EDN HLVVBY BAK 5.2.3

RESEARCH ARTICLE

THE IMPACT OF QUALITATIVE CHARACTERISTICS OF YOUTH'S LABOR POTENTIAL ON WORK PERFORMANCE

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ABSTRACT

Introduction. Due to an aging population and a decreasing share of younger people in the workforce, the quality of the labor potential has become crucial for the country's economic development. The prospects for economic growth and the competitiveness of organizations, industries, and countries largely depend on the development of the professional and personal qualities of young people. The aim of this study is to analyze changes in the quality characteristics of young people's labor potential over recent decades and their relationship with work performance (case study of the Vologda Oblast).

Materials and methods. The information base consists of data from official statistics and monitoring of the labor potential quality of the Vologda Oblast population, which has been carried out since 1997 by the Vologda Research Center of the Russian Academy of Sciences. The annual sample consisted of 1500 people. The study used index-based methods to calculate the quality of youth labor potential and work performance, with correlation and regression analysis identifying the relationship between the qualitative characteristics of labor potential and youth work performance. The calculations have been performed using IBM SPSS Statistics software.

Results and conclusions. The dynamics of the quality of the labor potential among modern youth has been presented, and their competitive advantages have been highlighted. There is an increase in psychophysiological potential, which probably indicates a high level of adaptability of youth to situations of instability. A steady increase in the communicative potential, social activity of young people and their moral level has been revealed. This may indicate their response to relevant demands of the service economy, as well as skills in teamwork, sociability and stress tolerance, which are in demand on the labor market. The high level of these parameters allows young people to achieve high work performance. The weaknesses include a steady decline in the cognitive and creative potential of youth, which can pose risks to the innovative development of the economy and the quality of human capital.

Discussion. Within the framework of educational programs, it is necessary to intensify the formation of cognitive and creative potential (as failing components of quality of labor potential), as well as moral guidelines for young people, which act as key predictors of work performance. The prospects of the research relate to the analysis of external factors that may affect the work performance, such as organizational, motivational ones and working conditions. The study also aims to investigate gender and settlement-based differences in the quality of young people's labor potential.

KEYWORDS

Labor potential, youth, the quality of youth's labor potential, work performance.

FUNDING

The article has been completed without external funding.

FOR CITATION

Soloveva, T. S., Gordievskaya, A. N. (2026) The impact of qualitative characteristics of youth's labor potential on work performance. *Management Issues*, 20 (2), 62–80. https://elibrary.ru/hlvvby.

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AUTHORS' CONTRIBUTION

Soloveva T. S. – conceptualization, design, and implementation of the research, data analysis, drafting of the manuscript, and formulation of conclusions.

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CONFLICT OF INTEREST

The authors declare interest conflict lack.

USE OF AI TOOLS DECLARATION

The authors declare that they have not used Artificial Intelligence (AI) tools to write this article.

The article was submitted 05.02.2026; reviewed 23.04.2026; accepted for publication 11.05.2026.

ИССЛЕДОВАТЕЛЬСКАЯ СТАТЬЯ

ВЛИЯНИЕ КАЧЕСТВЕННЫХ ХАРАКТЕРИСТИК ТРУДОВОГО ПОТЕНЦИАЛА МОЛОДЕЖИ НА РЕЗУЛЬТАТИВНОСТЬ ТРУДА

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АННОТАЦИЯ

Введение. В условиях старения населения и снижения доли молодого поколения в структуре рабочей силы для экономического роста страны становится важным качество трудового потенциала. Цель работы заключается в анализе изменений характеристик качества трудового потенциала молодежи за последние десятилетия и их связи с результативностью труда (на примере Вологодской области).

Материалы и методы. Информационную базу составили данные официальной статистики и мониторинга качества трудового потенциала населения Вологодской области, проводимого с 1997 года Вологодским научным центром РАН. Ежегодная выборка составляла 1500 человек. Исследование проводилось с помощью индексных методов расчета качества трудового потенциала молодежи и результативности труда, корреляционного и регрессионного анализа для выявления связи между качественными характеристиками трудового потенциала и результативностью труда молодежи (в программной среде IBM SPSS Statistics).

Результаты. Представлена динамика качества трудового потенциала современной молодежи, определены ее конкурентные преимущества. Наблюдается рост психофизиологического потенциала, что, возможно, свидетельствует о высоком уровне адаптивности молодого поколения к ситуациям нестабильности. Выявлен устойчивый рост коммуникативного потенциала, социальной активности молодежи и ее нравственного уровня, что свидетельствует о ее реагировании на соответствующие запросы сервисной экономики и востребованные на рынке труда навыки командной работы, коммуникабельности, стрессоустойчивости. Высокий уровень указанных параметров позволяет молодежи достигать высокой результативности труда. Среди слабых сторон выделено устойчивое снижение когнитивного и творче-

ского потенциала молодежи, что может создавать риски для инновационного развития экономики и качества человеческого капитала.

Обсуждение. В рамках образовательных программ необходимо активизировать формирование когнитивного и творческого потенциала (как «западающих» компонентов качества трудового потенциала), а также нравственных ориентиров молодежи, которые выступают ключевым предиктором результативности трудовой деятельности. Перспективы исследования связаны с анализом внешних факторов, которые могут влиять на результативность труда (организационных, мотивационных, условий труда), изучением гендерных и поселенческих различий в качестве трудового потенциала молодежи.

КЛЮЧЕВЫЕ СЛОВА

Трудовой потенциал, молодежь, качество трудового потенциала молодежи, результативность труда.

ФИНАНСИРОВАНИЕ

Статья выполнена без внешнего финансирования.

ДЛЯ ЦИТИРОВАНИЯ

Соловьева Т. С., Гордиевская А. Н. Влияние качественных характеристик трудового потенциала молодежи на результативность труда // Вопросы управления. 2026. Т. 20, № 2. С. 62–80. EDN HLVVBY.

