Table 6

Structure of household income used for current expenditures and savings, 2019–2024, % to the total

	2019	2020	2021	2022	2023	2024	Q1	Q2	Q3	Q4
Incomes, total	100	100	100	100	100	100	100	100	100	100
Consumer spending, including:	80.9	75.7	80.2	75.4	77.0	76.0	82.9	77.8	78.7	67.7
compulsory payments and contributions	15.2	15.2	15.5	15.1	14.8	15.4	12.7	14.0	16.4	17.7
growth / decline of household savings in deposits, securities, purchasing real estate, change in debt on loans and on accounts of individual entrepreneurs, cash in hands	3.9	9.1	4.3	8.6	8.2	8.6	4.4	8.2	4.9	14.6

Source: Rosstat.

of income concentration increased from 0.405 in 2023 to 0.408 in 2024 and the coefficient of funds, respectively, from 14.8 to 15.1 times.

The average size of awarded pensions was 23.8% of the average accrued wages of employees of organizations in 2024 vs. 26.0% in 2023.

Concurrent growth of labor remuneration and expansion of providing social guarantees and targeted support to low-income households defined conditions for reducing the number of people with cash incomes below the poverty line/living wage from 12.2 mln people in 2023 to 10.5 mln people in 2024 and reducing the share of households having cash incomes below poverty line in the total share of households from 8.3% to 7.2%, respectively. Poverty reduction is associated both with active social support and factors that stimulate economic growth and entrepreneurial activity, high employment of residents and a steady decline in the overall unemployment rate and a wider range of employment opportunities.

4.3. Vocational education[1]

The growing personnel shortages in the Russian economy, although not directly brought about by the activities of the vocational education system, are increasingly associated in the public opinion and some studies with the inefficient structure of training highly skilled workers and specialists at secondary vocational and higher education establishments.

1. Author: *Klyachko T. L.,* Doctor of Economic Sciences, Director of the Center for Economics of Continuous Education, IAES RANEPA.

For example, in their work "Staffing the Economy: on the Most Substantial Structural Imbalances"[1] researchers at the Center for Macroeconomic Analysis and Short-Term Forecasting (CMASTF) have identified the groups of training lines/specialties[2] with a maximum shortage of higher education graduates (*Fig. 1*).

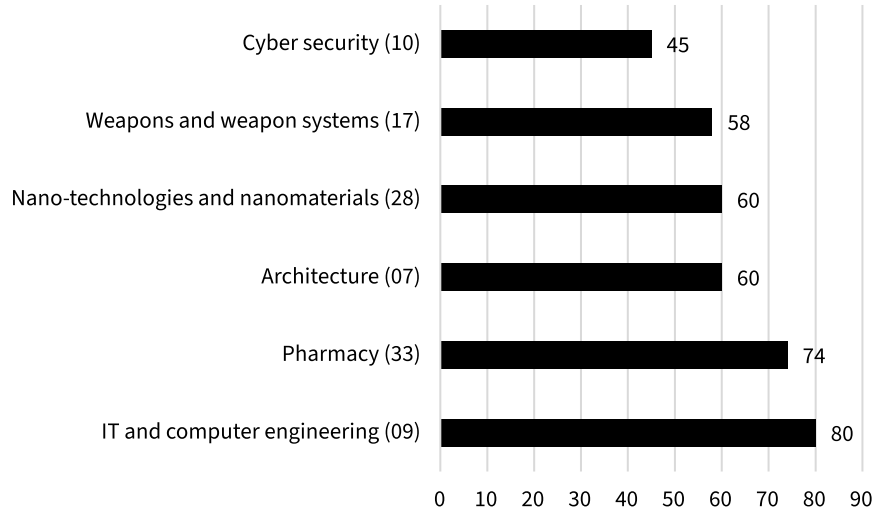

Fig. 1. **The groups of training lines/specialties with a maximum shortage of higher education graduates (percentage of projected demand satisfaction, %, with ARCPE code[3] specified in brackets)**

Source: Notebook No. 12. Special Topic. Staffing the Economy: On the Most Substantial Structural Imbalances. CMASTE, URL: TT12_2024s.pdf.

At the same time, they allude to the overproduction of higher education graduates in the following training lines/specialties[4] (*Fig. 2*).

In 2024, amid growing personnel shortages in the Russian economy CMASTF researchers were the first to relate them to the structure of training and, consequently, release of specialists from higher education establishments (HEE). At the same time, CMASTF, on one side, compares the "underproduction" of personnel with

1. Notebook No. 12. Special Topic. Staffing the Economy: On the Most Substantial Structural Imbalances. CMASTF, URL: TT12_2024s.pdf
2. CMASTF researchers write about "the groups of specialties" because they do not make a difference between bachelor's and master's degree programs (bachelor degree and master degree courses) and specialist training programs (specialist's degree courses). Actually, it is about the groups of training lines and specialties.
3. ARCPE is the All-Russian Classifier of Professions by Education.
4. CMASTF researchers call them the groups of professions and specialties.

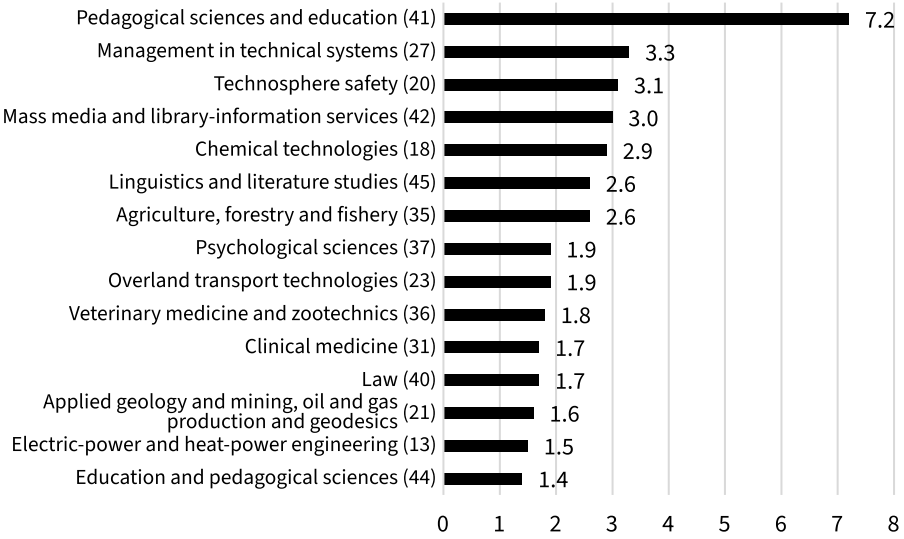

Fig. 2. **The groups of training lines/specialties with maximum surplus of higher education graduates (number of graduates per job with ARCPE code specified in brackets)**

