

## Influence of Health Status on Social Activity of Older Population\*



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**Abstract.** The economy suffers losses not only because of premature death but also due to poor health. It may lead to complete, or partial, loss of working capacity and the decrease of social activity. These problems affect all population groups, but it is the most common among older citizens. This situation requires the implementation of measures to maintain health and stimulate the efficient usage of older people's labor potential. In this regard, the purpose of this article was to analyze the impact of health status on social activities of older population. The information base of the study included data of monitoring concerning the quality of labor potential among population of the Vologda Oblast for 2018. Methodological aspects of the study are based on the concept of population's qualitative characteristics and the index approach, which was used to assess the status of health and social activity. It is shown that people who belong to older age group, in comparison with other groups, have low values of the need index

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concerning the achievement and social activity. In all selected age groups, lowest values of social activity were observed in cases when two conditions were simultaneously met: they were lower than median values of the physical health index and, for example, cognitive and creative potentials. It is revealed that social activity is higher in cases when indices of cognitive and creative potentials exceed the median level, but the physical health index, on the contrary, does not reach it. It indirectly characterizes the important role of cognitive and creative aspects in ensuring high social activity. The study determined that population of older age group has a competitive advantage which concerns a sufficiently high level of cognitive and intellectual potentials that partially compensate for low physical and mental health. It is shown that, in comparison with other studied age groups, the “loss” is insignificant in material terms, and the “loss” in labor productivity was not recorded at all.

**Key words:** older population, health, social activity, need to achieve.

### Relevance of the research

According to the World Health Organization, a number of the world’s population, aged 60 years old and above, is projected to grow to 2.03 billion people by 2050<sup>1</sup>. Its increase leads to the need to pay closer attention to problems like a low level of inclusion in public life, a low level of financial security, and the deterioration of health conditions<sup>2</sup>. In the last group of problems, there is the increase of the share of older population with various types of disorders, such as somatic, functional, psychological, or cognitive disorders [1].

Despite these problems, older population has a significant resource: a high educational and qualification level, as well as professional and life experience. To efficiently use the potential, it is necessary to create conditions for increasing the demand for older people in society and the economy, at the same time promoting their active longevity [2, p. 5].

In 1982, the UN General Assembly developed a policy concerning older people aimed at creating opportunities for their self-realization by involving them in various spheres

of public life [3, p.49]. Similar provisions can be found in various programs, such as “Society for all ages”<sup>3</sup> or “Active ageing”<sup>4</sup>. Key provisions of these programs are related to improving the quality of life of older population and increasing their social activity [4; 5]. It involves measures to maintain health, to promote the participation of older people in public and cultural life, and to empower them (Madrid International Plan of Action on Ageing, 2002<sup>5</sup>).

Similar provisions could be found in Russian institutional environment. For example, “Strategy of Actions for the Benefit of Senior Citizens in the Russian Federation up to 2025”. Its implementation plan for 2016–2020 included paragraphs on active involvement of older people in public life.

A possibility of the implementation of such measures is indicated, for example, by available sociological data of the “Obshhestvennoe mnenie” fund. In accordance with it,

<sup>1</sup> *Report on Ageing and Health*. Geneva: World Health Organization, 2015. 260 p.

<sup>2</sup> *Global Age Watch Index 2015 Insight report*. London: HelpAge International, 2015. 25 p.

<sup>3</sup> *Building a Society for All Ages: Official Report*. Presented to Parliament by the Secretary of State for Work and Pensions. July 2009. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/238574/7655.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/238574/7655.pdf)

<sup>4</sup> *Active ageing*. Geneva: World Health Organization, 2002. 57 p.

<sup>5</sup> *Madrid International Plan of Action on Ageing*. Adopted by Second World Assembly on Ageing. Madrid, April 8–12, 2002.

almost every third person above 50 years old participates in volunteer practices<sup>6</sup> – a form of social activity [6, p. 50]. At the same time, according to Institute of Sociology of RAS, approximately 12–13% of Russians are socially excluded [7]. Within demographic ageing, more and more older people are exposed to such risks – up to one fourth part of population, according to official statistical data.

Certain consequences of social isolation, according to British researchers (A. Steptoel, A. Shankar), include lonely old age, increased risk of death (26% more often than people who continue to lead an active life) [8]. Similar conclusions are presented in earlier works (for example, [9, 10, 11]), which include arguments for a statistically significant connection of social activity with morbidity and mortality. In turn, the increase of the level of social activity and the improvement of the quality of social relations between individuals and population groups may lead to the increase of the positive effect of programs to improve public health [11].

Aforementioned aspects actualize the need to investigate the way a health status of population (in older ages too) affects social activity.

### Overview of studies on the topic

Members of different theoretical areas define social activity differently depending on goals and objectives of a particular science [12], which also determines the variety of approaches to the study of this phenomenon. From a sociological point of view, social activity is characterized by “self-activity, which manifests itself in various spheres of life” (economic, including labor, cultural, etc. [13]).