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ВКЛАД АВТОРОВ

Соловьева Т. С. – концептуализация и дизайн исследования, анализ данных, написание текста рукописи, формулировка выводов.

Гордиевская А. Н. – сбор и обработка данных, редактирование текста.

КОНФЛИКТ ИНТЕРЕСОВ

Авторы заявляют об отсутствии конфликта интересов.

ИСПОЛЬЗОВАНИЕ СРЕДСТВ ИИ

Авторы заявляют о том, что при написании данной статьи не применялись средства генеративного искусственного интеллекта.

Статья поступила 05.02.2026; рецензия получена 23.04.2026; принята к публикации 11.05.2026.

■ INTRODUCTION

Youth represent one of the key resources for the socio-economic development of any region, serving as a carrier of a significant portion of human capital. Firstly, in the context of demographic aging, youth become an important source for sustaining economic growth, acting as a driver of innovation, entrepreneurship, and increased labor productivity [1, p. 24–25]. Secondly, this demographic group is the most mobile segment of the workforce, which adapts more quickly to the ever-changing demands of the labor market. Thirdly, the high expectations of youth stimulate the development of new sectors of the economy and services (creative industries, sharing economy, social innovations, etc.) [2], as well as the digital transformation of existing industries. Consequently, its quantitative and qualitative

characteristics largely determine the future of the economy.

It is no coincidence that in many strategic development documents of Russia, youth is viewed as a crucial subject of development that ensures the country's competitiveness. In this context, the emphasis is placed on realizing their potential across various fields, fostering civic-patriotic education, and creating opportunities for identifying and preserving talents[1]. A significant step in this direction was the adoption of the Strategy for the Implementation of Youth Policy in the Russian Federation for the period up to 2030[2], which became the first systematic document outlining the main priorities in this area.

At the same time, within the context of Russian reality, there is a noticeable decrease in the proportion of youth within the age structure of the population: over the past 15 years, it has declined by 8.7 percentage points, particularly in the 20–24 age category (by 3.7 percentage points)[3]. Furthermore, as indicated by Rosstat's forecast data up to 2046[4], this trend is expected to persist in the near future, especially for those aged over 25. However, after 2040, due to demographic waves, some improvement in the younger age groups can be anticipated [3, p. 41]. Consequently, there has been a reduction in the share of youth in the labor force (by more than 10 percentage points since 2005), which, combined with a decrease in employment levels, may lead to an exacerbation of the labor shortage[5]. In this context, against the backdrop of the declining scale of this demographic group, the issues surrounding the quality of the youth's labor potential are becoming increasingly relevant. The competitiveness of the country's economy in the future largely depends on this factor. In this regard, there has been a persistent issue regarding employers' dissatisfaction with the quality characteristics of young individuals, specifically their level of professional training and personal qualities [4, p. 1045], including discipline[6]. This aspect has also been highlighted in the Long-Term Program for Promoting Youth Employment until 2030 as one of the most pressing issues in the employment of the younger generation[7].

Under the current circumstances, a systematic assessment and management of the quality of the youth labor potential emerges as a significant strategic task within the framework of ensuring innovative progress and the long-term competitiveness of the country. To achieve this, it is essential to have information regarding the presence and direction of changes in this area. Consequently, the objective of this work is to evaluate the dynamics of the quality of youth labor potential and its correlation with labor productivity (based on data from the Vologda region).

The concept of labor potential. The formation of the concept of labor potential primarily occurred within the framework of domestic science. Its foundation was established in the works of S.G. Strumilin, who examined the impact of various worker characteristics on labor productivity and attempted to provide a quantitative assessment of the qualitative aspects of labor resources[8]. In the 1970s and 1980s, research by L. A. Kostin, I. S. Maslova[9], A. S. Pankratov, Y. G. Odegov, and

[1] Decree on the national development goals of the Russian Federation for the period until 2030 and the outlook until 2036. – URL: http://kremlin.ru/events/president/news/73986; Decree of the President of the Russian Federation dated 02.07.2021 No. 400 «On the National Security Strategy of the Russian Federation». – URL: http://publication.pravo.gov.ru/Document/View/0001202107030001?index=12; The Strategy for Spatial Development of the Russian Federation for the period until 2030 with a forecast until 2036: approved by the order of the Government of the Russian Federation dated 28.12.2024 No. 4146-r. – URL: https://www.economy.gov.ru/material/file/download/3b8e3a39329ce7949978d271195fdb6d/strategiya_prostranstvennogo_razvitiya_rf_na_period_do_2030_goda_s_prognozom_do_2036_goda.pdf (access date: 10.02.2026).

[2] The strategy for implementing youth policy in the Russian Federation for the period up to 2030 is approved by the order of the Government of the Russian Federation dated August 17, 2024, No. 2233-r. – URL: http://static.government.ru/media/files/jBrmuJi7WMLGBOFtXWhrMIzKFCgIgqO7.pdf (access date: February 10, 2026).

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[7] Long-term program to support youth employment until 2030: approved by the order of the Government of the Russian Federation dated 14.12.2021 No. 3581-r. – URL: http://static.government.ru/media/files/rPqTKcZXAGKm9YF3xVcoANoHZSUnnpE6.pdf (access date: 10.02.2026).

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[9] Maslova I. S. The Labor Potential of Soviet Society: Issues of Theory and Research Methodology. Moscow: Institute of Economics, Academy of Sciences of the USSR, 1987. 125 pages.

others elevated this category to a well-established status, integrating notions of the qualitative characteristics of the workforce as a key reserve for intensifying production in the context of the increasing importance of the human factor. In this regard, labor potential was viewed as a combination of quantitative (working time funds) and qualitative characteristics (health, education, creative potential, etc.) of the individual that can be realized in labor activities[10]. A number of researchers also interpreted labor potential as labor resources, a factor of production[11], and an expression of abilities to work[12].