Source: Notebook No. 12. Special Topic. Staffing the Economy: On the Most Substantial Structural Imbalances. CMASTE, URL: TT12_2024s.pdf.

the *projected need* (the adequacy of the forecast is not discussed) (*Fig. 1*), while, on the other side, they correlate the "overproduction" with the current need expressed as the number of graduates applying for one job/vacancy (*Fig. 2*). However, Rosstat data on the employment of the 2020–2022 higher education graduates[1] (actually, the percentage (share) of working higher education graduates of 2020–2022 in 2023–2024) give a slightly different picture, with Rosstat counting in employment related and unrelated to the specialty received at a higher education establishment (*Fig. 3*).

According to the data in *Fig. 3*, as regards the "Cyber Security" training line/specialty, in which CMASTF registers the highest projected need for specialists, 86% of the 2020–2022 higher education graduates are currently employed in their specialty, while 14% of graduates do not work in their specialty (nor that related to their education). CMASTF does not analyze what has caused this shortage of specialists in a situation where a considerable portion of specialists do not seek employment in their specialty. At the same time, this can be explained both by lack of decent working conditions for young people, including wages, and a poor level of training at higher education establishments, resulting in rejection by employers of a porti-

1. Rosstat provides information with a lag, taking into account graduates' different rates of employment.

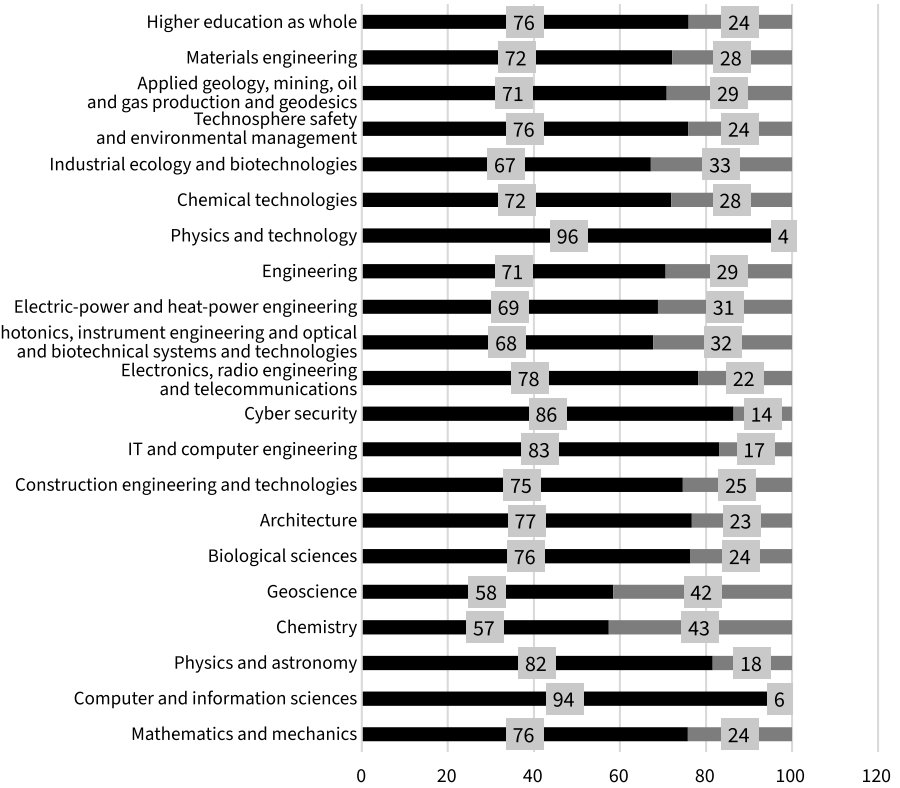

Fig. 3. **Employment (work) in 2023–2024 related to specialty of the 2020–2022 higher education graduates, %**

Source: Rosstat. Employment of graduates of SVE and higher education establishments. URL: https://rosstat.gov.ru/labour_force

on of job applicants. In addition, such a situation can be substantiated by the fact that there are currently few relevant jobs available in a particular region of Russia, while young people's labor mobility is limited for various reasons (family circumstances, illness, lack of funds for moving to another place, etc.). At the same time, it should be borne in mind that young people working in other fields of activity can apply their cyber security skills there and, thus, reduce the need for such personnel, including the projected need.

A similar situation can be found in the "IT and Computer Engineering" group, where 83% of graduates have a job related to their specialty vs. 17% of graduates who do not, or "Architecture" (77% and 23%, respectively). At the same time, it is noteworthy that in the "Computer and Information Sciences" group 94% of graduates

work in their specialty vs. only 6% of graduates who do not. It is likely that the need for specialists in cyber security, IT and computer engineering is partially met by specialists in computer and information sciences, as well as mathematics and mechanics who do not formally work in their specialty.

In 2023–2024, a very low level of employment among the 2020–2022 higher education graduates of (*Fig.* 3) is observed in "Earth Sciences" and "Chemistry" — only 58% and 57%, respectively, but CMASTF does not attribute these specialties to those with marked surplus of specialists.

According to CMASTF data, there is surplus of specialists both in clinical medicine in Russia (*Fig. 2*), i. e. doctors, and in "Education and Pedagogical Sciences", i. e. teachers. However, according to Rosstat data, the employment of graduates of medical higher education establishments is considerably above the national average level: the demand for doctors in Russia is far from being met (*Fig. 4*).

