have less knowledge and experience (Farber, 1999).

Early retirement and unemployment benefits are among the alternatives to labor mobility in older age. Generous unemployment insurance for the involuntary unemployed or the possibility of retiring earlier, do not create incentives for labor mobility (Tatsiramos, 2009).

The theoretical explanation of labor mobility also lies in employee characteristics as confirmed in empirical studies. Blumen, Kogen & McCarthy (1955) distinguishes two types of workers (high mobility and low mobility). The probability of job change depends on the type or, in other words, on the number of previous job changes. The employee's behavior varies within socio-demographic groups characterizing different needs and possibilities to realize these needs (Maltseva, 2007). For example, adult workers with children and older individuals tend to prefer stable home lives and community environments (Lee & Maurer, 1999; Maltseva, 2007). Thus, as a rule, they change job less often than their younger and unmarried colleagues, except in cases when labor mobility is due to family circumstances (Kirchmeyer, 2006). Finally, the probability

of labor mobility increases if the probability of getting a better job is high and the transition costs of a new job are low (Maltseva, 2007).

1.3 The determinants of labor mobility in older age

The theories of labor mobility explain its decline in older age. Older worker mobility is determined not only by their motivation to change jobs, but also by their ability to do so in terms of their health, productivity, etc. (Feldman, 2007). In general, compared to younger and middle-aged workers older people have a lower probability of being re-employed (Ichino et al., 2007). Searching for a new job in older age may be caused by growing physical problems, cognitive deficits, although worsening health is one of the main constraints to find an alternative job.

Better educated workers, as a rule, have more stable employment relationships due to their high specific and general human capital (Farber, 1999). Empirical studies on the Russia labor market show that employment stability rises with educational level (Nesterova, Sabirianova, 1999; Gimpelson, Kapeliushunikov, Otshepkov, 2017). Highly educated and qualified workers do not tend to change their job because they can lose out on salaries at a new job (Maltseva, 2007). Unique competencies of older people, and their narrow vocational specialization, contribute to maintaining their current job (Potekhina, Chizhov, 2016). Based on these studies, we hypothesize that a better educational level and specific tenure contribute to maintaining the current job in old age.

Other factors, including the sector of the economy, occupation, or wage, often mediate gender differences in labor mobility. Nevertheless, empirical studies in Russia indicate that women tend to have longer relationships with their employers than men (Maltseva, 2007; Gimpelson, Kapeliushunikov, Otshepkov, 2017) although women benefit from labor mobility much more than men (Maltseva, Roshchin, 2007).

Besides individual-level factors, Feldman (2007) also differentiates job- and occupation-level factors. Job-level factors relate to job characteristics (working conditions, job satisfaction), while occupation-level factors correspond to the changing labor demand in an occupation due to technological progress.

The majority of studies on labor mobility focus on job-level factors: the sector of the economy, the size and ownership of enterprise, salaries, or job satisfaction. The salary/wage is one of the most significant influencing factors on decision-making about labor mobility. In the 2000s, workers at Russian enterprises had a ‘penalty’ for specific human capital that decreased their earnings by 0.7 – 1.6% for each additional working year. This ‘penalty’ gradually declined, and long-term employment relationships have had a positive return since 2005 (Maltseva, 2009). In general, higher-paid workers are less likely to quit and, as a result, have lower labor mobility (Freeman, 1980; Morternsen, 1986). People are less inclined to change the position where they

hold key positions. The transition to different occupations is mainly associated with higher earnings at a new job (Maltseva, 2005). The financial resources of older individuals may prompt them to change their career despite the financial uncertainty associated with doing so (Doeringer, 1990; Feldman, 1994). Besides personal financial resources, the behavior of older individuals in the labor market is substantially determined by the economic well-being of their family. Family income per capita is also a factor of labor mobility in older age (Maltseva, Roshchin, 2007). We suppose that higher earnings decrease the probability of job change.

In older age, it can be more desirable to leave a highly stressful job and find a more personally pleasant one (Feldman, Leana & Bolino, 2002). Older individuals prefer to substitute full-time work with a part-time one so to increase their time with families and friends (Johnson, 2011). In general, low job satisfaction contributes to labor mobility (Boeckerman & Ilmakunnas, 2007). Workers dissatisfied with their jobs tend to search for an alternative job that significantly influences on real job change (Cornelissen, 2006). Thus, we hypothesize that job satisfaction decreases the probability of a job change.

In Russia, substantial differences in labor mobility exist between state and private enterprise. Private enterprise largely depends on the economic situation and market demand, therefore they usually have a higher labor turnover than state enterprises. Workers in private enterprises change their jobs twice as often as their peers in state enterprises (Maltseva, 2009). Labor mobility is also higher among the workers of small and micro enterprises (Gimpelson, Kapeliushunikov, Otshepkov, 2017). In large enterprises, workers may have a narrow specialization so their specific human capital has more value than in small enterprises (Maltseva, 2009). Lower labor mobility and long tenure are typical for agriculture, education, health care, and the armed forces (Gimpelson, Kapeliushunikov, Otshepkov, 2017). Thus, we hypothesize that the workers of state enterprises, large enterprises, budget sectors of the economy (education, health care, culture, or science) are less likely to change their jobs.