As a result, the Russian scientific tradition defines «labor potential» as a multifaceted economic category that extends beyond «labor resources» and «workforce». It is no coincidence that numerous studies focus on distinguishing the concept of «labor potential» from various related terms, such as «staff potential», «human potential», «resource potential», «human resources», «human capital», and so forth [5; 6; 7]. All these categories are closely linked to the concept under consideration; for instance, labor potential is viewed as a crucial constructive element of human potential [8, p. 106], and its realization in labor activities is a key component of human capital [9, p. 96].

In foreign science, the concept of «labor potential» has not been conceptually defined. Research in this area primarily focuses on the analysis of labor demand and supply, the functioning of the labor market, and the job market [10; 11; 12]. However, an integrative term equivalent to the domestic «labor potential» has not been established. An exception is made for a number of works by European scholars, yet in these, the concept does not receive extensive theoretical development and is reduced to the use of the term «labor force potential», which predominantly characterizes quantitative employment capabilities [13][13]. One of the key analogs of the category under consideration is the concept of human resources, which encompasses the totality of knowledge, skills, abilities, and health of the population utilized in the economy [14; 15]. Related concepts such as «human capital», which emphasizes investments in skills, and «labor abilities/opportunities», which reflect an individual's capacity for work, are also employed [16; 17].

Several primary approaches to interpreting the concept of «labor potential» are identified: demographic, medico-demographic, statistical, sociological, and economic [18, p. 17–20]. At the same time, all except the last represent narrower interpretations from either a quantitative or qualitative perspective. It appears that the most comprehensive is the economic approach, which takes into account both aspects, as well as the resource and factor nature of the concept in question. In the context of this study, labor potential is understood as a generalized characteristic of the totality of labor capabilities, encompassing both quantitative and qualitative components.

The structure and measurement of labor potential. The differences in approaches to understanding the essence of this category lead to a variety of structural options. Most researchers include indicators of education, qualifications, and health as part of labor potential; however, considering a broader range of indicators contributes to a more accurate assessment. Thus, sets of indicators encompass components of creative potential, socio-personal characteristics, motivations, as well as more general aspects of demographics, economics, and digitalization [19; 20; 21], among others.

Depending on the scale, labor potential is studied at various levels, from individuals/groups of the population/enterprises to industries/regions/countries. Since the sectoral approach predominated in Soviet science for a considerable time, research during this period was focused specifically at this level [21, p. 10]. With the strengthening of decentralization and regionalization processes at the end of the 20th century and the beginning of the 21st century, interest in the territorial aspect of labor potential has increased. Questions related to the employment opportunities of various socio-demographic groups, such as youth, individuals

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with disabilities, women, and the elderly, have also been actively researched [22; 23]. It is important to note that for specific categories of citizens, such as older adults, the term «social-labor potential» is sometimes used, which reflects the consideration of not only internal but also external resources of an individual that can either stimulate or hinder the realization of internal reserves [24, p. 140].

To assess labor potential, both statistical and sociological methods and indicators are utilized, along with their synthesis. Typically, within the framework of research on quantitative characteristics, statistical indicators that reflect its state and level of realization [8] are employed, while the examination of qualitative aspects is conducted using sociological methodologies [18]. Among the specific methods, one can highlight index and ranking methodologies, cluster analysis, scoring assessments [20; 21], and others. The choice of a particular approach largely depends on the research objective and the available information base. It is also important to note that there is a general trend towards a shift from individual proxy indicators to integral comprehensive measures, as well as from quantitative to qualitative parameters of labor potential.

The issue of labor potential quality remains one of the most pressing and debated topics. Its assessment utilizes both statistical indicators (such as the proportion of individuals with a certain level of education and/or qualifications, mortality rates among the working-age population, the number of disabled individuals, and the percentage of the population with income below the subsistence minimum, etc.) [21; 25], as well as data from sociological surveys [18; 22]. Existing methodologies predominantly examine components such as health, education and qualifications, creative potential, moral qualities, and others. One of the most significant contributions in this field is the measurement of labor potential quality through the indicator of social capability, which was developed based on the theory of qualitative characteristics of the population proposed by the staff of the Institute of Socio-Economic Studies of Population of the Russian Academy of Sciences (currently known as the Institute of Socio-Economic Studies of Population of the Russian Academy of Sciences of the Federal Center of Theoretical and Applied Sociology of the Russian Academy of Sciences)[14]. This indicator is integral and reflects the level of development of eight components of labor potential quality (physical and mental health, cognitive potential, creative abilities, sociability, cultural and moral levels, and the need for achievement). Since 1997, sociological surveys using this methodology and corresponding measurements have been conducted regularly only in the Vologda Oblast [18].

Regarding the quality of youth labor potential, a review of research practices indicates a limited number of publications that directly address this topic. Most often, only specific aspects are examined, such as health, professionalism, and success orientation [26], work motivation [27; 28], value orientations [29; 30], among others, which does not allow for a comprehensive understanding of its condition, dynamics, and development factors.

Comprehensive studies that directly assess the quality of the labor potential of the younger generation are primarily associated with the work of scientists from the Vologda Research Center of the Russian Academy of Sciences [18; 31; 32]. These studies were conducted based on the monitoring of the labor potential quality of the population in the Vologda region, following the aforementioned methodology. Specifically, they document an overall positive trend in the integral indicator, alongside a declining trend in the development of qualitative characteristics such as cognitive and creative potentials. Furthermore, it is noted that a lack of professional knowledge, working outside one's specialty, a mismatch between work and individual abilities and inclinations, as well as a lack of interest in the chosen profession, lead to an underutilization of their potential in labor activities. Therefore, in the context of fragmented research that allows for the examination of the state and realization of the quality of youth labor potential, the need for a systematic study of this issue is emphasized. This is particularly significant in the context of determining its level, structure, and dynamics, which will enable the establishment of an evidence base for the development of targeted measures in youth, educational, and socio-economic policy aimed at the effective reproduction and realization of the labor potential of this demographic group.

[14] Quality of the Population / edited by N. M. Rimashevskaya, V. G. Kopnina. Demography and Sociology. Issue 6. Moscow: ISEP RAN, 1993. 185 pages.