<sup>6</sup> Report on the project of the “Obshhestvennoe mnenie” fund “Resource of the vanguard groups voluntary movement for Russian modernization”. Available at: [http://soc.fom.ru/uploads/files/dobrovolchestvo/Otchet\\_dobrovolchestvo.pdf](http://soc.fom.ru/uploads/files/dobrovolchestvo/Otchet_dobrovolchestvo.pdf) (accessed: January 20, 2020).

An individual, a social group, and a society can act as a subject of actions; group and general social effects can act as the results<sup>7</sup>. From a standpoint of the psychological approach, the emphasis is placed on “individual or group actions that contribute to changing a “social self”, a place of a person in a society” [14; 15]. Another approach presented in the scientific literature – activity – involves considering “a set of forms of activity that allow solving problems a society faces, a social group in a given historical period”<sup>8</sup>. It is emphasized that social activity leads to changes of external environment and social characteristics of an individual. It often refers to the potential of an entity, the degree of the formation and implementation of certain socially significant qualities.

In addition to these, the approach, associated with all manifestations of activity that determine a person’s involvement in social relations, regardless of the degree of their awareness and orientation, has become widespread. In another one, on the contrary, the emphasis is placed on conscious attitude of an individual to surrounding social reality, which is associated with its activities [16]. In the latter case, along with everything aforementioned, it is about aspects like self-movement, self-regulation, and self-development [17]. Among the examples of phrasings within the first approach, there are ones in which social activity is defined as “any operation” (Yu.I. Bykov, V.N. Vyuzhanin, G.S. Grigoriev), within the second one – as “a special form of activity” (G.S. Arefeva,

<sup>7</sup> Kravchenko S.A. *Sociologicheskij enciklopedicheskij russko-angliiskiy slovar*. Moscow: Astrel; AST; Tranzitkniga, 2004. 501 p.

<sup>8</sup> *Sociologicheskij enciklopedicheskij slovar: na rus., angl., nem., franc. i chesh. yazykah*. Ed. by RAS acad. G.V. Osipov. Moscow: NORMA, 1998. P. 10.

V.D. Shapiro) [18]. We adhere to provisions of the second approach, because we consider it inappropriate to identify social activity with an operation. Accordingly, we share the position of those researchers who characterize social activity in the same way. For example, as the highest form of human activity, as an ability to act consciously [19] – not just to adapt to surrounding reality but change it themselves<sup>9</sup>.

Taking into account everything mentioned, we would like to emphasize characteristics that, one way or another, appear in various definitions of a social activity. It includes *self-determination*, expressed as a conscious, internal motivation for such activity; *inclusion in social interaction*, which is shown by the awareness of the interconnection with a society and in the construction of ways to interact with it; *prosociality*, which involves the transformation of a society and an individual [20].

Together with the social activity concept, it is possible to speak about its types, which, in turn, may expand the content of the latter. Criteria for its identification include the duration, coverage scope, source of the initiative, sphere of implementation, and subject [21; 22]. General and search activity (within a psychological approach)<sup>10</sup> becomes widespread: the former is related to a person's temperament, and it implies his/her natural activity/passivity; the latter is related to the focus on changing the existing situation and attitude toward it – at the same time, there is not always a prediction for the results of such activity<sup>11</sup>. Types of social activity are also

determined according to stages of socialization: the primary one assumes “tightening of various levels of social and cognitive development” [23; 24], and, within the secondary one, maintenance of health and other parameters among older population [25]. The relevance of reviewing social activity in such context is explained by the preservation of controversial issues. It concerns, for example, the lack of unambiguous results regarding the evidence of a direct connection between cognitive aspects and social activities at the stage of secondary socialization [26].

Social activity is also distinguished by such criteria as the sphere of implementation, paying attention to volunteer, creative [26; 27; 28], socio-political activity (involvement in various organizations – a party, a trade union, councils) [29], etc. In this series, one of the most important types is social activity of population in the labor market, related to employment, primary and additional employment of enterprises' employees, the growth of their skills, etc. Through this activity, prerequisites for reducing unemployment, social differences, poverty, improving the level and quality of life of different population groups, and creating a fairer, in social terms, society are created [30]. Labor activity is considered from the point of view of implementing the labor potential. It depends not only on the accumulated stock of knowledge, skills, and abilities but also on conditions, created for its implementation during labor activity, to improve the efficiency of workers [31].

The evolutionary approach to the issue of labor activity allows us to distinguish several stages: there is an interest in this issue and the attention is drawn to various accentuations of labor activity. In particular, in the 20–30s of the XX century, the attention of researchers was focused on the study of macro-level factors

<sup>9</sup> *Enciklopedicheskiy slovar*. Saint-Petersburg: Brokgauz-Efron, 1890. P. 7.