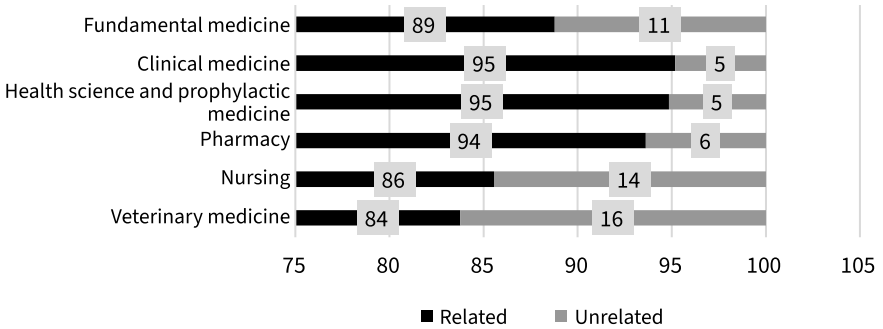

Fig. 4. **Employment (work) in 2024 related to specialty of the 2020–2024 graduates of medical higher education establishments, %**

Source: Rosstat. Employment of SVE and higher education graduates. URL: https://rosstat.gov.ru/labour_force

Employment of medical graduates from medical departments of higher education establishments in the "clinical medicine" specialty amounts to 95% vs. the mere 5% of such graduates not working in this specialty (*Fig. 4*). At the same time, these 5% of clinical physicians may, for example, work in companies manufacturing or selling medical equipment, care centers for seriously ill patients and other. It is noteworthy that even in pharmacy, in which CMASTF registers considerable projected personnel shortages, more graduates do not work in their specialty as compared to clinical medicine.

In the field of "Education and Pedagogical Sciences", the employment of graduates of pedagogical higher education establishments and pedagogical departments of traditional universities in their specialty is somewhat lower than in the medical field (health care), but still quite high, too (*Fig. 5*).

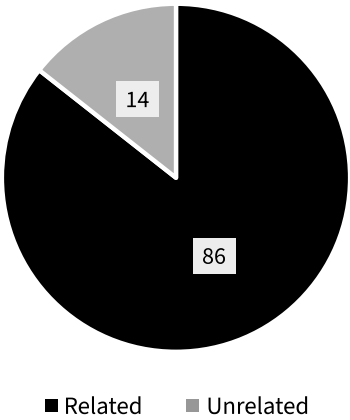

Fig. 5. **Employment (work) in 2024 related to specialty of the 2020–2022 graduates of pedagogical higher education establishments, %**

Source: Rosstat. Employment of vocational training and higher education graduates. URL: https://rosstat.gov.ru/labour_force

At present, 86% of the 2020–2022 graduates work either in a pedagogical specialty or that close to it, while 14% of graduates have jobs not related to pedagogical activities. For example, a computer science teacher can deal with information security or become a system administrator. At the same time, schools have been experiencing a considerable shortage of teaching staff in recent years, and the workload of most teachers is constantly growing, which cannot, but affect the quality of general education.[1]

According to the *Rostrud's Work in Russia* platform, formal employment of higher education graduates has decreased considerably in the past few years (*Fig. 6*).

Higher education graduates' lower employment rate in 2023[2] compared to previous years can be substantiated by the fact that that not all young professionals entered the labor market (after graduation, approximately 12%-16% of graduates do not enter the labor market in the year of graduation due to illness, further education, family circumstances and other). At the same time, a new phenomenon in the employment of young professionals is evident: strong growth in self-employment and sole proprietorship (*Fig. 7*). In addition, the registered dramatic decrease in the employment of medical graduates since 2022 may be a result of their engagement in the special military operation.

1. According to calculations by the Center for Economics of Continuous Education (CECE), IAES RANEPA, approximately 250,000 teachers will be needed in case they work 1.0 full-time employment (fte). Teachers work currently on average 1.4 fte.
2. The data on the employment of higher education graduates in 2024 is currently unavailable.

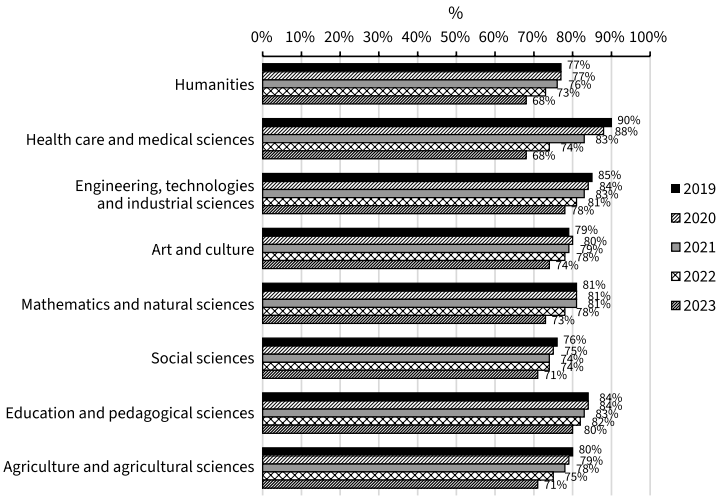

Fig. 6. **Employment of higher education graduates in various fields of education[1] in 2019–2023, %**

Source: Rostrud. The *Work in Russia* platform. URL: https://trudvsem.ru/

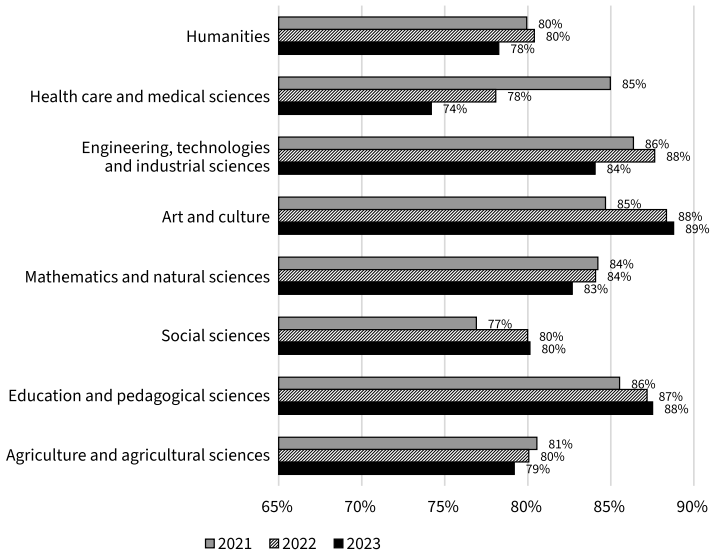

Fig. 7. **Employment of higher education graduates in various fields of education with self-employment and sole proprietorship taken into account in 2021–2023, %**