Finally, we suppose that early retirees may seek new jobs due to working in hazardous or dangerous industries, a high work load, or impaired health. Early retirees are younger when exiting the labor market entirely so labor mobility could be a strategy to maintain their employment in older age.

2. Data & Methodology

The research uses seven annual waves of RLMS-HSE[8] conducted from 2010 to 2016.

[8]The RLMS-HSE is an annual nationally representational survey that combines individual-, household- and community-level data on migration, education, employment, health, educational and medical services, etc. This is conducted by the National Research University Higher School of Economics and ZAO Demoscope, together with Carolina Population Center, University of North Carolina at Chapel Hill and the Institute of Sociology RAS. RLMS is the only longitudinal survey in Russia; the data has been collected 23 times since 1992 till now.

Our sample consists of three 5-year panels (2010–2014, 2011–2015, 2012–2016), where the first year corresponds to the initial point of observation t_0, the next three years to intermediate point t_1, the fifth year to final point t_2 (Tab. 1). We select individuals aged 45 years and over at t_0 who will be working pensioners at $t_{1.3}$. Thus, this contains the individuals retired at the state retirement age[9] and early retirees.

We choose five-year periods of observation because shorter ones contains a smaller proportion of older individuals who experienced labor mobility which leads to inconsistent regression estimates. In contrast, a longer period provides insufficient number of observations in the sample due to panel attrition which also causes inconsistent results.

Tab. 1. Sampling scheme

Wave	Initial point, t_0	Intermediate point, t_1			Final point, t_2
		$t_{1.1}$	$t_{1.2}$	$t_{1.3}$	
1	2010	2011	2012	2013	2014
2	2011	2012	2013	2014	2015
3	2012	2013	2014	2015	2016

Source: RLMS-HSE 2010-2016

The sample includes 2,069 individuals (598 men and 1,471 women). The selection of observations led to unequal shares of men and women, but working with panel data is possible without additional weighting by taking into account the attrition of the respondents from the panels.[10]

Most of the sample at the initial point of observation includes residents of cities, towns and regional centers (70.1%). In general, respondents have secondary or specialized secondary education (59.7%). Their health status is generally estimated as average (76.2%), and over time it deteriorates; the proportion of people with disabilities increases (from 5.1% at t_0 to 6.5% at $t_{1.3}$). The share of people who changed or started a job or occupation at least once in three years $t_{1.1}$–$t_{1.3}$ is 21.7% (see Tab. A1 in Appendix).

To answer the research questions, several econometric methods can be applied. Logistic regressions estimate the parameters of a regression model for a binary dependent variable. Heckman selection models are applied for regressions with a continuous dependent variable from the selected sample. Probit models with sample selection are used for an ordered categorical dependent variable. For survival analysis methods, not only outcomes are of interest, but also the time intervals during which outcomes may occur. Thus, for our data and the purpose of this paper we use logistic regressions.

We reveal the significant factors of labor mobility and employment of older individuals estimating two independent logistic regressions:

[9] 55 and 60 years for women and men correspondingly
[10] https://www.hse.ru/rlms/faq/weights

$$\ln [P_{event}/(1-P_{event})] = B_0 + B_1x_1 + B_2x_2 + \dots B_ix_i \text{ , where:}$$

P_{event} is the probability of occurrence of the event and, x_1, x_2,…, x_i are the values of independent variables.

The dependent variables are as follows:

1) The start or change of a job or occupation at least once in three years $t_{1.1}$–$t_{1.3}$ (yes/no).

2) The pensioner's employment status in the year t_2 (employed/unemployed).

The independent variables of the first and the second equations were measured at t_0 and $t_{1.3}$ respectively. These variables are grouped into three categories:

1) The characteristics of the job: the sector of the economy, formal/informal employment, th elength of the working-week, specific tenure, the type of enterprise ownership, the size of the enterprise;

2) Job satisfaction: satisfaction with working conditions, earnings, opportunities for professional development;

3) Economic factors: pensioner's earnings expressed in relation to the regional minimum wages (RMW) in the corresponding year.

We also control for socio-demographic factors: age, type of settlement, education health, disability, eligibility for early retirement, and marital status. In the second equation, we also included a variable that shows whether an individual has started or changed a job or occupation in the last three years preceding the survey. We run separate regression models for men and women.