■ MATERIALS AND METHODS

The study was conducted using data from the Vologda Oblast, which serves as a typical subject of the Russian Federation based on most socio-economic indicators, ensuring the alignment of many ongoing processes with the nationwide dynamics [33, p. 129]. The information base consisted of data from official statistics and monitoring of the quality of the labor potential of the population in the Vologda region, carried out since 1997 by the Vologda Research Center of the Russian Academy of Sciences. The general population included individuals of working age in the region. The sample at each observation stage comprised 1500 individuals from the cities of Vologda and Cherepovets, as well as eight municipalities: it was quota-based and representative in terms of gender, age, proportions of urban and rural populations, distribution of the population among settlements of various scales, and levels of participation in the labor force (employed, unemployed, and those not in the labor force). The sampling error was no more than 3–4% with a confidence interval of 4–5%. The survey was conducted using a self-administered questionnaire at the respondents' place of residence. In this study, the quality of labor potential is examined as a multifaceted category that reflects the level of development of the fundamental qualities of the population, which are essential for the execution of effective labor activities. Based on the theory of qualitative characteristics of the population developed at the Institute of Socio-Economic Studies of Population of the Russian Academy of Sciences, the initial stage involved calculating individual components of labor potential quality, as well as the corresponding composite indices that reflect the development of psychophysiological, intellectual, communicative, and social potentials, along with an integral index of social capability that comprehensively characterizes the quality of labor potential [18, p. 33–36]. The methodology relies on indirect assessment of the basic components using Likert scales, the formation of aggregate indices (see Table 1), and an overall integral index utilizing the geometric mean. In other words, all components are quantitatively assessed through the index method as the ratio of the actual score obtained to the maximum possible score.

In the second stage, calculations were made to determine indicators that reflect work performance, which is presented as a comprehensive characteristic of the degree of success in fulfilling one's work functions. This is measured through three interrelated aspects: the volume and quality of work, as well as labor discipline.

The calculations were based on responses to the question: «Which of the following best describes your work (or study) activities?». The response options included an assessment of the degree to which planned tasks were completed and work was submitted on time with high quality, as well as the frequency of tardiness, absenteeism, and work disruptions.

Respondents were asked to indicate the frequency of the listed characteristics of their activities using the following scale: 1 – often occurs, 2 – sometimes occurs, 3 – never occurs. The highest score for each evaluation point was assigned 2 points, while the lowest score received minus 2 points. The same principle used for calculating the components of labor potential quality was applied to compute each index (volume of work performed, labor discipline, and quality of work). Each of the listed indicators was converted to a scale from 0 to 1 using the formula:

$$x_{0-1} = \frac{x - \min(x)}{\max(x) - \min(x)}. \quad (1)$$

The integral index of work performance was calculated as the arithmetic mean of individual indices.

In the third stage, the relationship between specific indicators of labor potential quality and the integral index of work performance was identified. For this purpose, a direct stepwise linear regression method was employed, accompanied by preliminary correlation analysis and the selection of the most informative variables. All calculations were conducted within two age categories: under 35 years and over 35 years, to facilitate a comparative analysis between the youth group and the remaining part of the working-age population. The upper limit of the youth age category was chosen in accordance with the legally established framework in Russia, which is 35 years. The calculations were performed in the IBM SPSS Statistics software environment.

Table 1 – Components of the quality of labor potential

№		Qualitative characteristics of labor potential	Primary information obtained from the questionnaire survey
1	Psychophysical potential	Physical health	– severity and frequency of illnesses; – self-assessment of health on a five-point scale
2		Mental health	– presence of signs of mental instability (mental stability test)
3	Intellectual potential	Cognitive potential	– activities for acquiring knowledge and sources of knowledge acquisition; – attitude toward knowledge and education
4		Creative potential	– manifestation of creativity, engagement in creative activities; – attitude toward creative activity
5	Communicative potential	Sociability	– ability to interact and cooperate with other people (communication ability test)
6		Cultural level	– internal culture (the ability to maintain one's health, organize one's leisure, perform one's work well, etc.); – external culture (politeness, good manners, knowledge of etiquette, etc.)
7	Social activity	Moral level	– moral sense (attitude toward universal moral values such as honesty, justice, integrity, etc.); – moral behavior (instances of deception, offense, rudeness, injustice toward other people, etc.)
8		Need for achievement (social aspirations)	– plans and intentions to improve one's job and social status, achieve professional success, gain public recognition, pursue self-development, etc

Source: compiled from [18, p. 33–36].

■ RESULTS

From a quantitative perspective regarding the labor potential of youth, it can be observed that there has been a gradual decline (see Table 2). Between 1990 and 2024, the youth population in the Russian Federation has decreased by nearly 27%, while in the Vologda Oblast, the reduction is 42%. The most significant losses are noted in the age category of 25–29 years (39% for the Russian Federation and 55% for the Vologda Oblast), whereas other age groups experienced a less pronounced but still considerable decline (approximately 22–23% and 28–42% respectively). The most significant drop occurred during the period from 2010 to 2020, which can be attributed to the 'echo of the 90s': by 2020, the small generations born during that time constituted the majority of the age group 15–29 years.

These demographic trends significantly influence the decline in the proportion of youth within the workforce structure: since 2005, it has decreased by 10 percentage points across Russia and by 12 percentage points in the Vologda Oblast[15]. This has resulted in an increased shortage of personnel and an aging workforce in several sectors, heightened competition among employers for young specialists, and an increased tax burden on those employed, among other issues. In such

[15] Labor and Employment in Russia. – URL: https://rosstat.gov.ru/folder/210/document/13210 (access date: 10.02.2026).