Source: Rostrud. The *Work in Russia* platform. URL: https://trudvsem.ru/

1. A “field of education” is a term used by the *Work in Russia* platform.

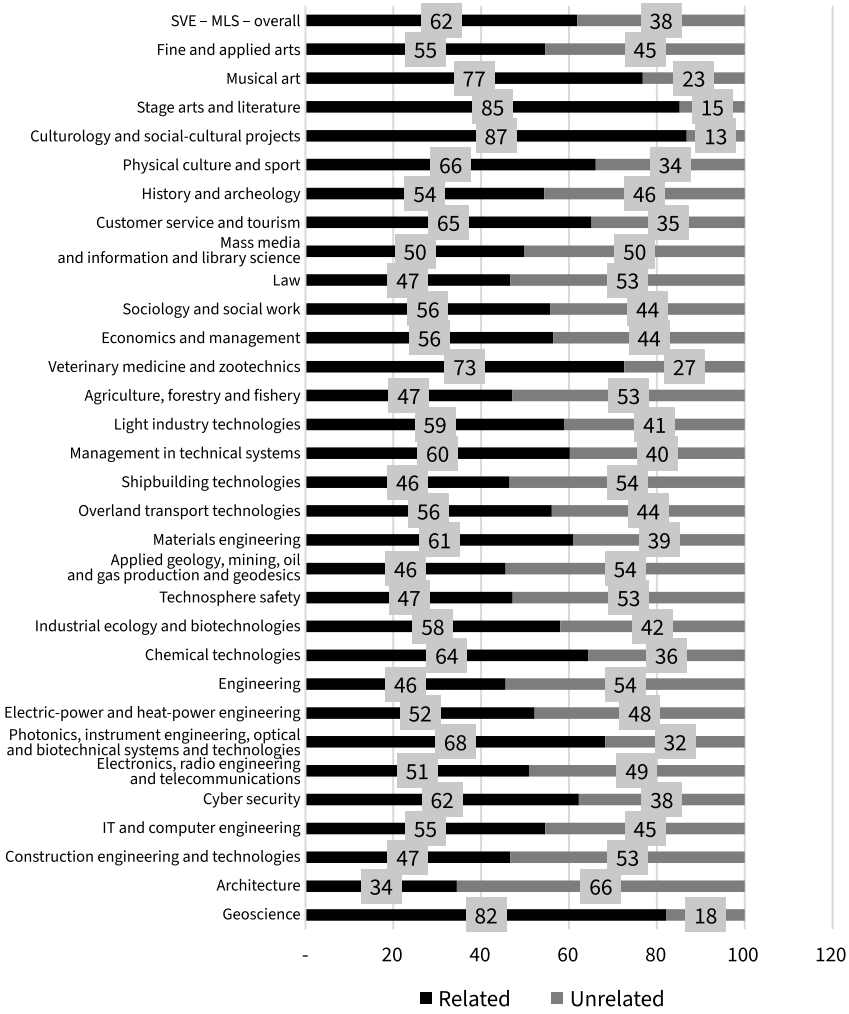

Fig. 8. **Employment (work) in 2023–2024 related to specialty of the 2020–2022 SVE graduates in mid-level specialist (MLS) training programs, %**

Source: Rosstat. Employment of SVE and higher education graduates. URL: https://rosstat.gov.ru/labour_force

With self-employment (freelancing) and sole proprietorship taken into account, employment of higher education graduates in the “Education and Pedagogical Sciences” field of education in 2023 was even higher than in 2021–2022 (*Fig. 7*). In the “Social Sciences” field of education, there was no decrease in employment as compared to 2022. A slight decline in the employment of higher education gra-

duates with their self-employment and sole proprietorship taken into account is observed only in the "Health Care and Medical Sciences" field of education, owing probably, as noted above, to their engagement in the special military operation.

Employment of higher education graduates in all fields of education as self-employed and sole proprietors has increased on average 2–3 times over since 2022. This change in youth employment appears to be related to a great extent to employers' desire to reduce labor costs amid discernable rapid wage growth in a number of sectors of the Russian economy.

The CMASTF study notes that "in recent years the existing imbalance of the "upper level" (in terms of education levels) has begun to level out in the education system: over five years, the number of graduates of secondary vocational education (SVE) has increased by 17%, while that of graduates of higher vocational education (HVE) has decreased by 11% (it is noteworthy that the "exchange" process has become somewhat more active in the past three years)."[1] In other words, the increase in graduation from SVE institutions is regarded both as a positive phenomenon and higher efficiency of the vocational education system as a whole. However, according to Rosstat's data, the imbalances in the employment of SVE graduates are considerably higher than those of higher education graduates (*Fig.* 8).

According to CMASTF, as regards such most sought-after specialties as "Cyber Security", "IT and Computer Engineering" and "Architecture", the employment of SVE graduates in their specialties is only 62%, 55% and 34%, respectively (*Fig.* 8). Overall, the employment in specialties received by SVE graduates in MLS training programs is 62% vs. 76% in case of higher education graduates. Even in education and health care, the share of SVE graduates — mid-level specialists working in their specialty — is lower than that of higher education graduates (*Fig. 9*).

In clinical medicine, 88% of SVE graduates of the relevant program work in their specialty vs. 95% of medical higher education graduates (clinicians). Similarly, only 76% of mid-level specialists trained in "Education and Pedagogical Sciences" have a job related to their education vs. 86% in case of higher education graduates.