3. Main trends in labor mobility in Russia

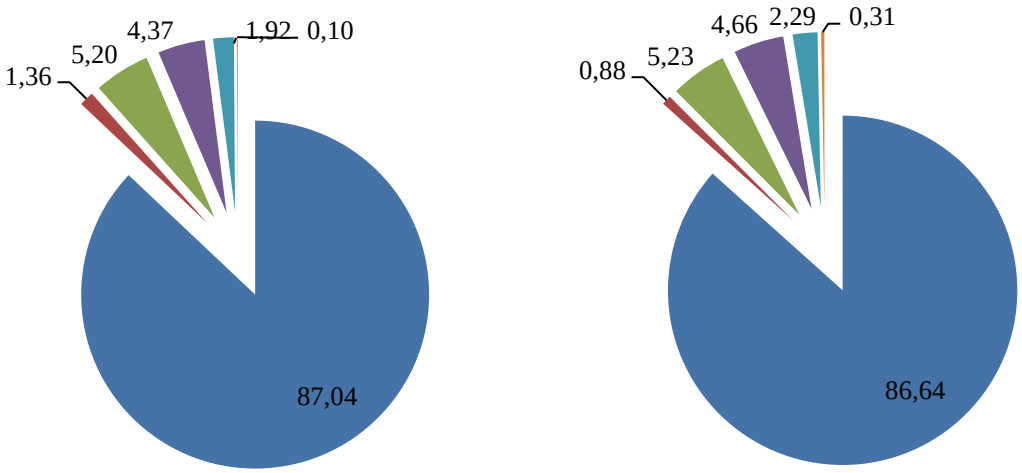
Previous studies on labor mobility in Russia indicate its decline in the 2000s in comparison with the 1990s. In the 1990s, almost every second employee quit or got a new job annually (The employment review in Russia, 2002). The explanation for the high labor mobility rates in this period in comparison with the previous and following ones is the structural changes in the economy in the 1990s caused by mass occupational relocation (Sabirianova, 2002). More recent studies show that employers changed 18% of working-age employees annually 2000–2005 (Maltseva, 2007). In older ages, labor mobility is likely to be slightly lower.

The length of specific tenure demonstrates the opposite dynamics over the period 1994–2005. In 1994, the most common employment relationships were 10–20 years (more than 20% of the employed) while in 2005 more than 25% of the employed had been working for less than a year. This trend is to some extent a consequence of the expansion of the private sector in Russia, characterized by high volatility and unstable labor relationships (Maltseva, 2007).

The Federal State Statistics Service (Rosstat)[11] contains limited data on labor mobility. The indicator of specific tenure is available for the employed population but not by age group.

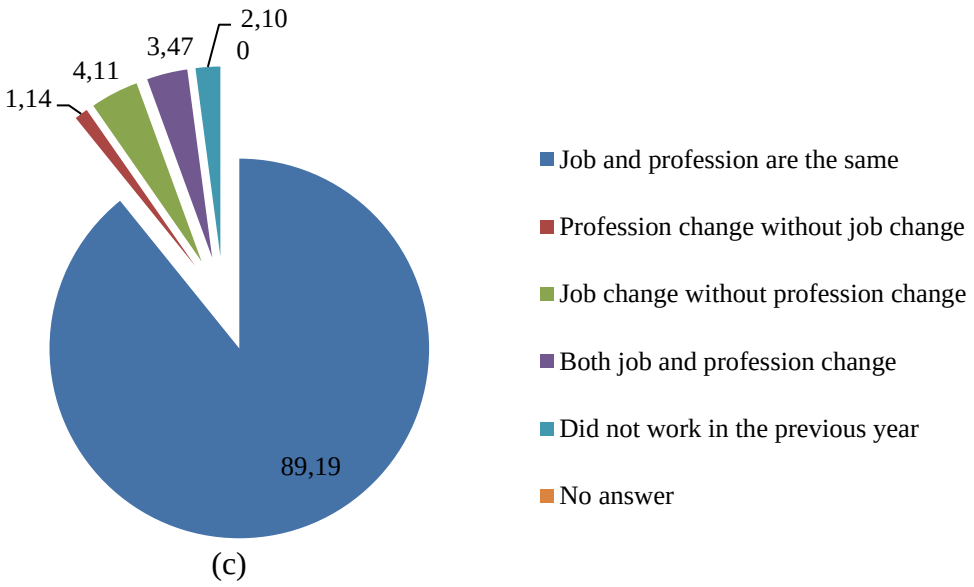
From 2010 to 2016 the proportion of employed with the longest specific tenure slightly increased by reducing the proportion of those with specific tenure of less than five years (Fig. A1 in Appendix). The growing proportion of long-term employment relations occurred in the period of economic growth (2012–2013) and then during the economic crisis of 2013–2014. Despite the different stages of the economic cycle observed in this period, scholars explain the steady growth of the length of specific tenure by the mutual dynamics of job creation and liquidation (Gimpelson, Zhihareva, Kapeliushnikov, 2014).

These figures do not provide any information about the labor mobility rates of older individuals. To fill this gap we calculate the proportion of the employed, aged 45 years and over, who changed their job and/or occupation during the last year (Fig. 1). During 2010–2016, the highest labor mobility rates of the target population were observed in 2012 and 2014 (12.9% and 13.1% changed their job and/or occupation respectively), in the period of the economic growth and during the crisis. In 2016, the proportion of those who changed their job and/or occupation declined to 10.8% which was the lowest level for the 7 years of observation.