Table 2 – The number of young people, by age category, in thousands

Age	Territory	1990	2000	2010	2020	2024	1990 to 2024, %
15–19	Russian Federation	10135,7	12126,6	8897,9	7161,3	7843,1	77,4
	Vologda Oblast	86,7	104,6	68,7	56,8	62,7	72,3
20–24	Russian Federation	9556,8	10924,8	12319,2	6888,8	7439,2	77,8
	Vologda Oblast	82,8	93,6	101,8	49,3	51,1	61,8
25–29	Russian Federation	12062,1	10336,7	11908,8	9427,3	7382,9	61,2
	Vologda Oblast	110,8	83,9	101,3	64,5	49,8	44,9
30–34	Russian Federation	12906,6	9594,3	10807,3	12633,1	10112,6	78,4
	Vologda Oblast	121,7	81,6	90,3	95,3	70,6	58,0
15–34	Russian Federation	44661,2	42982,4	43933,1	36110,6	32777,9	73,4
	Vologda Oblast	402,0	363,6	362,0	266,0	234,2	58,3

Source: Rosstat data.

circumstances, the quality of the youth labor potential and its ability to offset quantitative losses becomes even more crucial. For instance, during the inter-census period from 2002 to 2020, the share of youth with higher education in Russia rose by 10.1 percentage points, while the proportion of individuals with secondary vocational and general education decreased (by 7.5 and 10.3 percentage points, respectively)[16]. However, does this have an unequivocally positive effect on the labor market, especially when there remains a shortage of personnel in skilled trades[17]?

The monitoring data on the quality of the labor potential of the population in the Vologda Oblast allows for a more detailed examination of its condition and dynamics, particularly among the youth. The values of the integral index generally demonstrate a gradual increase throughout the entire observation period (see Fig. 1). Over the span of 27 years, the index among the youth has risen from approximately 0.67 units to 0.69 units. Notably, since 2005, this increase has primarily occurred smoothly, without sharp fluctuations, which may indicate systemic rather than conjunctural changes in how the youth assess their own qualities. These trends are largely similar to those observed for the population as a whole, while older age groups have continued to respond to crisis phenomena in the economy with a slight decline in index values.

From the perspective of individual components of labor potential quality, the psychophysical potential of youth demonstrates a steady increase from 0.711 units to 0.812 units (see Table 3). By the year 2024, this indicator shows that the younger generation significantly surpasses both the overall population (0.779 units) and older age groups (0.760 units). This trend is attributed to the fact that indicators of both physical and mental health in the examined category have grown at slightly higher rates (9% and 20% compared to 7% and 18%, respectively) relative to the rest of the population. In other words, young people have begun

[16] Population Censuses. – URL: https://rosstat.gov.ru/perepisi_naseleniya (access date: 17.02.2026).
[17] The shortage of personnel in skilled trades persists amid rising salaries. – URL: https://czn.mos.ru/EE/News/NewsCard/994?_=-Deficit-kadrov-v-rabochih-professiyah-sohranyaetsya-na-fone-rosta-zarplat (access date: 17.02.2026).

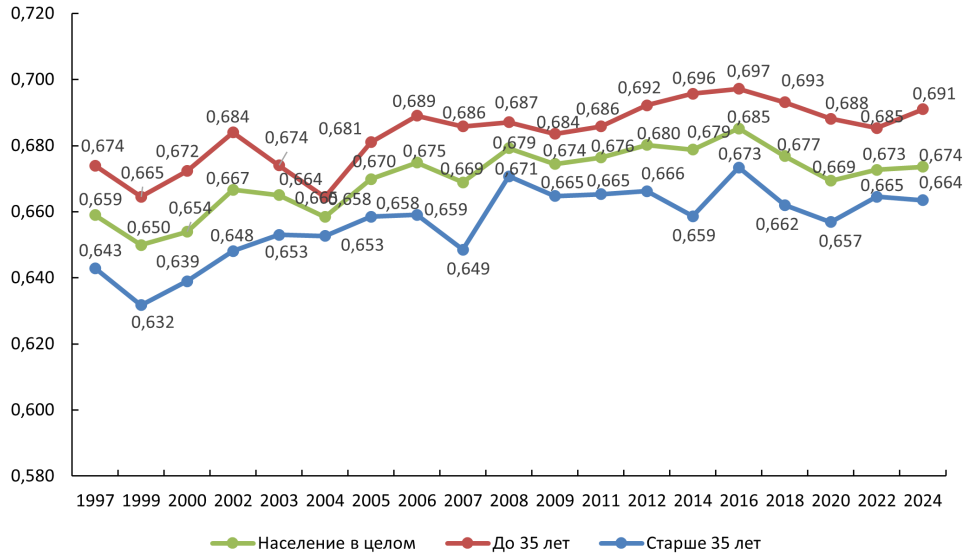


Figure 1 – The dynamics of the integral indicator of labor potential quality, units
Source: here and in all subsequent tables, data are based on monitoring data, with calculations by the authors

to subjectively assess their physical health more positively and feel psychologically more resilient, which creates certain prerequisites for high productivity and work effectiveness. However, it is essential to consider that this self-assessment may not fully align with objective medical data.

Table 3 – The dynamics of psychophysical potential and its components, units

Component/composite index		1997	2004	2011	2018	2024	Trend
Physical health	Total population	0,687	0,691	0,728	0,740	0,737	
	Under 35 years	0,713	0,696	0,758	0,784	0,776	
	Over 35 years	0,659	0,686	0,694	0,701	0,715	
Mental health	Total population	0,706	0,709	0,759	0,789	0,834	
	Under 35 years	0,716	0,719	0,773	0,820	0,857	
	Over 35 years	0,695	0,699	0,743	0,761	0,821	
Psychophysical potential	Total population	0,693	0,694	0,740	0,760	0,779	
	Under 35 years	0,711	0,703	0,761	0,798	0,812	
	Over 35 years	0,672	0,687	0,715	0,725	0,760	

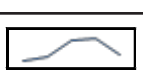
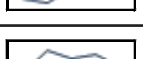
The communicative potential of the youth is also characterized by a trend of growth (see Table 4), albeit at a slower pace compared to the indicators of psychophysiological potential. Between 1997 and 2024, its values increased by 4% (from 0.68 to 0.71 units), in contrast to a 5% increase among individuals over 35 years of age. This can be attributed, on one hand, to the effect of a low baseline, and on the other hand, to the fact that older individuals have also begun to adapt to the demands of the economy and develop similar 'soft' skills to remain competitive. While the sociability of the youth remains relatively stable, their cultural level shows a significant increase (by 10%), indicating the establishment of fundamental communication skills and an enhancement in cultural organization.