<sup>10</sup> Shhukina G.I. *Aktivizatsiya poznavatel'noi deyatel'nosti v uchebnom processe: ucheb. posobie dlja stud. ped. institutov*. Moscow: Prosveshhenie, 1979. P. 34.

<sup>11</sup> Bashaev N.N. *Rol fizicheskogo vospitaniya v formirovaniy social'noi aktivnosti studentov: diss. ... cand. ped. sci.* Leningrad, 1979.

that affect labor activity of workers; in the 1960s–1980s, on the contrary, real problems of labor activity in the field of labor relations and issues of motivation for such activity were studied; in the 1990s, emphasis was put on the study of labor activity and motivation by privatized enterprises, entrepreneurship. Since the 2000s, new areas, related to the study of social activity in the labor market, have been actively formed, including economic sociology, market sociology, and labor market sociology [30, p. 11–13].

Studies on this topic address issues of labor activity among various population groups: for example, young people and older population. The place and role of the latter in the Russian society, the influence of its socio-demographic features on participation in labor and public activity, concepts of an individual's social behavior at an older age is analyzed in the works [32, 33], etc.; factors of older population's social well-being, problems of activation of their behavior are reviewed by A.V. Dmitriev, N.G. Kovaleva [34; 35], etc.

In the scientific literature, issues related to the increase of the frequency of diseases among older people, the decrease of their professional and social status that may lead to depressive states [36], which negatively affect the ability to work and social activity in general, remain relevant. The increase of health problems, associated with the emergence and development of a number of functional limitations, in addition to aforementioned ones, leads to the situation that certain population groups may lose mobility, their quality of life may reduce [37; 38], as well as satisfaction with it [39], social well-being and social activity may negatively change [40].

The deterioration of health among older people may negatively affect work and social

activity. Nevertheless, they retain intellectual potential, competence, and efficiency, which, on the contrary, have a positive impact [41]. Within the organization of continuous learning throughout life, this group of people has more opportunities to adapt to changes and participate in social development. In turn, the implementation of labor activity allows older population to financially support themselves, to increase the sense of security and satisfaction with the results of their work [42].

Despite the existence of research in this area, the analysis of scientific sources allows us to conclude that there is insufficient work concerning issues of social well-being among older people, consideration of them not as objects of social protection but as subjects of social activity, and study of methods of increasing such activity [43]. It is also about the lack of a clear understanding of how this activity changes among older people, what forms it takes [44, p. 264]. Taking into account everything aforementioned, the study will focus on the analysis of aspects related to the health status, cognitive potential, and other qualitative characteristics of older population and its impact on social activity.

#### **Purpose, objectives, characteristics of the study's information basis**

*The purpose* is to analyze the impact of the health status of older population on social activity.

#### *Objectives:*

- study of self-assessment of health status and occurrence frequency of ailments of various severity within selected socio-demographic population groups;
- study of the influence of population's health status on integral indices of social activity and qualitative characteristics of population;

– study of the influence of individual components of the integral index of population's qualitative characteristics (including physical and mental health) on social activity within age groups;

– study of the impact of health status on individual characteristics of the usage of accumulated potential (including productivity and remuneration) and reasons for concerns over job losses in age groups with different self-assessment of health.

*The information basis* includes data of the next stage of monitoring of quality of labor potential in the Vologda Oblast, conducted by FSBIS VoIRC RAS in 2018. The sample is quota-based with proportional placement of observation units; its volume is 1500 able-bodied people (16–59 year old men; 16–54 year old women) in Vologda, Cherepovets, and eight districts of the Oblast. The representativeness of the sample is provided by the maintenance of proportions between urban and rural population, between residents of various types of localities (rural settlements, small- and medium-sized cities), the gender and age structure of adult population of the Oblast, and proportions between employed, unemployed (registered at the labor exchange) and economically inactive population (students, housewives, and other unemployed). The value of random sampling error is 3–4% with a confidence interval of 4–5%. The survey method is a questionnaire in a respondent's place of residence. Questionnaires were processed in the SPSS program (Statistical Package for the Social Sciences).

#### **Methodological aspects of the research**

Drawing attention to methodological aspects of the study, which were a basis for the solution of set objectives, we highlight two aspects that are relevant for the assessment of *health* and *social activity*, respectively.

In the first case, we would like to note that, *in order to assess the state of health*, we used separate *indicators of self-assessment of health and frequency of diseases of various severity (a questionnaire did not include questions about any specific diseases)*, as well as *integral indices of physical and mental health*. The latter indices are used by researchers of FSBIS VoIRC RAS as a part of an integrated methodology for assessing qualitative characteristics of population.