(a) (b)

[11]Rosstat: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/en/main/

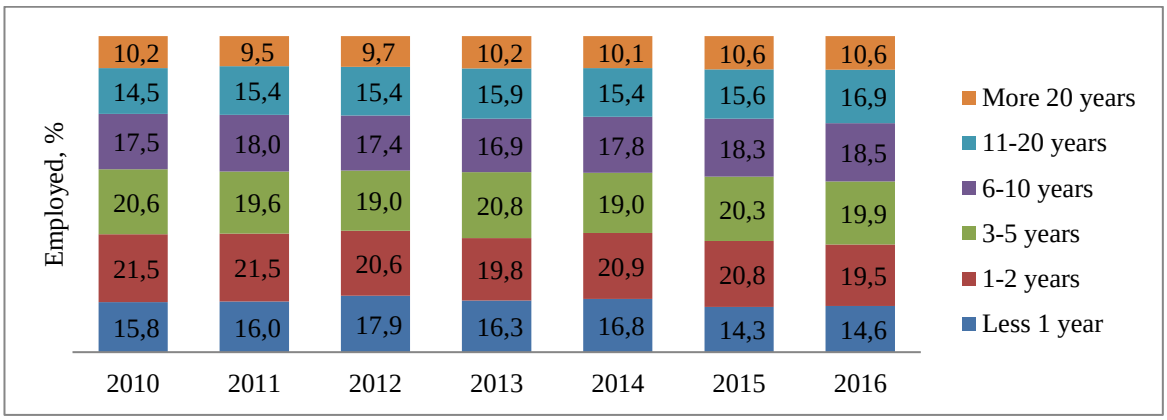


(c)

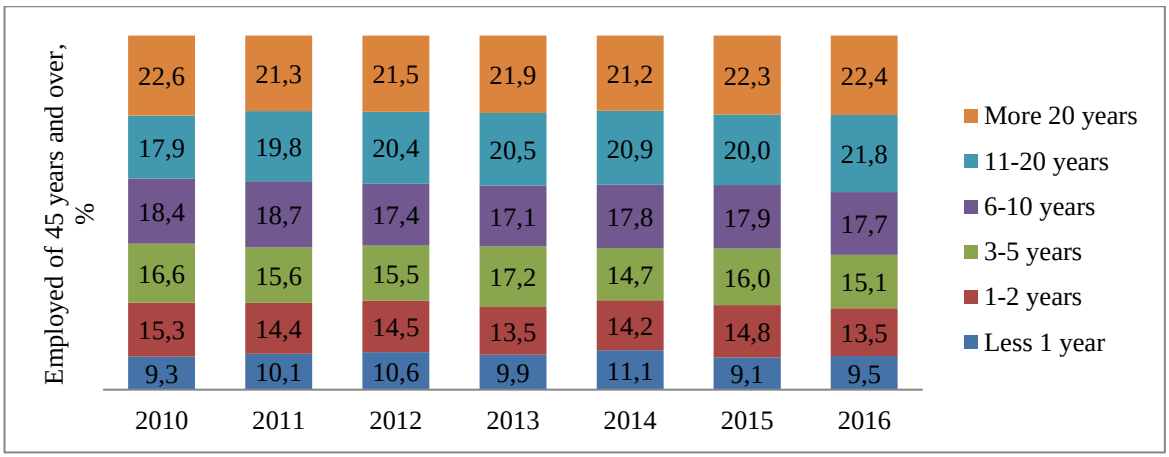
Fig. 1. Dynamics of labor mobility rates for the employed people aged 45 years and over in 2012 (a), 2014 (b), 2016 (c), by %

Source: RLMS 2012, 2014, 2016

We also calculated the dynamics of the specific tenure of the employed at the age of 45 and over and compare it with the whole employed population. The distribution of specific tenure for the older age groups has shifted towards more durable employment relationships. Despite these differences, the tenure dynamics of the specific tenure of the employed aged 45 years and over, and the whole of the employed population in 2010–2016 were similar. The calculations based on RLMS (Fig. 2), and Rosstat data (Fig. A1), indicate an increasing share of employed with longer specific tenure. Short-term employment relations with specific tenure of less than a year were more common in both groups in 2012 and 2014.



(a)



(b)

Fig. 2. Structure of 'all ages' employed population (a) and the employed people of 45 years and over (b) by the length of specific tenure

Source: RLMS, 2010-2016

4. Results

Since our research is based on two independent logistic regression models, we separated the results into two sections: (1) the factors of labor mobility in pre-retirement and retirement age and (2) labor mobility and other factors of employment in post-retirement age.

4.1 Factors of labor mobility of older individuals, by gender

According to the models, the probability of changing job reduces with age, which corresponds with the results of other theoretical and empirical studies for Russia and other countries. Older men are more likely to change their job in regional centers or urban type settlements as compared to city inhabitants, by 12.2% and 20.2% correspondingly (see Tab. A2 in Appendix). The probability of job changing is lower for women who live in rural areas and higher for those who live in urban type settlements and regional centers.