SVE graduates who have completed training programs for skilled workers and employees face even more difficulties in finding a job (*Fig. 10*).

The employment (work) related to specialty of graduates — skilled workers and employees prepared by SVE institutions in the field of "IT and Computer Engineering" — covers only 56% (55% and 83% for mid-level specialists and higher education graduates, respectively).

Thus, the idea introduced by the mass media and governing bodies into the public consciousness and shared by CMASTF, that is, an increase in personnel training by SVE institutions normalizes imbalances in the release of specialists by the vocational education system, including higher education, does not correspond

1. *Source:* Notebook No. 12. Special Topic. Staffing the Economy: On the Most Substantial Structural Imbalances. CMASTE, p. 6. URL: TT12_2024s.pdf.

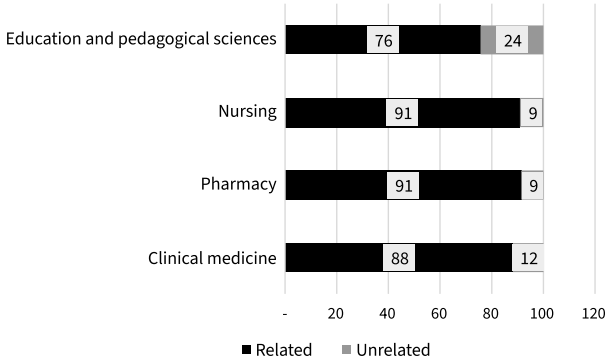

Fig. 9. **Employment (work) in 2023–2024 related to specialty of the 2020–2022 SVE graduates — mid-level specialists in medical and pedagogical specialties, %**

Source: Rosstat. Employment of SVE and higher education graduates. URL: https://rosstat.gov.ru/labour_force

to the real situation. This is largely due to the fact that the quality of training in the vocational education system is lower than in higher education establishments (despite all complaints about the quality of training at HEE) and, importantly, the ability of higher education graduates to respond more effectively to new challenges and tasks is in no way comparable with that of SVE graduates.

It is noteworthy that according to the latest studies high personnel shortages are observed not in the manufacturing sector, but in the services sector (although demand for blue-collar workers has been growing faster than that for white-collar workers in recent years).

For example, the HSE publication[1] notes that: "Since the early 2020s, we have ... registered an explosive, nationwide growth in pent-up demand for labor. Obviously, this could not but affect the nature of the industry variation. Firstly, there was a change of leader: with a fantastic result of 16.9%, the hotel and restaurant business came out on top apparently owing to a very high personnel turnover rate, low wages and unfavorable working conditions typical of this sector. Real estate operations (14.8%), administrative activities (14.4%) and public administration (12.1%) retained their positions in the group of leader-industries, where about one in ten jobs is currently "empty", but several "newcomers" have been added: construction, trade, woodworking and publishing business. The group of outsider industries, where one out of every 20–40 jobs remains unfilled, includes mining (4.9%), tobacco industry (3%), coke production (3.8%), automotive industry (5.1%), as well

1. *Kapelyushnikov R. I.* Job Escalation in the Russian Labor Market (Dynamics, Structure, Triggers. Preprint WP3/2024/02/. National Research University "Higher School of Economics". Moscow: Higher School of Economics Press, 2024. p. 28.

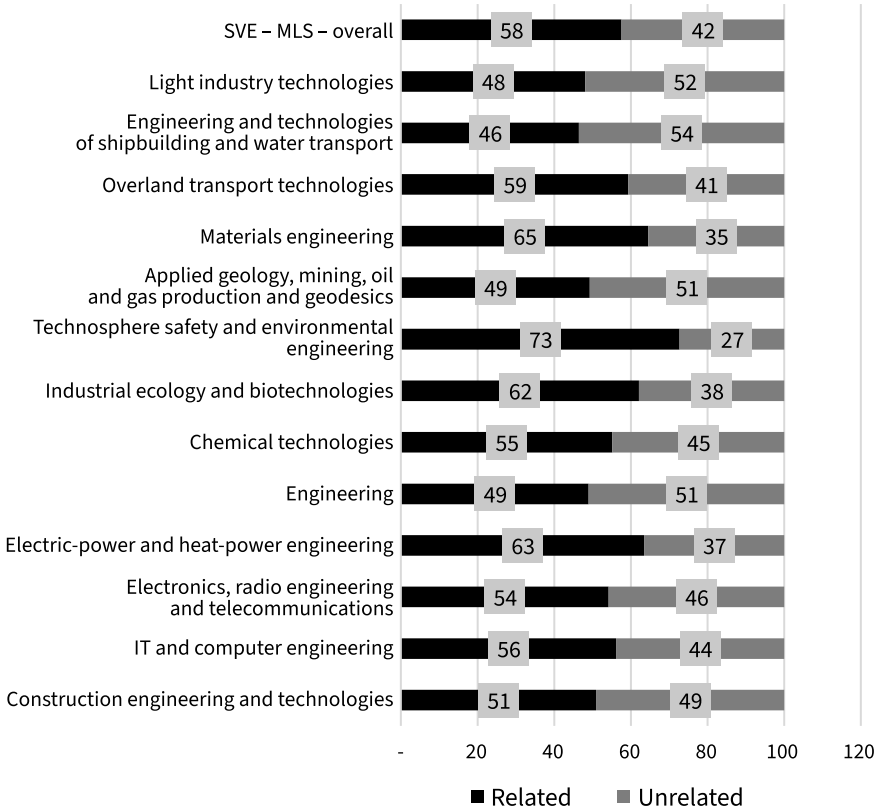

Fig. 10. **Employment (work) in 2023–2024 related to specialty of the 2020–2022 SVE graduates in programs for training skilled workers and employees (SWE), %**

Source: Rosstat. Employment of SVE and higher education graduates. URL: https://rosstat.gov.ru/labour_force.

as finance (4.2%) and education (2.6%). Oddly enough, this also includes computer manufacturing (5%) and science (5.1%)."