Drawing attention to the issue of the usage of individual indicators for assessing health status in the scientific literature, we would like to note that it is currently debatable and requires justification (Currie, Madrian, 1999). For example, there are arguments in support and against self-assessment of health status. *Among the latter, there are arguments about the absence of 100% correlations with real state of health due to measurement errors*. People forced to work less tend to make more critical assessments of their health; individuals with higher income levels, who have access to regular healthcare services with high disease detection, are also likely to have more critical assessments. In addition, self-assessments of health status may be influenced by gender. These aspects should be taken into account while using this indicator: in particular while interpreting the obtained results. *Among the first ones, there are arguments to support the fact that self-assessment correlates with the state of health according to medical indicators* [45] and, in some cases (for example, while finding the probability of a fatal outcome), it is a “reliable” indicator together with objective indicators. Among domestic researchers, a similar position is shared by, for example, academician of the Russian Academy of Sciences, doctor of sociological and medical sciences A.V. Reshetnikov [46]. He notes that respondents' assessment of their health is close to objective, and, in 70–80% of cases,

it corresponds to data of medical records. We would like to note that, depending on objectives of the study, various indicators may be used (for example, the presence of chronic and other diseases, the presence of any work limitations due to health, etc.). However, parameters associated with self-assessment of health and morbidity are the most common. They will be used in our study.

As noted above, the study also used integral indices of physical and mental health, which are used by employees of FSBIS VolRC RAS to analyze the quality of population's labor potential. The analysis of the latter is based on the concept of population's qualitative characteristics with a multi-level system of components of labor potential. The lower (first) level characterizes a person taking into account his natural basis (physical health, mental health, knowledge, and creativity) and involvement in social relations (sociability, morality, social claims, culture). At the intermediate (second) level, characteristics are generalized to four groups of basic qualities: psychophysiological, intellectual, and communicative characteristics and social activity. At the third level, characteristics are generalized to two components (energy and socio-psychological potentials). The integral quality of labor potential – social capacity – is a combination of properties that determine the effectiveness of labor activity in specific social conditions [47, p. 730].

Taking into account provisions of this concept, as well as the purpose and objectives of the study, special attention was given to

indices<sup>12</sup> of physical and mental health of population. The first index was calculated as the arithmetic mean of three particular indices that characterize the severity and frequency of morbidity; the impact of health on the performance of life functions; respondents' self-assessment of their health. The second index, which characterizes the ability of the psyche to perceive external stressors without deformations, was calculated using the Likert scale consisting of statements with rating scales of assessment depending on the degree of agreement of a test subject with proposed responses [48, p. 23–24].

Within the second aspect of the study, related to *the assessment of social activity, the index method was also used. The index of social activity was calculated as the geometric mean of indices of morality and the need for achievements.* The general index of morality was evaluated using two scales as the arithmetic mean of indices of moral feeling and moral values, the former of which characterized the attitude toward the violation of generally recognized norms, and the latter characterized the system of moral values of an individual. In turn, the need for achievements was analyzed by evaluating respondents' life plans related to improving their social status [48, p. 25–26].

In addition to social activity as such, the study drew attention to labor activity being a type of social activity. Among the parameters, which were taken into account while conducting the analysis, there were employees' scores of average labor productivity within groups selected according to age and health

<sup>12</sup> In addition to two indicated indices (physical and mental health), the work used indices of population's cognitive and creative potentials. Cognitive potential (erudition) is the sum of knowledge about the surrounding world measured using two scales. One of them characterizes a respondent's activity aimed at constant update of knowledge about all social spheres surrounding him / her. The second scale complements the first one and characterizes the attitude of a society to knowledge. It represents ten judgments about knowledge, a half of which is positive, and the second half is negative. The cognitive potential index is calculated as the arithmetic mean of indices for each of two scales. The assessment of creative potential is also carried out using two scales, one of which characterizes a respondent from a point of view of creative activity – in the professional sphere and everyday life, and the other – a respondent's attitude to creativity. The overall creative potential index is calculated as the arithmetic mean of indices according to these two scales.

status; average monthly wages over the past 12 months; the presence/absence of concerns over job loss, as well as reasons of such concerns. In addition, we took into account parameters related to certain qualitative characteristics of population, which collectively characterize the accumulated potential and may have an impact on labor activity.

### Results of the analysis

The first stage of analyzing the impact of health status on social activity was the study of self-assessment of health status, within socio-demographic groups of population too. Due to the small number of extreme groups that differ in health status, it was decided to expand them, to take into account total population with “excellent”, “good”, “bad”, and “very bad” health. For a similar reason, extreme groups according to education, income level, and other indicators were also reviewed in total.

Coming back to the results of self-assessment of health status within selected socio-demographic groups, we would like to note that men tend to characterize their health as excellent and good more often, and, on the contrary, they rarely give satisfactory ratings in comparison with women. In the population group with people aged above 50 year old, more than 60% of respondents satisfactorily assessed their health, while slightly more than 20% of respondents assessed their health as excellent and good. The situation was different in the polar group – 70% of respondents said that they had excellent and good health, while almost every fourth person called it “satisfactory” (*Tab. 1*).