Low educational level is a barrier to labor mobility for men because it decreases the probability of changing a job by 11.5%. Self-evaluation of health does not have a significant effect for either gender. Poor health may push older individuals to find a less stressful job, while better health allows them to look for a new job, and thus the total effect of health on labor mobility is insignificant. More generally, economic theories explain the effect of health on the probability of further employment in different, contradictory ways[12] so the total effect remains

[12] On the one hand, poor health decreases the labor productivity that leads to earnings reduction. Besides, poor health provides the access to public disability pensions and other social benefits. Both effects decrease the probability of futher employment. On the other hand, poor health requires additional expences for medicaments that stimulates an employee to continue working and increases the probability of their employment (Lyashok, 2017).

unclear (Lyashok, 2017). Various measures of health, such as self-assessment and chronic diseases, applied in empirical studies can also be a source of inconsistent results (Dwyer, Mitchell, 1999). Several studies examine the dynamics of individual health and its impact on employment. In particular, Bound et al. (1999) confirm the significant impact of health shocks on the exit from the labor market and job change.

The insignificance of the educational level on women's labor mobility seems to contradict the previous studies on labor mobility in Russia. However, if we look at specific tenure, it is significant in all models, both as a continuous and a categorical variable. Compared to a specific tenure of less than one year, the maintenance of current employment relationships from 1–2 years to longer periods reduces the probability of labor mobility of older people by 21.1–49,2% for men and 34.8–45.6% for women. It means that the educational level of older individuals does not determine their propensity to change job, but their experience at the current workplace does.

The probability of a job change is higher in private enterprises compared to state-owned ones: the average marginal effect is 8.6% for men and 10.2% for women. In comparison with the employment in the social sector (health care and social services, education, culture) employment in construction, transportation or communication contributes to men changing job. These results are similar to those examined in the literature review. According to the regression models, labor mobility of older individuals does not depend on the enterprise size.

Earnings expressed in relation to regional minimum wages (RMW) do not have a significant impact on the probability of job change of older individuals. On the one hand, labor mobility is often associated with the possibility of getting higher salaries at a new job (Maltseva, 2005). On the other hand, job change involves some financial risks related to future earnings, therefore more well-off older people may afford such a risk (Doeringer, 1990; Feldman, 1994). Thus, the mixed influence of earnings on labor mobility could lead to its insignificance in the models.

The non-financial aspects of the job may play a more substantial role in the employment of older people. To support this, we find that particular aspects of job satisfaction are significant in our models. Complete satisfaction with working conditions reduces the probability of labor mobility of older individuals by 15.4% for men and 10.1% for women in comparison with complete dissatisfaction. Paradoxically, men's complete satisfaction with earnings contributes to changing occupation or job by 23.6%. It may be a particular group of people who can change their life environment and continuously strive for better. To explain this effect it is necessary to examine this particular group more precisely that is out of scope of this study. Average satisfaction with earnings decreases the probability of labor mobility by 8.4%.

4.2 Labor mobility and other factors of employment in older age

As in the case of labor mobility, the probability of maintaining employment decreases with age approximately by 0.6-0.7% per year (see Tab. A2 in Appendix). Poor and very poor self-evaluated health also impedes employment of older men, which corresponds to the studies on the employment of older people in Russia and other countries (OECD, 1998; Sinyavskaya, 2005; Kovrova, 2007; Gora et al., 2010). The type of settlement is insignificant in this model specification.

The level of educational has been shown to be a significant determinant of employment for older individuals (OECD, 1998; Levin, 2015) but none of our models show its significance. The longer the duration of the current employment relationship, the higher the probability of maintaining employment at older ages. In particular, 6–10 years and more than 20 years of specific capital contribute to men's employment by 16% and 22.2% respectively. In other words, specific capital plays a more critical role in maintaining employment at older ages than educational level.

Some groups of older workers may adapt to changes in their physical capabilities or worsening health by finding a less stressful or challenging job. Job change during the previous three years influences older men's probability of continuing working by 9.9%. It means that labor mobility might be an active strategy of older men in the labor market.

Most job characteristics and satisfaction with working conditions are significant for employment of older individuals. Women's employment in the army, civil services, construction, transportation and communication, and agriculture reduces the probability of continuing employment by 9.5%, 17.7%, 16.4%, and 15% respectively compared to employment in the social sector (health care and social services, education, culture). Low earnings (below 3 RMW) compared with the highest earnings (more than 5 RMW) reduce the probability of maintaining women's employment after retirement by 9.9% and 8.2% respectively. For men, only a higher level of earnings is essential, with earnings equal to 2–3 RMW reducing the probability of employment.

Satisfaction with working conditions significantly contributes to maintaining employment in older age for women. Partial or average satisfaction increases the probability of continuing working on average by 8.8% compared to complete dissatisfaction. For women, a full-time job correlates with maintaining their employment.

5. Discussion and conclusion

This paper focuses on the phenomenon of labor mobility in pre-retirement and retirement age. In recent years, Russia has been experiencing growth in the employment rate of older male and female workers. This population often face obstacles in the labor market: worsening health, decreasing productivity, and competition with younger workers. This research investigated the question of whether labor mobility could be a strategy to maintain employment in post-retirement age. We explored the factors of labor mobility in pre-retirement and retirement age and their impact on the employment in post-retirement age.

To answer these questions, we constructed two independent logistic regressions using panel RLMS data (2010–2016). We defined labor mobility as a job and/or occupation change or a post-retirement re-entry to the labor market. The inclusion of the last group of individuals may increase the proportion of those who experienced labor mobility, but we consider this an 'active strategy' of older people in the labor market.