If we talk about the need for engineering personnel, "the idea that one of the main "disaster zones" in the Russian labor market is a huge shortage of engineering personnel (although it has, of course, worsened over time) *is not empirically confirmed*: as compared to other professional groups, this "shortage" does not look particularly dramatic."[1]

1. *Kapelyushnikov R. I.* Job Escalation in the Russian Labor Market (Dynamics, Structure, Triggers. Preprint WP3/2024/02/. National Research University "Higher School of Economics". Moscow: Higher School of Economics Press, 2024. p. 41.

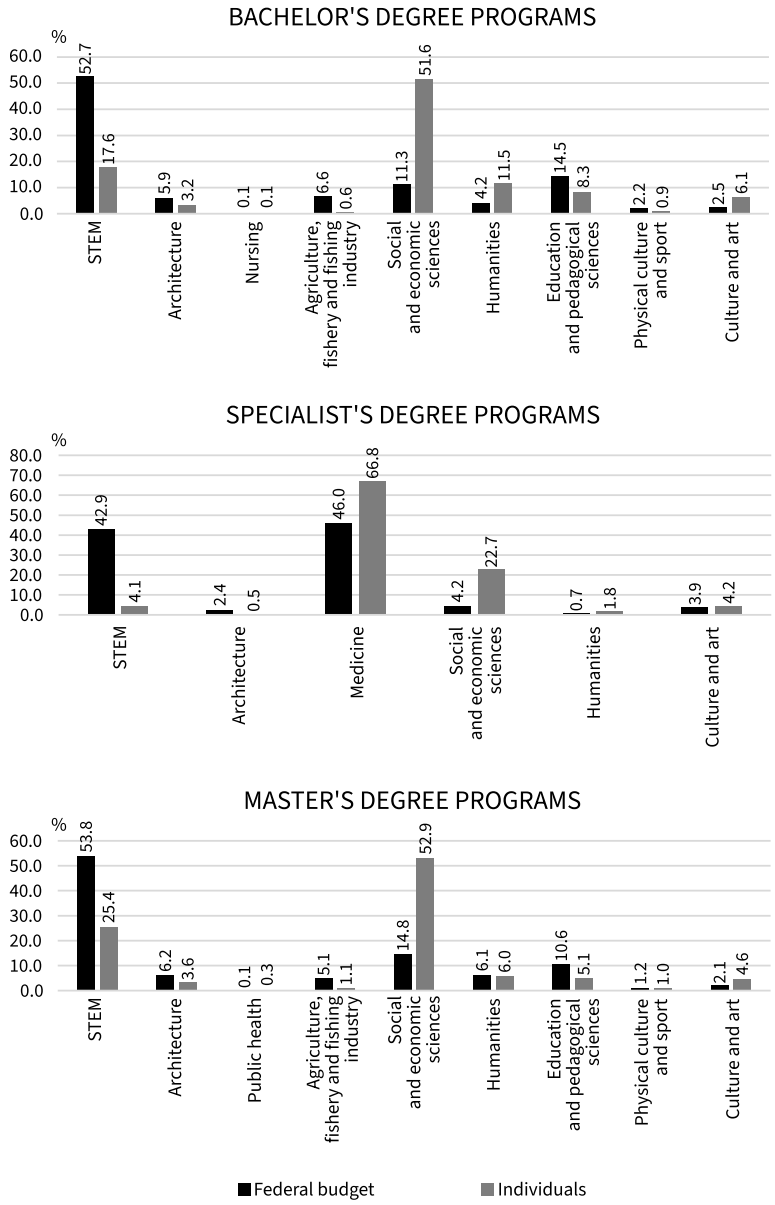

Fig. 11. **Admission to full-time education in Russian higher education establishments at the expense of the federal budget funds and individuals' funds in 2024, %**

Source: Form No. VPO-1 "Information on an entity engaging in educational activities in higher education programs: bachelor's degree programs, specialist's degree programs, master's degree programs." URL: Higher Education (minobrnauki.gov.ru); own calculations.

At the same time, in recent years the higher education system has seen a discernable shift towards budget-funded training in the STEM group (sciences, technology, engineering and mathematics). This is due precisely to the widespread perception that the Russian economy experiences an acute shortage of engineering personnel.

In 2024, as regards admission to full-time education at Russian higher education establishments, the priorities of the state in personnel training (admission financed from the federal budget — budget-funded places) and individuals (admission on a paid basis) are clearly traced (*Fig. 11*).

As regards admission to full-time education at the federal budget expense in bachelor's, specialist's and master's degree programs, the group of STEM training lines/specialties was explicitly in the lead, amounting to 52.7%, 42.9% and 53.8%, respectively, in 2024 (*Fig. 11*). In other words, STEM training has already surpassed half of the overall admission to full-time education in bachelor's and master's degree programs, and was equal to 40% in specialist's degree programs. As for fee-based admission to full-time education, individuals invest in STEM training much less, focusing primarily on information technology. Individuals prefer training in socio-economic sciences and medical specialties. In 2024, fee-based admission to full-time education in socio–economic sciences in the bachelor's degree programs and the master's degree programs accounted for 51.6% and 52.9%, respectively, that is, more than a half (actually, individuals "mirrored" the situation with budget-funded admission to full-time education in the STEM group), while admission paid by individuals to socio-economic sciences in specialist's degree programs was equal to 22.7%.

As regards the specialist's degree programs, individuals are more focused on training in medicine, veterinary medicine and pharmacy: in 2024 admission in these training lines exceeded 66.8% of the overall fee-based admission to full-time education in the specialist's degree programs of Russian higher education establishments.