Self-assessment of health status differs in other ways too. For example, according to the educational level. In almost 50% of cases, those who have incomplete secondary and secondary education have a satisfactory state of health, and good and excellent health in 40% of cases. The opposite situation is observed among

population with higher and incomplete higher education.

In terms of marital status, there is also a difference. Divorced people and widows (widowers) are those who very rarely assess their health highly. At the same time, unmarried (single) people and those who are not in a registered marriage, in more than 50% of cases, assess their health as excellent and good.

In polar groups according to purchasing power of income, there are also differences in health status. It is not a surprise that, among those who are used to not denying themselves anything, excellent and good assessments happen in more than 60% of cases, while satisfactory ones occur in every third case. If we look at the population group focused mainly on the purchase of food, then only one person out of three has excellent and good health.

Depending on the nature of employment – among non-workers, who get by with odd jobs, and those who have only a main job, in almost half of cases, they have excellent and good health ratings. In other groups, identified by this indicator, such estimates are less common.

Health status may be indirectly indicated by the frequency of diseases, which was analyzed within age groups. Among working respondents, whose age exceeds 50 years, in comparison with young people, minor ailments are more common (38% vs. 19%), as well as diseases that lead to the loss of the ability to work (*Tab. 2*).

One of research tasks was to analyze the impact of health status on integral indicators that characterize social activity and population’s qualitative characteristics<sup>13</sup>. Obtained results show, first of all, that the lowest values of these integral indices were among older respondents (0.650 and 0.563 units, respectively), while the opposite situation

<sup>13</sup> We would like to note that the quality of accumulated potential was studied using the integral indicator “need for achievements”.

Table 1. Self-assessment of health status of working respondents depending on different characteristics in the Vologda Oblast, % from the number of respondents

Socio-demographic groups of working respondents		Evaluate, in general, your health status		
		Excellent: good	Satisfactory	Bad; very bad
Category's size, people		556	534	68
Gender	Male	50.2	43.7	6.1
	Female	45.4	49.0	5.6
Age	under 29	70.8	27.5	1.7
	30–49	49.1	46.6	4.3
	50 and older	22.3	63.2	14.5
Education	Incomplete secondary; secondary school, including vocational schools with secondary education	40.0	51.4	8.7
	Specialized secondary education (technical college, etc.)	48.9	45.6	5.5
	Incomplete higher education (at least 3 university courses); higher	56.6	40.4	3.0
Marital status	I am in a registered marriage and live together with my husband (wife)	46.5	48.5	5.1
	I am not in a registered marriage but I live together with my husband (wife)	54.8	41.3	3.8
	I am not in a registered marriage and do not live together with my husband (wife). (divorced); I am in a registered marriage and do not live with my husband (wife)	38.2	48.8	13.0
	Not married (single)	58.8	37.4	3.7
	Widow (widower)	35.3	50.0	14.7
Income purchasing power*	Enough money to not deny anything; purchase of most durable goods (refrigerator, TV) does not cause difficulties. However, purchase of a car is not currently possible	65.1	30.2	4.8
	Enough money to purchase necessary products and clothes. However larger purchases have to be postponed	52.5	43.5	4.0
	Enough money to buy only food; not enough money to buy even food, we have to get into debts	33.2	56.7	10.0
Social self-identification**	Rich; middle-class people	57.7	39.2	3.1
	Poor; indigent	39.7	51.7	8.6
Employment	I only work at my main job	49.4	45.4	5.2
	I have a main and additional job	43.2	49.6	7.2
	I combine my main job with odd jobs	40.9	50.0	9.1
	I do not have a main job. I get by with odd jobs	48.1	44.3	7.6
	I do not work (including parental leave, etc.)	49.4	45.4	5.2

\* Phrasing of a question: "Which following assessments most accurately describe your cash income?"  
\*\* Phrasing of a question: "What category do you belong to?"  
Source: data from monitoring of the quality of labor potential among the Vologda Oblast's population, FSBIS VoIRC RAS, 2018.

Table 2. Frequency of diseases of various severity among working population of the Vologda Oblast, % from the number of respondents

Age group	Frequency of diseases			
	very often	quite often	once a year or less	never
Ailments that reduce the ability to work normally but do not require a sick leave				
under 29	3.8	19.2	45.4	31.7
30–50	6.8	27.1	41.4	24.7
50 and older	10.7	38.4	33.5	17.4
Diseases that lead to the loss of the ability to work in production and to study but do not deprive of the opportunity to engage in self-service, do household chores, cook food				
under 29	1.7	5.4	38.3	54.6
30–50	2.4	12.0	36.7	49.0
50 and older	3.3	16.5	44.2	36.0

Source: data of monitoring of the quality of labor potential of the Vologda Oblast's population, FSBIS VoIRC RAS, 2018.