Table 4 – The dynamics of communication potential and its components, units

Component/composite index		1997	2004	2011	2018	2024	Trend
Sociability	Total population	0,734	0,724	0,743	0,738	0,735	
	Under 35 years	0,736	0,733	0,745	0,743	0,736	
	Over 35 years	0,731	0,715	0,740	0,734	0,735	
Cultural level	Total population	0,616	0,652	0,651	0,684	0,680	
	Under 35 years	0,634	0,656	0,656	0,695	0,696	
	Over 35 years	0,596	0,649	0,645	0,674	0,670	
Communicative potential	Total population	0,668	0,682	0,691	0,704	0,700	
	Under 35 years	0,680	0,688	0,695	0,713	0,710	
	Over 35 years	0,655	0,676	0,687	0,697	0,695	

There is a slight but steady increase (by 3%) in the indicator of social activity among the youth, in contrast to older age groups, where a gradual decline has been observed over the past twenty years (see Table 5). The moral level of the youth, meanwhile, shows a more stable increase compared to the need for achievement (5% versus 1%, respectively). As a result, in the first indicator, the youth have surpassed the population over 35 years of age, while in the second, they continue to demonstrate a significant advantage (by 15%). Thus, a behavioral model is forming among the youth, in which moral and ethical norms may be becoming more important than ambitions, and success, including in the workplace, is associated with a certain adherence to these norms.

Table 5 – The dynamics of social activity index and its components, units

Component/composite index		**1997**	**2004**	**2011**	**2018**	**2024**	**Trend**
Moral level	Total population	0,765	0,755	0,765	0,768	0,775	
	Under 35 years	0,747	0,743	0,760	0,766	0,784	
	Over 35 years	0,785	0,767	0,771	0,770	0,770	
Need for achievement	Total population	0,630	0,646	0,647	0,649	0,630	
	Under 35 years	0,679	0,676	0,686	0,695	0,688	
	Over 35 years	0,576	0,618	0,603	0,608	0,597	
Social activity	Total population	0,688	0,691	0,698	0,700	0,691	
	Under 35 years	0,708	0,702	0,718	0,725	0,728	
	Over 35 years	0,667	0,680	0,675	0,677	0,670	

The most declining component of labor potential quality is intellectual potential (see Table 6), which is characteristic of all age groups. Its values for the year 2024 are the lowest among all components, not exceeding 0.6 units, and the overall decline in the index from 1997 to 2024 for the population as a whole amount to 7%. This decline has primarily occurred due to a reduction among the youth (9% compared to 5% for individuals over 35 years old). Both cognitive and creative potential among the youth exhibit a consistent downward trend (8% and 10% respectively), which poses a significant challenge in terms of potential risks for innovative economic development and the quality of human capital.

Table 6 – The dynamics of intellectual potential and its components, units

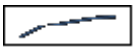
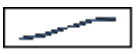
Component/composite index		1997	2004	2011	2018	2024	Trend
Cognitive potential	Total population	0,626	0,623	0,626	0,605	0,580	
	Under 35 years	0,627	0,612	0,624	0,600	0,575	
	Over 35 years	0,624	0,633	0,629	0,609	0,583	
Creative potential	Total population	0,601	0,571	0,589	0,560	0,560	
	Under 35 years	0,619	0,581	0,588	0,563	0,557	
	Over 35 years	0,581	0,562	0,590	0,558	0,561	
Intellectual potential	Total population	0,609	0,592	0,604	0,578	0,565	
	Under 35 years	0,619	0,592	0,603	0,577	0,561	
	Over 35 years	0,599	0,592	0,605	0,579	0,567	

Thus, the dynamics of the integral index reveals an overall positive trend, which simultaneously conceals divergent processes within the quality structure of the labor potential. The youth exhibit significant progress in socio-psychological and communicative qualities (morality, cultural level, sociability), yet there is a notable and persistent decline in their cognitive and creative potential.

These identified trends further emphasize the effectiveness with which the existing level of labor potential quality is converted into results, which largely influences the growth of labor productivity and the economy as a whole. The data overall indicate a steady increase in the work performance of youth from 1997 to 2024: the corresponding integral index rose from 0.614 to 0.720 units (see Table 7). Consequently, by 2024, the youth have significantly approached the values of the older groups (0.742 units) and the population as a whole (0.734 units). The structure of this growth, along with comparisons to other age groups, indicates a connection to changes in the quality of labor potential that were previously identified.

Among its individual components, the most significant increase, particularly in comparison to individuals over 35 years old, was observed in the area of labor discipline (by 40%), which is attributed to the effect of a low baseline. The improvement in the discipline of the youth may be linked to the previously mentioned rise in their moral standards and the desire for achievement. Regarding the work volume index, its values have also increased noticeably (by 17%), nearly reaching those of older age groups (0.677 units). However, the quality of work among the youth has not suffered as a result: its level has also risen, albeit not as significantly (by 2%), in contrast to the population over 35 years old, where a negative trend was identified (0.774 units in 1997, 0.75 units in 2024). These trends may be associated with both the enhancement of the psychophysiological potential of the younger generation and the growth of their cultural and moral qualities.