One may believe that individuals' choice is not in harmony with the strategic choice of the state: the government considers it most important to train engineering personnel and specialists in ICT and mathematics, while individuals are more focused on socio-economic sciences, including economics, management and law. However, budget-funded places in the STEM group of training/specialties are occupied by the same population, which thereby supports the government's choice. At the same time, training in engineering areas/specialties (as well as in medicine) is the most "expensive" one, so, the government, firstly, increases it largely in regions where it is less expensive owing to lower per capita funding ratios, three-quarters of which represent the cost of salaries of academic staff (AS), with these costs calculations based on the basic standards for 3 groups of training lines /specialties and adjusted for territorial coefficients as the salary of HEE academic staff is linked to the average salary in the relevant region. Consequently, the training of an engineer, for example, at a Voronezh-based higher education establishment will cost twice less as compared to Moscow. Secondly, by increasing admission to full-time education in engineering areas, the government will save money in other areas as the fe-

deral budget for higher education purposes is limited. Naturally, it is most "convenient" to save funds on those training lines/specialties for which the population is willing to pay. And, actually, the population is prepared to pay, first of all, for training in socio-economic programs and medicine (*Fig. 11*). Thus, having divided the "spheres of responsibility", the government and the population do not run counter to each other's choice, but complement it. In addition, the government also allocates budgetary funds for training lines/specialties in economics, management and law, financing primarily the leading HEE in these areas/specialties. This is justified by the fact that the reindustrialization of the Russian economy (facilitation of technological sovereignty) and its turn eastward require high-quality management and economic solutions, as well as effective legal support for economic activities, particularly, amid increased sanctions pressure (due to sanctions, businesses have to build new logistics chains, apply various mechanisms of cross-border trade and payments, secure access to other markets/countries for exports of Russian products and other).

At the same time, it is noteworthy that the growing budget-funded admission to the STEM group has already led to serious negative implications. Thus, seeking to fill budget-funded places, HEE enroll more and more applicants with low average USE scores. For example, in 2024 the average minimum score, with counting in additional tests of those enrolled to budget-funded places (financed from the federal budget) in state universities' bachelor's degree programs, amounted to: 44.2 points in the "Radio Engineering" field of training, 49.2 points in "Applied Hydrometeorology", 47.1 points in "Electric Power Engineering and Electrical Engineering", 49.0 points in "Information and Communication Technologies of Special Communication Systems", 41.5 points in "Chemical Technology of Energy-Saturated Materials and Products", etc. This has already led to a change in the methodology for calculating the Unified State Exam scores in physics in order to show more acceptable results for budget-funded places, but, actually, there is an inflation of Unified State Exam scores in this subject. In addition, in their education process HEE should either "reach out" to those students whose knowledge is low or inflate their own exam grades to prevent a high dropout rate. However, weak students, as a rule, cannot withstand the academic load and leave HEE themselves: calculations show that in Russia the dropout rate in engineering fields of training/specialties is equal, on average, to about 30%. If a weak student graduates from a HEE, the economy receives a weak specialist. As a further increase in the budget-funded training of engineers seems only to exacerbate this situation, in order to enhance the prestige of the engineering profession it would be advisable not to increase, but, on the contrary, reduce budget-funded admission and raise the average USE score for budget-funded places.

In 2024, state universities' bachelor's degree programs accounted for 94.5% of the overall (both budget-funded and fee-based) admission to full-time education and 99.5% of budget-funded admission to full-time education; specialist's degree programs, for 94.8 and 99.8%, respectively, and master's degree programs for 96.3% and 99.5%, respectively. As stated above, since admission in the STEM

group of training/specialties plays a leading role in budget-funded admission, the admission control figures for STEM are increasingly transferred to regional universities. At the same time, despite the government's policy, overall (both budget-funded and fee-based) admission to full-time education at state higher education establishments is explicitly concentrated in a very limited number of subjects of the Russian Federation. Thus, in 2024, state higher education establishments of Moscow and St. Petersburg accounted for 30.4%, 25.5% and 41.3% of the overall admission to full-time education in bachelor's degree programs, specialist's degree programs and master's degree programs, respectively (*Table 7*).

Table 7

Admission to full-time education in state higher education establishments of Moscow and St. Petersburg, %

	Moscow	St. Petersburg	Moscow + St. Petersburg
Bachelor's degree program			
Overall admission to full-time education	20.6	9.8	30.4
Admission to full-time education at federal budget expense	15.4	8.1	23.5
Fee-based admission to full-time education	29.7	12.9	42.6
Specialist's degree program			
Overall admission to full-time education	17.1	8.4	25.5
Admission to full-time education at federal budget expense	18.3	9.6	27.9
Fee-based admission to full-time education	15.8	7.2	23.0
Masters' degree program			
Overall admission to full-time education	29.1	12.2	41.3
Admission to full-time education at federal budget expense	22.7	13.0	35.7
Fee-based admission to full-time education	42.2	11.0	53.2

Source: Form No. VPO-1 "Information on an entity engaging in educational activities in higher education programs: bachelor's degree programs, specialist's degree programs, master's degree programs." URL: Higher Education (minobrnauki.gov.ru); own calculations.

Moderation of admission to full-time education at the federal budget expense in HEE of Moscow and St. Petersburg led to an increase in the unit weight of fee-based admission to full-time education, which in 2024 amounted to 29.7% and 12.9% in the bachelor's degree programs of Moscow-based HEE and St. Petersburg-based HEE, respectively (a total of 42.6%). As regards specialist's degree programs in HEE of Moscow and St. Petersburg, the unit weight of fee-based admission to full-time education was almost 2 times lower than in bachelor's degree programs (a total of 23.0%). At the same time, in 2024 fee-based admission to full-time educa-

tion in master's degree programs at state higher educational establishments of these two megacities amounted to 53.2%, i. e. more than half. Totally, in 2024 overall admission to full-time education in bachelor's, specialist's and master's degree programs in Moscow-based and St. Petersburg-based HEE amounted to 31.6%, closely approaching a third of the overall admission to full-time education in Russian HEE; in 2023 it was equal to 30.5%. Thus, over the year, the specified admission to HEE of Moscow and St. Petersburg increased by 1.1 p. p.

The unit weight of admission to full-time education in HEE in regions such as the Republic of Tatarstan or the Sverdlovsk Region (the 3rd and 4th places in terms of the unit weight of overall admission to full-time education (bachelor's degree + specialist's degree + master's degree) in HEE in 2023) is considerably lower as compared to HEE in Moscow and St. Petersburg. Thus, in 2024 the unit weight of overall admission to full-time education in to bachelor's, specialist's and master's degrees programs in HEE of the Republic of Tatarstan amounted to 3.6% of the overall admission to full-time education in Russian HEE (3.9% in 2023); in the Sverdlovsk Region it was equal to 3.2% and 3.1% in 2024 and 2023, respectively. In other words, the unit weight of overall admission to full-time education in state universities of the Republic of Tatarstan decreased slightly over the past year, while in the Sverdlovsk Region, on the contrary, increased a little.