Table 3. Average values of indices of social activity and need for achievements among working population with different self-assessment of health status in the Vologda Oblast

Working population	Average value of social activity index, un.			Average value of the need for achievements index, un.		
	under 29	30–50	50 and older	under 29	30–49	50 and older
Average among working population	0.723	0.703	0.650	0.688	0.653	0.563
Assess, in general, your health status						
Excellent; good	0.741	0.738	0.681	0.701	0.692	0.603
Satisfactory	0.676	0.673	0.648	0.650	0.620	0.562
Bad; very bad	0.710	0.607	0.609	0.724	0.559	0.503
Note: social activity index is a part of the need for achievements index.						
Source: data of monitoring of the quality of labor potential of the Vologda Oblast's population, FSBIS VolRC RAS, 2018.						

was observed among employed young people (0.723 and 0.688 units; *tab. 3*).

If, in addition to aforementioned, we take into account the state of health<sup>14</sup>, it turns out that older workers with poor and very poor health have lower indices of social activity and need for achievements than average indices' numbers in this age group (0.609 units vs. 0.650 and 0.503 units vs. 0.563, respectively). In two remaining age groups, indices' values do not differ much not only among their representatives with excellent and good health but also with satisfactory health. However, in case of polar age groups with poor and very poor health, there was the greatest difference in indices' values.

It should be noted that impact of the population's health status on social activity, need for achievements and, for example, on cognitive and creative potentials is studied in the paper.

The table below shows average values of social activity index in each age group for different combinations of physical health index values (high and low), taking into account mental health, cognitive and creative potentials. It was revealed that the smallest difference in values of social activity index, taking into account physical and mental health, cognitive

and creative potentials is achieved in the older age group. Such results, for example, were obtained while comparing average values of social activity in population groups with mental health lower and higher than a median one (differences in social activity in these groups reach 0.002 units among older population vs. 0.016 units among young people). The situation was similar according to creative potential too: in the older age group, the difference between average values of social activity in groups with creative potential higher and lower than a median one reached 0.064 units, while it was slightly higher – 0.088 units – among young people (*Tab. 4*).

The result was expected when highest values of social activity index were achieved in groups with simultaneous fulfillment of two conditions: it was higher than a medium value of physical health index and other indices (mental health, cognitive and creative potential), which are related to social capacity. In same situations, when the first indicated condition was met, and the second one was not (indicated indices of social capacity were lower than a median one), social activity was lower than in the situation with a simultaneous fulfillment. The lowest values of social activity were reached, if values of the physical health index and other components of social capacity were lower than median ones.

<sup>14</sup> Polar groups are formed according to health status by summing two positions: in the first case – “excellent” and “good”, in the second case – “bad” and “very bad”.

Table 4. Average value of social activity index in each population group in the Vologda region

	Social activity index: average value (un.)											
	under 29			30–50			50 and older			in general for all ages		
	PH* below median	PH above median	ave- rage	PH below median	PH above median	ave- rage	PH below median	PH above median	ave- rage	PH below median	PH above median	ave- rage
Average among workers	0.680	0.743	0.722	0.674	0.735	0.703	0.639	0.683	0.650	0.664	0.732	0.696
Mental health												
below median	0.692	0.737	0.712	0.666	0.713	0.682	0.638	0.687	0.649	0.661	0.714	0.678
above median	0.663	0.745	0.728	0.686	0.747	0.722	0.640	0.680	0.651	0.669	0.741	0.712
Cognitive potential												
below median	0.615	0.688	0.663	0.634	0.702	0.660	0.608	0.612	0.608	0.624	0.689	0.650
above median	0.756	0.800	0.786	0.735	0.760	0.749	0.686	0.730	0.700	0.724	0.768	0.747
Creative potential												
below median	0.613	0.707	0.677	0.638	0.703	0.664	0.620	0.620	0.620	0.630	0.695	0.657
above median	0.738	0.779	0.765	0.719	0.758	0.740	0.663	0.739	0.684	0.706	0.762	0.734
* PH – physical health index.												
Source: data of monitoring of the quality of labor potential of the Vologda Oblast's population, FSBIS VoIRC RAS, 2018.												

Another interesting feature, identified during the analysis, was that, in all selected age groups, values of social activity index were higher when indicators of cognitive and creative potentials exceeded the median level, and indicators of physical health, on the contrary, did not reach it. At the same time, in the opposite situation, values of social activity index were lower. It may indicate the important role of cognitive and creative aspects in achieving a high level of social activity.

The last objective of the study was to analyze the impact of health status on individual characteristics of using accumulated potential (including productivity and labor remuneration). It was revealed that, regardless of the

health status, within studied age groups, the highest values of average labor productivity were observed among older population. Average monthly wages of respondents in the older age group with excellent and good health is comparable to wages of middle-aged population with similar health status (26.9 and 27.0 thousand rubles). Wages of older population with satisfactory health status is proportional to wages of young people with similar health conditions (*Tab. 5*).