The propensity for labor mobility is mainly determined by the older workers' accumulated specific human capital rather than general human capital. Our results do not confirm our first hypothesis because health status and educational level (except for men for the latter) have no significant influence on the probability of labor mobility in pre-retirement and retirement age. In contrast, long-term employment relations decrease the probability of labor mobility. Thus, the study confirms the hypothesis about specific tenure, which contributes to maintaining the current job in post-retirement age.

Labor mobility in pre-retirement and retirement age depends on job characteristics – the sector of the economy, the enterprise ownership, the satisfaction with the job; these correspond to previous studies on labor mobility in Russia (Maltseva, 2009; Gimpelson, Kapeliushunikov, Otshepkov, 2017). Workers of pre-retirement and retirement ages prefer not to change a stable job with social guarantees in the public sector, which overall confirms our hypothesis about job characteristics.

None of our models show a significant impact of early retirement on the probability of labor mobility in pre-retirement and retirement age. Even though the percentage of women entitled to early retirement was 19.5% in t_0 and 19.6% in $t_{1.3}$ and the percentage of men was 17.2% in t_0 and 14.9% in $t_{1.3}$, the sample may not be representative for assessing the impact of this factor. It may also be due to standard practices of early retirement pensions for other categories: public sector workers, the Far North workers, and the military. It also may be that

employment strategies do not differ much between early and ‘regular’ pensioners. So, in this research the hypothesis about early retirees was rejected.

The earnings expressed in relation to regional minimum wages do not significantly influence the probability of labor mobility in pre-retirement and retirement age. It is probably necessary to test other specifications of this variable: the ratio of pensioner’s earnings to regional average wage or the size of the pension. Studies on labor mobility usually take into account the actual or expected size of the earnings at a new job so adding this variable into our models could be a direction for further research. Unlike financial aspects of the job, satisfaction with working conditions significantly contributes to the comfort of employment in post-retirement age. Thus, our analysis partly confirms the hypothesis about the effects of economic factors and job satisfaction: satisfaction with working conditions reduces the probability of changing job while higher earnings have no significant effect.

We can consider labor mobility in pre-retirement and retirement age as the strategy to maintain their employment only partially. In the model for women, labor mobility is insignificant. For men, changing job during the previous three years increases the probability of maintaining employment. We assume that these transitions can be linked to early retirement schemes in the army and civil services, but additional research for confirmation of this fact is needed.

The findings described above have policy implications. First of all, we do not reveal that health is a severe constraint to labor mobility in older age. This means that labor market policy towards older individuals could offer more active measures on searching for a new job and/or occupation instead of early retirement benefits in the case of dismissals shortly before the retirement age. Although educational level does not influence the probability of job change employers may appreciate the older workers' specific human capital. The impact of lifelong learning on older workers’ labor mobility and their further employment is beyond our study, but actions in this area may contribute to job or occupation changes without the common transition of older people to low-skilled occupations (Sonina, Kolosnitsyna, 2015).

This research has some limitations. In particular, the panel does not adequately represent the population by sex. In order to exploit the potential of panel data, it is crucial to assess the biases due to attrition by two methods: the Heckman correction for attrition and inverse probability weights. In this research, we did not use the methods of adjustment for the attrition, but it will be the next step.

In order to analyze changes in career positions within the same organization, it is possible to estimate changes in discounted[13] earnings. The number of factors of the labor mobility in pre-retirement and retirement age may be expanded by including household characteristics (composition and income per capita) because the older workers' decision on labor mobility depends not only on individual preferences but also on family circumstances.

[13] Considering inflation rate.

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Appendix

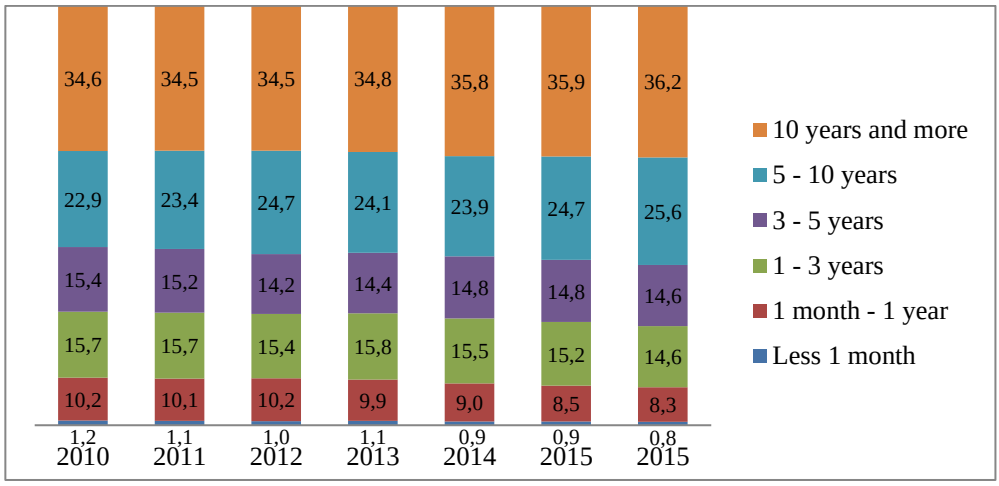

Fig. A1. Structure of the employed population by the length of specific tenure, %