In 2024, admission to full-time education at the federal budget expense in HEE in Moscow (bachelor's, specialist's and master's degree programs) accounted for 17.6% of the overall admission to budget-funded places in these levels of higher education funded from the federal budget; in St. Petersburg — 9.5% (a total of 27.1% for both capitals); in the Republic of Tatarstan — 4.0%; in the Sverdlovsk Region — 3.2%. In general, in 2024 the unit weight of admission to full-time education at the federal budget expense in bachelor's, specialist's and master's degrees programs in HEE of the four abovementioned regions amounted to 34.3%, that is, over one third of the total admission to full-time education funded from the federal budget at the specified levels of higher education.[1]

As regards fee-based admission to full-time education, the situation was even more concentrated in this respect. In 2024, higher education establishments of Moscow and St. Petersburg accounted for 39.3% of the overall fee-based admission to full-time education in bachelor's, specialist's and master's degree programs, while HEE of four regions (Moscow, St. Petersburg, the Republic of Tatarstan and the Sverdlovsk Region) accounted for 45.6%. Thus, in 2024, the unit weight of fee-based admission to full-time education in HEE of only four subjects of the Russian Federation approached nearly a half of the overall fee-based admission to full-time education in Russian HEE. In 2024, state higher education establishments of the remaining 81 Russian regions (without the new territories taken into account) accounted on average for slight-

1. It is to be reminded that postgraduate studies are still regarded as a level of higher education, but we do not consider admission to postgraduate studies funded from the federal budget or by individuals.

ly more than 0.8% of admission to full-time education at the expense of the federal budget and for about 0.7% of fee-based admission to full-time education.

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Personnel shortages in the Russian economy are actually unrelated to the structure of personnel training in the higher education system: on average, more than 75% of higher education graduates work in their specialty or their work is closely related to it. In other words, their education is in demand; a rare exception is the training of political scientists, only 60% of them have found a job in their specialty. The structure of personnel training at SVE institutions raises more questions, both in terms of training mid-level specialists and in terms of training skilled workers and employees (on average, 62% of MLS and 58% of SWE are employed in their profession, despite the fact that most SVE institutions receive state assignments from regional authorities and focus on training personnel for the needs of the relevant region's economy). The problem is that such a model is adequate only for a slow or stable economic development. As the pace of technological development speeds up, regional economies face the inertia of their education systems, which are also technologically weak, particularly, because of being underfunded for quite a long period. Consequently, the practice-oriented approach of the SVE system amid a sharp change in the vector of technological development is sooner a negative factor than a positive one. This is particularly evident when SVE students' general education base is narrowing, as it happens in specialist's degree programs (specialist's degree programs imply shorter training periods for quite a wide range of professions and specialties) which are meant to become a new level of vocational education. In principle, reduction of the training time for working professions, including those in the services sector (delivery, pakkaging, etc.) is a logical response to technological acceleration or drastic technological changes, but this measure should be based on other methodological approaches and educational technologies rather than those currently used. At the same time, it is necessary to envisage and ensure in advance for employees, who have received such a reduced education, a professional retraining to meet new requirements of a changing economy. This, in turn, suggests the formation of a strong general education foundation, that is, restructuring of not only vocational education, but also the general one. However, such changes in the education system have not been effective so far neither in Russia, nor in other countries, including the developed ones.

The transformation of the vocational education system should start with a different formulation of the task: technological sovereignty and import substitution require not only upgraded training of engineers and ICT specialists, but also higher labor productivity in the economy and the social sector as a whole. To achieve this goal, it is necessary to comprehend those (critical or advanced) technologies that the economy will be saturated with. Should these technologies be developed in Russia, it is necessary to start with training sectoral science personnel, but if technologies are

going to be borrowed, it is necessary to train teachers of higher education establishments and SVE institutions, as well as vocational training foremen in those countries from which these technologies are to be imported. Further, it is important to promote e-learning with engagement in the educational process educational institutions of those countries from which the relevant technologies arrive. At the same time, the entire chain should be built: secondary vocational education — higher education — professional retraining (rather than the development of additional vocational education programs which largely focus on skills upgrading in an existing profession/specialty). It is necessary to reduce admission to budget-funded places in STEM training lines/specialties. It is noteworthy that even in the USSR in the 1980s, the training of personnel in engineering and technical specialties did not exceed 30%-35%. In Russia, as it was noted, admission to budget-funded places has already exceeded half of the budget-funded admission in bachelor's and master's degree programs in the specified training lines/specialties, while the quality of this admission is increasing, if at all, due to a rather low starting level. At the same time, the dropout rate of students is picking up, as HEE do not have enough teachers for the growing contingent of students with insufficient training background.

In the past few years, there has been a growing concentration of general admission in a small number of regional higher education systems. At the same time, the transfer of additional budget-funded places to regional HEE has already led to discernable growth in fee-based admission to HEE of Moscow and St. Petersburg. In these two megacities, even strong students (with an average USE score of over 80 points or even 85 points) have to study in most cases on a paid basis, while in regions with average USE scores of 41–45 points they can study free of charge. Even if we assume that the flow of high-scoring students to Moscow will decline, with the socio-economic situation becoming more complicated in the country, and strong applicants will be more active in getting enrolled in regional HEE, including on a paid basis, such a change is likely to lead, on the one hand, to a decrease in the quality of training, and on the other hand, to a decline in the financial stability of major Moscow-based HEE, particularly the ones of socio-economic profile.

4.4. The housing market in Russian cities and housing construction[1]

2024 marked the end of the active growth for the Russian real estate market and the transition to the phase of expected slowdown.

The well-established mechanism of state support for mortgages, which stimulated demand, was subjected to a double squeeze: the government's radical modification of preferential programs and the Bank of Russia's continued increase in the key

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