The implementation of potential largely depends on its accumulation, on the level of the formation of certain components of social capacity. In this study, we determined that older population with excellent and good health has

Table 5. Indicators of labor activity in groups of respondents with different self-assessment of health status in the Vologda Oblast

	Average in age	Assess, in general, your health status			
		Excellent; good	Satisfactory	Bad; very bad	
Category's size, people.	under 29	241	170	66	4
	30–50	678	332	315	29
	50 and older	243	54	153	35
Average labor productivity, points					
	under 29	8.0	8.3	7.5	7.0
	30–50	8.2	8.5	7.9	6.6
	50 and older	8.1	8.8	8.0	7.7

Continuation of Table 5

	Average in age	Assess, in general, your health status		
		Excellent; good	Satisfactory	Bad; very bad
Average monthly salary for previous 12 months, thousand rubles				
under 29	22.3	23.5	19.6	20.5
30–50	23.5	27.0	20.7	15.2
50 and older	21.1	26.9	19.4	19.4
Physical health, average value, un.				
under 29	0.794	0.850	0.674	0.431
30–50	0.737	0.827	0.664	0.506
50 and older	0.673	0.815	0.665	0.488
Mental health, average value, un.				
under 29	0.849	0.874	0.795	0.763
30–50	0.786	0.825	0.759	0.638
50 and older	0.749	0.765	0.750	0.718
Cognitive potential, average value, un.				
under 29	0.597	0.602	0.582	0.639
30–50	0.606	0.627	0.590	0.540
50 and older	0.595	0.643	0.586	0.566
Creative potential, average value, un.				
under 29	0.568	0.565	0.573	0.628
30–50	0.560	0.579	0.546	0.491
50 and older	0.552	0.566	0.552	0.536
Communication skills, average value, un.				
under 29	0.755	0.763	0.737	0.677
30–50	0.740	0.764	0.720	0.700
50 and older	0.739	0.708	0.754	0.715
Cultural level, average value, un.				
under 29	0.692	0.717	0.627	0.592
30–50	0.691	0.736	0.655	0.587
50 and older	0.663	0.697	0.656	0.642
Moral level, average value, un.				
under 29	0.769	0.792	0.712	0.698
30–50	0.769	0.798	0.747	0.676
50 and older	0.770	0.790	0.766	0.757
Need for achievements, average value, un.				
under 29	0.688	0.701	0.650	0.724
30–50	0.653	0.692	0.620	0.559
50 and older	0.563	0.603	0.562	0.503
Psychophysical potential, average value, un.				
under 29	0.818	0.859	0.728	0.567
30–50	0.757	0.822	0.706	0.565
50 and older	0.703	0.785	0.701	0.588
Intellectual potential, average value, un.				
under 29	0.579	0.580	0.574	0.631
30–50	0.578	0.598	0.564	0.513
50 and older	0.570	0.599	0.565	0.548
Communication potential, average value, un.				
under 29	0.716	0.733	0.674	0.628
30–50	0.709	0.743	0.681	0.636
50 and older	0.693	0.695	0.697	0.669

End of Table 5

	Average in age	Assess, in general, your health status		
		Excellent; good	Satisfactory	Bad; very bad
Social activity, average value, un.				
under 29	0.723	0.741	0.676	0.710
30–50	0.703	0.738	0.673	0.607
50 and older	0.650	0.681	0.648	0.609
Energy potential, average value, un.				
under 29	0.684	0.702	0.642	0.595
30–50	0.658	0.697	0.628	0.534
50 and older	0.629	0.681	0.626	0.563
Socio-psychological potential, average value, un.				
under 29	0.717	0.734	0.672	0.668
30–50	0.704	0.739	0.675	0.619
50 and older	0.669	0.685	0.670	0.636
Capacity, average value, un.				
under 29	0.698	0.716	0.655	0.627
30–50	0.679	0.716	0.649	0.573
50 and older	0.647	0.681	0.646	0.597
Note: integral quality of labor potential – social capacity – at the intermediate (second) level is generalized to four groups of basic qualities: psychophysiological, intellectual and communicative characteristics, social activity, at the third level – to two components (energy and socio-psychological potentials).				
Source: data of monitoring of the quality of labor potential of the Vologda Oblast's population, FSBIS VoIRC RAS, 2018				

the highest values of the index of cognitive and intellectual potentials in comparison with respondents of other age groups with similar health status. At the same time, the lowest values of indices were revealed for such components of social capacity as physical, mental health, and sociability.

While reviewing the older population group, members of which assess their health as satisfactory, it was revealed that the highest values of indices were achieved by cognitive potential, sociability, cultural and moral level, the lowest ones – by physical and mental health and the need for achievements.