Table 7 – The dynamics of work performance index and its components, units

Component/composite index		1997	2004	2011	2018	2024	Trend
Volume of work index	Total population	0,641	0,594	0,637	0,684	0,676	
	Under 35 years	0,577	0,573	0,620	0,667	0,674	
	Over 35 years	0,713	0,614	0,656	0,699	0,677	
Labor discipline index	Total population	0,615	0,654	0,688	0,737	0,768	
	Under 35 years	0,509	0,623	0,654	0,691	0,712	
	Over 35 years	0,731	0,685	0,726	0,778	0,799	
Quality of work index	Total population	0,765	0,714	0,747	0,767	0,758	
	Under 35 years	0,756	0,723	0,746	0,759	0,773	
	Over 35 years	0,774	0,705	0,748	0,774	0,750	
Work performance index	Total population	0,673	0,653	0,692	0,729	0,734	
	Under 35 years	0,614	0,639	0,674	0,705	0,720	
	Over 35 years	0,739	0,667	0,711	0,751	0,742	

To identify the relationship between indicators of the quality of youth labor potential and the work performance index, regression analysis was employed through the stepwise inclusion of independent variables into the regression equation, where the dependent variable was the index in question, and the independent variables were the individual components of labor potential quality. In the initial stage, based on correlation analysis, the indicator reflecting the need for achievement was excluded from further calculations, as it did not demonstrate a significant relationship with the work performance index. After testing the remaining indicators for multicollinearity due to the presence of moderate significant correlation between the cultural and moral level indices ($r = 0.440$, $p < 0.001$) and between physical and mental health ($r = 0.423$, $p < 0.001$), the indicators of cultural level and physical health were not considered in the construction of the regression model. This is due not only to statistical requirements but also to the fact that the moral level is a more fundamental characteristic of personality, determining both cultural development and labor conduct. On the other hand, physical health serves as a foundation for participation in the workforce; however, it does not significantly impact the performance metrics of the working population in the contemporary economy (whereas mental health acts as a factor that, in the long run, directly influences the ability to maintain high productivity). Subsequently, predictors were introduced into the model in a sequence determined by the results of the correlation analysis (see Table 8).

The final model incorporated four indicators: moral level, mental health, sociability, and cognitive potential. The moral level index emerged as the most significant predictor, accounting for approximately 8.6% of the variance in the work performance index ($F1, 11142 = 1043.64$; $p < 0.001$). The mental health index further explained an additional 6.1% ($F1, 11141 = 792.43$; $p < 0.001$), while the sociability index contributed another 2.9% of the variance ($F1, 11140 = 396.61$; $p < 0.001$). The inclusion of the cognitive potential index in the regression equation added an extra 0.4% to the total variance. This indicates that higher values of the work performance index are primarily associated with higher values of the moral level, mental health, and sociability indices: collectively, these

Table 8 – Summary statistics for regression models

Model	R	R^2	Adjusted R^2	Std. error of the estimate	Change statistics					Durbin-Watson statistic
					R^2	F	df1	df2	Sig. F	
1	0,293[a]	0,086	0,086	0,20757	0,086	1043,64	1	11142	,000	
2	0,383[b]	0,146	0,146	0,20057	0,061	792,43	1	11141	,000	
3	0,419[c]	0,176	0,175	0,19710	0,029	396,61	1	11140	,000	
4	0,424[d]	0,180	0,180	0,19658	0,004	60,1	1	11139	,000	1,932

Note:

a. Predictors: (constant), moral level.

b. Predictors: (constant), moral level, mental health.

c. Predictors: (constant), moral level, mental health, sociability.

d. Predictors: (constant), moral level, mental health, sociability, cognitive potential.

three variables account for 17.6% of the variance in the index under consideration, and when including cognitive potential, this figure rises to 18%. The value of the Durbin-Watson statistic (DW) is 1.932, indicating the absence of autocorrelation in the residuals of the regression model, which confirms the reliability of the obtained results.

Thus, the analysis identified four factors that significantly influence the productivity of youth (see Table 9). All of these factors have a positive correlation with the final index: moral level (β= 0.409; p=0.000), mental health (β= 0.283; p=0.000), sociability (β= 0.319; p=0.000), and cognitive potential (β= 0.149; p=0.000). Consequently, an increase in the moral level by 0.1 points results in an average productivity increase of 0.04 points, while a similar increase in sociability and mental health leads to a rise of 0.03 points, and cognitive potential results in an increase of 0.02 points.

Table 9 – Summary statistics for regression models

Model		Unstandardized coefficients		Standardized coefficients	t	Significance
		B	Std. error	Beta		
4	Constant	–0,183	0,018		–10,132	0,000
	Moral level	0,409	0,017	0,225	24,709	0,000
	Mental health	0,283	0,012	0,209	23,280	0,000
	Sociability	0,319	0,018	0,168	18,183	0,000
	Cognitive potential	0,149	0,019	0,071	7,753	0,000

The final regression equation is expressed as follows:

$$Y = –0,183 + 0,409a + 0,283b + \\ + 0,319c + 0,149d + \varepsilon \quad (2),$$

where Y represents the labor productivity index, a denotes the moral level, b indicates mental health, c refers to sociability, d signifies cognitive potential, and ε is a random variable that characterizes the deviation of the actual value of the work performance index from the theoretical value calculated using the regression equation.

The negative value of the constant in the equation may suggest that in the complete absence of morality, sociability, cognitive abilities, and mental health, work performance would also fall into the «negative» zone, indicating that these characteristics are fundamental for effective labor. Furthermore, the relatively low value of the total explained variance suggests the presence of other,

more significant factors not included in the model (for instance, organizational, motivational, working conditions, etc.).

■ DISCUSSION

The findings of the research based on monitoring data conducted in the Vologda Oblast indicate that between 1997 and 2024, there have been transformations in the qualitative structure of the youth labor potential. On one hand, several of its components have demonstrated positive dynamics. For instance, the level of psychophysiological potential has increased, suggesting that the younger generation feels healthier and more psychologically resilient. This observation aligns with findings from other scientific studies, which also highlight a commitment to maintaining a high level of mental health [34]. Such a trend is quite encouraging, as it may indicate that the youth possess a certain foundation for working more intensively and recovering more swiftly. Furthermore, psychological resilience facilitates easier adaptation for young people to instability, including in the labor market, a notion that is also supported by various studies [26][18].