Source: Rosstat, 2010-2016

Tab. A1. Descriptive statistics of variables

Indicator	Share	
	t_0	$t_{1.3}$
Average age, years	56.1	59.1
Average length of specific tenure, years	14.5	15.7
Pensioners in t_0, %	68.7	
Changing/getting a job (occupation) at least once in three years t_1, %	21.7	
Employment in t_2, %	84.6	
Wave		
1 (2010-2014), the number of observations	651	
2 (2011-2015), the number of observations	694	
3 (2011-2015), the number of observations	724	
Socio-demographic characteristics		
Gender		
Men, %	28.9	
Women, %	71.1	
Total	100	
Type of settlement		
Regional centre, %	37.3	
City / town, %	32.8	
Urban type settlements, %	6.3	
Settlement, %	23.6	
Total	100	
Education		
Lower secondary	6.4	4.9
Secondary	59.7	61.0
Undergraduate	33.8	34.1
Total	100	100
Self-evaluation of health		
Poor and very poor	15.2	15.7
Average	76.2	74.4
Good and very good	8.6	10.0
Total	100	100
Disability		
Persons with disabilities, %	5.1	6.5
Marital status		
Do not have a partner	33.6	37.3
Have a partner	66.4	62.7
Total	100	100
Eligibility for early retirement		
Does not have an eligibility	81.2	81.7
Have an eligibility	18.8	18.3
Total	100	100

Tab. A1 (continued)

Job characteristics		
Formal employment, %	91.8	90.4
Full-time job (more 35 hours a week), %	88.9	86.9
Sector of the economy		
Industry	18.8	18.0
Social sector	37.7	39.1
Army, civil service	7.4	7.3
Construction	4.6	4.1
Transportation, communication	6.7	6.2
Agriculture	4.2	3.5
Commerce	11.4	12.0
Housing and communal services	6.4	5.8
Other	2.8	4.0
Total	100	100
Length of specific tenure		
Less than one year	7.0	6.7
1-2 years	11.2	9.4
3-5 years	14.8	12.9
6-10 years	17.5	17.7
11-20 years	19.5	21.7
More than 20 years	30.0	31.6
Total	100	100
Type of enterprise ownership		
State ownership	55.5	55.9
Private ownership	29.6	29.8
Mixed ownership; no answer; the question was not asked	14.9	14.4
Total	100	100
The size of enterprise		
Micro-, small enterprise (< 100 workers)	43.3	45.3
Medium, large enterprise (>100 workers)	27.2	22.6
No answer; the question was not asked	29.6	32
Total	100	100
Job satisfaction and the erosion of workers' rights		
Satisfaction with working conditions		
Completely satisfied	14.4	16.0
Rather satisfied	50.5	54.6
Yes and no	19.7	17.9
Dissatisfied	15.4	11.5
Total	100	100
Satisfaction with earnings		
Completely satisfied	5.5	8.1
Rather satisfied	26.1	31.9
Yes and no	18.8	20.3
Rather dissatisfied	31.4	27.3
Completely dissatisfied	18.1	12.3
Total	5.5	8.1

Tab. A1 (continued)

Satisfaction with job opportunities		
Completely satisfied	10.0	11.6
Rather satisfied	35.9	41.1
Yes and no	27.5	27.5
Rather dissatisfied	16.9	12.8
Completely dissatisfied	9.7	7.0
Total	100	100
Economic factors		
The ratio of pensioner's earnings to regional minimal wage (RMW)		
Less than 2 RMW	6.7	7.2
2-3 RMW	29.8	26.4
3-5 RMW	25.1	27.5
More than 5 RMW	8.8	9.2
Total	100	100

Tab. A2. Logistic regression of job change, by gender

Variable	Marginal effect[1]		Variable	Marginal effect	
	Men	Women		Men	Women
Age	-0.009*	-0,006*	**Length of specific tenure (<1 year - ref.)**		
Type of settlement (city/town-ref.)			1-2 years	-0.211*	-0.392***
Regional centre	0.122*	0.019	3-5 years	-0.454***	-0.348***
Urban type settlements	0.202*	0.043	6-10 years	-0.412***	-0.374***
Settlement	0.08	-0.024	11-20 years	-0.473***	-0.437***
Education (secondary - ref.)			> 20 years	-0.492***	-0.456***
Lower secondary	-0.115*	0.066	**Satisfaction with working conditions (dissatisfied - ref.)**		
Undergraduate	-0.036	0.042	Completely satisfied	-0.154*	-0.101*
Health (average - ref.)			Rather satisfied	-0.144*	-0.052
Good and very good	-0.032	-0.047	Yes and no	-0.099	0.001
Poor and very poor	-0.032	-0.049	**Satisfaction with earnings (completely dissatisfied - ref.)**		
Disability (no - ref.)			Completely satisfied	0.236*	0.022
Disability	0.047	0.114	Rather satisfied	-0.034	-0.057
Eligibility for early retirement (no - ref.)			Yes and no	-0.004	-0.084*
Eligibility for early retirement	0.014	0.015	Rather dissatisfied	0.024	-0.047
Marital status (do not have a partner - ref.)			**Satisfaction with job opportunities (completely dissatisfied - ref.)**		
Have a partner	0.063	0.003	Completely satisfied	0.027	-0.073
Sector of the economy (social sector - ref.)			Rather satisfied	0.020	-0.057
Manufacturing	0.062	0.020	Yes and no	-0.018	0.010
Army, civil service	0.078	0.042	Rather dissatisfied	0.006	-0.003