The health status affects not only the potential, its implementation, and social activity but also concerns over job loss. In case of excellent and good health, regardless of an age group, such concerns did not appear in seven out of ten cases. However, for example, in the group with poor and very poor health, there were fewer people who experienced a similar condition (*Tab. 6*).

To sum up, based on data of monitoring of the quality of labor potential of the Vologda Oblast's population for 2018, we would like to state that older population, in general, had a satisfactory health status, which was manifested by the prevalence of minor ailments and diseases that lead to inability to work.

While summing up these results, we would like to note the following: the novelty of the research is the usage of the concept of population's qualitative characteristics, which is the basis of the index approach to its analysis – in particular, to the assessment of physical, mental health, and population's social activity. This approach is applicable to the analysis of qualitative characteristics of population and individual groups, such as older people. The usage of such approach allowed revealing that population belonging to the older age group had low values of need for achievements and social activity indices. Poor and very poor health among older population increased the negative effect, which was manifested by lower values

Table 6. Distribution of responds to the question “If you have any concerns over losing your job, what is the main reason of it?” in three age groups among respondents with different self-assessments of health status in the Vologda Oblast, % from the number of respondents

Reason of concerns	Under 29				30–50				50 and older			
	Average at age under 30	Excellent; good	Satisfactory	Bad; very bad	Average at age of 30-50	Excellent; good	Satisfactory	Bad; very bad	Average at age above 50	Excellent; good	Satisfactory	Bad; very bad
Category's size, people	241	170	66	4	678	332	315	29	243	54	153	35
Economic situation in a company where I work is unstable	12.4	11.2	15.2	25.0	10.5	8.4	12.7	10.3	9.9	11.1	11.1	2.9
Trade union plays a constantly decreasing role in regulating labor relations at an enterprise	3.3	4.1	1.5	0.0	3.2	3.3	3.2	3.4	4.9	5.6	5.9	0.0
Expiration of an agreement (contract)	2.9	2.9	3.0	0.0	2.5	2.1	2.9	3.4	2.5	1.9	2.6	2.9
Job is not my specialty	6.6	4.7	9.1	50.0	3.8	2.1	5.4	6.9	6.6	5.6	8.5	0.0
Qualification does not correspond to performed work	6.6	5.9	7.6	25.0	2.9	1.2	3.2	20.7	4.5	5.6	4.6	2.9
My health worsened	3.3	2.9	3.0	25.0	6.2	2.7	6.7	41.4	14.4	7.4	13.7	28.6
Bad relations with management, with a team	3.3	1.8	6.1	25.0	4.3	2.4	5.4	10.3	4.5	5.6	3.9	5.7
I heard that, in the near future, there will be layoffs at enterprises where my family members, or I, work	3.7	4.1	3.0	0.0	4.9	3.0	7.0	3.4	5.8	3.7	5.9	8.6
Other reasons	2.1	2.4	1.5	0.0	1.8	2.1	1.6	0.0	3.3	1.9	2.6	8.6
I have no concerns over losing a job	71.0	74.1	63.6	50.0	73.0	79.8	68.9	41.4	65.8	74.1	64.7	57.1

Source: data of monitoring of the quality of labor potential of the Vologda Oblast's population, FSBIS VolRC RAS, 2018

of social activity and need for achievement indices (as a component of social activity) in comparison with average values in this age group.

It was determined that the lowest values of social activity were reached in cases when two conditions were met simultaneously – physical health index and, for example, indices of cognitive and creative potentials were lower than median values. At the same time, the highest values of social activity were recorded in the opposite case – when studied indices were higher than median values. In intermediate situations, if values of some indices are lower than median ones, and others, on the contrary, are higher, it was revealed that social activity is higher in cases when indicators of cognitive and creative potentials exceeded the median level, and indicators of physical health, on

the contrary, did not reach it. It indirectly characterizes the important role of cognitive and creative aspects in ensuring high social activity and a high level of labor potential [49, p. 62].

The article shows that older population plays an important role in the economic life of society [50, p. 14–15]. For example, older population with excellent and good health has the highest values of indices of cognitive and intellectual potentials in comparison with respondents from other age groups with similar health status. The lowest index values were revealed for physical, mental health, and sociability. If we overview the older population group with a satisfactory state of health, then low values of indices of physical and mental health are natural, while the highest values, on the contrary, were achieved in terms of cognitive

potential, sociability, and moral level. Thus, it may be noted that population of this age group has a fairly high cognitive and intellectual potentials as a competitive advantage. In such conditions, it is expected that average monthly wages of respondents in the older age group with a satisfactory state of health is proportional to wages of young people with a similar state of health. In the same case, when it comes to older respondents with excellent and good health, their wages are proportional to wages of middle-aged population. Therefore, if we speak about a “loss” in financial terms, it is insignificant in comparison with other studied groups. The “loss” in labor productivity was not recorded at all – it was the largest among all groups.

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