Positive changes have also occurred regarding the communicative potential and social activity of the youth: a slight but steady increase has been observed across all indicators. It is particularly noteworthy that there has been an enhancement in their moral standards: young people declare their commitment to moral norms (such as not lying, not betraying, helping, and respecting the opinions of others, etc.), which serves as a foundation for the development of work ethics. Additionally, the youth exhibit a high level of ambition and a desire to achieve success (the 'need for achievement'), which acts as a strong motivator for career advancement. These characteristics have also been identified in other studies [26; 35].

Despite good psychophysical well-being, there is a noticeable decline in the cognitive and creative potential of the youth, which has been ongoing for a considerable period. The possible reasons for this are linked to transformations in the education system and the peculiarities of information consumption in the context of digitalization, which may affect the depth of processing and the formation of a reliance on ready-made solutions[19]. The identified decline in the dynamics of intellectual potential poses risks for the development of an innovative economy, which requires unconventional approaches and in-depth analysis.

The increase in moral, cultural, and communicative characteristics of the younger generation, along with the strengthening of its psychophysical health, has somewhat mitigated the decrease in cognitive and creative potential within the framework of the integral index of labor potential quality. This index can reflect not only the objective qualities of individuals but also the transformation of perceptions regarding what constitutes a 'good' worker. Whereas knowledge and qualifications were previously the most valued attributes, today, in the context of the growing service economy and the importance of teamwork, qualities such as communication skills, stress resilience (mental health), and loyalty (moral level) have taken precedence.

In this regard, it is essential to highlight the discrepancy between the obtained data and the key tenets of post-industrial society theories (D. Bell, M. Castells, R. Florida), where creativity and creative potential are seen as drivers of development. However, it appears that this reflects not so much a degradation of intellectual potential, but rather a rational adaptation of the youth to the demands of the labor market, which is characterized by a catch-up nature. In the economy, demand is skewed towards physical labor and narrow technical fields[20], and there is a low level of innovative activity[21], which may explain the youth's shift towards developing more in-demand skills, as evidenced by the increase in relevant indices.

The high level of these parameters translates into an increase in work volume and an improvement in labor discipline, enabling the youth to achieve a sufficiently high level of work performance. This is also consistent with the findings

[18] The youth of Russia has adapted to the changes in the labor market. – URL: https://rg.ru/2021/05/20/vyzhutovich-rossijskaia-molodezh-adaptirovalas-k-peremenam-na-rynke-truda.html?utm_referrer=https%3A%2F%2Fwww.google.com%2F (access date: 10.02.2026).

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[20] Where are your hands: the country's economy requires 2.6 million workers. – URL: https://iz.ru/1883055/mariia-stroiteleva/ekonomike-trebuetsia-26-mln-chelovek (access date: 10.02.2026).

[21] Russia in global innovation development rankings. – URL: https://www.vedomosti.ru/press_releases/2025/08/28/rossiya-v-mirovih-reitingah-innovatsionnogo-razvitiya (access date: 10.02.2026).

of a study conducted in the Penza region, which indicates the importance of work performance for the youth [36, p. 16]. As a result, by 2024, the youth, based on the integral indicator of work performance, has closely approached the older age groups, and in terms of work quality, has even slightly surpassed them. At the same time, there is a long-term risk of depleting this resource without enhancing intellectual potential, which necessitates a more balanced development of all components of labor potential.

It is important to note that the data regarding the increase in labor discipline among the youth somewhat diverges from the findings obtained in previous studies. For instance, the results of a survey conducted by VCIOM on youth employment in Russia in 2025 indicate that while employers demand adaptability, flexibility, communication skills, and the ability to understand assigned tasks, the youth themselves exhibit a lack of readiness for intensive work and strict production discipline, which may adversely affect the realization of their labor potential[22].

The results of the regression analysis have enabled the identification of the components that contribute most significantly to the overall work performance of youth, and to construct a model that explains 18% of its variation, incorporating four predictors: moral level, mental health, sociability, and cognitive potential. The findings suggest that within the structure of the labor potential of contemporary youth, the key role is played not so much by cognitive and creative abilities, but rather by socio-moral qualities and psychological resilience. In this context, morality, emotional well-being, and sociability emerge as some of the primary drivers of work performance, while cognitive potential serves a more supportive role.

Thus, one can construct the following portrait of contemporary youth in terms of their labor potential quality. Their competitive advantages include a high moral standard, strong sociability, cultural development, significant ambitions (a need for achievement), and a positive self-perception of both physical and mental health. Among the weaknesses, one can identify declining cognitive abilities (the capacity to analyze and solve complex problems) and a limited creative potential. In other words, while there is energy and a desire to work, the opportunities for realizing these in complex and intellectual tasks are restricted, which may lead to a situation of a 'qualification pit' [37]. It is also important to note that the increase in moral standards, sociability, and mental health cannot fully compensate for the lack in intellectual potential. These qualities can serve as advantages during the early stages of a career, when employers are willing to «train» a young specialist, or in certain sectors of the economy where they are indeed somewhat more important than the ability for in-depth analysis (such as the hospitality industry, food service, and office workers). As a result, employers will be compelled to either invest in the development of creativity and critical thinking skills or leverage the potential of youth to address tasks that require energy, resilience to stress, strong sociability, and high moral standards. Furthermore, it is essential to consider the significance of factors such as recognition and the opportunity for young people to realize their moral values. This implies that it is crucial for companies to focus on their corporate culture and values while ensuring regular feedback with young employees. This indicates that it is essential for companies to focus on developing their corporate culture and values while providing consistent feedback to young employees. Conversely, within the educational programs of schools and professional training organizations, it is necessary to enhance the aspects related to fostering cognitive and creative potential (which are failing components of quality labor potential), as well as the moral guidelines for youth, which serve as one of the key predictors of work performance.

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