Tab. A2 (continued)

Construction	0.211*	-0.032	**Enterprise size (micro-, small (< 100 workers) - ref.)**		
Transportation, communacation	0.213*	0.084	Medium, large (>100 workers)	-0.04	-0.021
Agriculture	-0.120	0.147	No answer; question wasn't asked	-0.016	-0.010
Commerce	0.072	0.036	**Enterprise ownership (state - ref.)**		
Housing and communal services	0.04	0.005	Private	0.086*	0.102*
Other	-0.133*	-0.025	Mixed; no answer; question wasn't asked	-0.011	0.011
Formal employment (formal - ref.)			**The ratio of pensioner's earnings to regional minimal wage (> 5 RMW - ref.)**		
Informal employment	-0.042	0.040	< 2 RMW[2]	-0.008	0.026
Length of a working-week (part-time job - ref.)			2 - 3 RMW	-0.028	0.013
Full-time job	-0.032	-0.001	3 - 5 RMW	0.046	0.006
			Number of observation	598	1471
			Pseudo R2	0.24	0.15

Significance: ***p≤0.001, **p≤0.01, *p≤0.1
[1]Marginal effect is a measure of the effect that a change in a explanatory variable has on the predicted probability, if other conditions are kept fixed
[2]Regional minimal wage

Tab. A3. Logistic regression of pensioners' employment, by gender

Variable	Marginal effect[1]		Variable	Marginal effect	
	Men	Women		Men	Women
Changing job (occupation) (no - ref.)			**Length of a working-week (part-time job - ref.)**		
Changing job (occupation)	0.099*	0.009	Full-time job	-0.020	0.057*
Age	-0.007*	-0.006***	**Length of specific tenure (<1 year - ref.)**		
Type of settlement (city/town-ref.)			1-2 years	0.023	0.055
Regional centre	-0.013	-0.021	3-5 years	0.071	0.064
Urban type settlements	-0.113	0.034	6-10 years	0.160*	0.040
Settlement	0.011	-0.030	11-20 years	0.139*	0.071
Education (secondary - ref.)			> 20 years	0.222*	0.086
Lower secondary	0.070	-0.074	**Satisfaction with working conditions (dissatisfied - ref.)**		
Undergraduate	0.013	0.006	Completely satisfied	0.084	0.058
Health (average - ref.)			Rather satisfied	0.056	0.090*
Good and very good	0.059	0.012	Yes and no	-0.008	0.085*
Poor and very poor	-0.213**	-0.052	**Satisfaction with earnings (completely dissatisfied - ref.)**		
Disability (no - ref.)			Completely satisfied	0.015	-0.020
Disability	-0.038	-01.034	Rather satisfied	-0.040	-0.035
Eligbility for early retirement (no - ref.)			Yes and no	0.024	-0.048
Eligbility for early retirement	-0.020	0.036	Rather dissatisfied	0.060	-0.016

Tab. A3 (continued)

Marital status (don't have a partner - ref.)			**Satisfaction with job opportunities (completely dissatisfied - ref.)**		
Have a partner	0.027	-0.014	Completely satisfied	-0.071	0.029
Sector of economy (social sector - ref.)			Rather satisfied	0.032	-0.049
Manufacturing	-0.054	-0.013	Yes and no	-0.075	-0.025
Army, civil service	0.084	-0.095*	Rather dissatisfied	0.037	0.005
Construction	-0.111	-0.177*	**Enterprise size (micro-, small (< 100 workers) - ref.)**		
Transportation, communacation	0.030	-0.164**	Medium, large (>100 workers)	0.028	0.037
Agriculture	-0.062	-0.150*	No answer; question wasn't asked	-0.003	-0.007
Commerce	-0.075	-0.037	**Enterprise ownership (state - ref.)**		
Housing and communal services	0.044	-0.032	Private	0.045	0.009
Other	0.139**	-0.065	Mixed; no answer; question wasn't asked	0.090*	-0.020
Formal employment (formal - ref.)			**The ratio of pensioner's earnings to regional minimal wage (> 5 RMW - ref.)**		
Informal employment	-0.045	-0.055	< 2 RMW[2]	-0.070	-0.099**
			2 - 3 RMW	-0.083*	-0.082**
			3 - 5 RMW	-0.027	-0.025
			Number of observation	598	1471
			Pseudo R2	0.14	0.13

Significance: ***p≤0.001, **p≤0.01, *p≤0.1

[1]Marginal effect is a measure of the effect that a change in a explanatory variable has on the predicted probability, if other conditions are kept fixed

[2]Regional minimal wage

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