

Factors shaping human capital in rural areas

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Abstract. Human capital is a vital category of the economy in order to achieve economic stability. The combination of certain personal, social, professional business skills, abilities and motivation help to increase the efficiency of production in the rural areas.. The goal of this publication is to analyze and explore some factors of human capital formation in rural areas. The study covers demographic trends, educational attainment, technological changes, availability of health facilities in rural areas. On the basis of the analytical part of the report, conclusions are drawn on the potential of human capital to achieve a sustainable and stable rural areas.

1 Literature review of the notion of human capital

The expressed interest in the consideration of human capital stems from its importance as knowledge, skill, competence of the individual. As one of the main economic topics, human capital is of key importance in the development of the economy and its competitiveness. There are different definitions of human capital, each of which emphasises different characteristics of human capital.

In English dictionaries, human capital is defined as "the skills possessed by a workforce and regarded as a resource". It encompasses the idea that investment in people (e.g. education, training, healthcare) leads to an increase in the productivity of the individual. [1]

Some authors define human capital as the set of intelligence, skills and experience that are used to achieve the set goals in the organization. The particular person possessing these qualities is an indispensable internal factor in the organization. Training throughout the life cycle, changing environment, rapid entry and innovation, strong motivation are important factors for the proper functioning and long-term survival of the company [2]

Becker defines human capital as the aggregate of an individual's knowledge, information, ideas, skills, and health. According to the comparison he gives in his scientific work, he defines the three main capitals - human capital, financial capital and physical capital - as assets that yield returns and other useful results over long periods of time. At the same time, he differentiates human capital from financial capital by the fact that an individual cannot be separated from his skills, health and values, whereas in the case of financial capital, a person can be separated from his financial assets - cash or real estate. [3]

The authors Namasivayam and Denizci complement the definitions of other researchers in the field of human capital by including two qualities of the individual - his creativity and his psychological state in certain situations. [4]

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According to Schultz, education and training are vital tools for improving the capacities of production. Moreover, he considered investment in human capital as criteria for raising educational attainment. [5]

The definition that Shishmanova gives for human capital is associated as a set of characteristics such as knowledge, creativity, innovation and energy that people invest in their work. [6]

Human capital is an investment in human resources in order to increase their efficiency. In fact, the cost of this investment is provided for future use. Therefore, the learning organization chooses the investment in individuals because people are valuable human capital with different qualities (Burund & Tumolo, 2004). [7]

Human capital is a set of skills that a workforce possesses. The flow of these skills is imminent when the return on investment exceeds the cost (direct and indirect). The returns to these skills are private in the sense that an individual's productive capacity increases with more of them. But there are often externalities that increase the productive capacity of others when human capital is increased. [8]

In his scientific work A. Kazakov identifies human capital as purposeful educational - qualification and other influences that directly affect the human individual. He also adds that the formation of human capital with certain quantitative and qualitative characteristics is accompanied by investments. [9]

The goal of this publication is to analyze and explore some factors of human capital formation in rural areas. The analysis focuses on the three main components of human capital: education, training and health. Research is done related to the demographic potential of rural areas, the level of education and related activities, health facilities and the receipt of health care, and the competencies of rural residents related to the use of computers and the Internet. Thus, consideration of the role of education, health status and lifestyle in the context of today's well-established trend of globalisation of the economy and the decisive penetration of information and communication technologies usually refers to human capital theory.

2 Demographic potential of rural areas

The Republic of Bulgaria has an area of 110,879 km², as the population at the last census in 2021, according to the National Statistical Institute (NSI), was 6,519,789 people, with an uneven distribution across the country's territory in a total of 5,301 settlements - 256 towns and 5,045 villages. The territory of Bulgaria consists of six statistical regions (NUTS 2 level), 28 administrative districts (NUTS 3 level) and 264 municipalities (LAU 1). Bulgaria's rural areas cover an area of 24 387,90 square kilometres, which is equivalent to about 22% of the country's total area. Compared to intermediate municipalities, rural areas occupy 28% less territory. The statistical indicator used, population density, shows the density of population per unit area. Compared to this, rural areas have 27.1% people/km², which shows the huge difference to the national average density of .63.9 people/km². The definition used to define a rural area in Bulgaria is "rural areas are municipalities (LAU 1) in which there is no settlement with a population of more than 30,000 people".

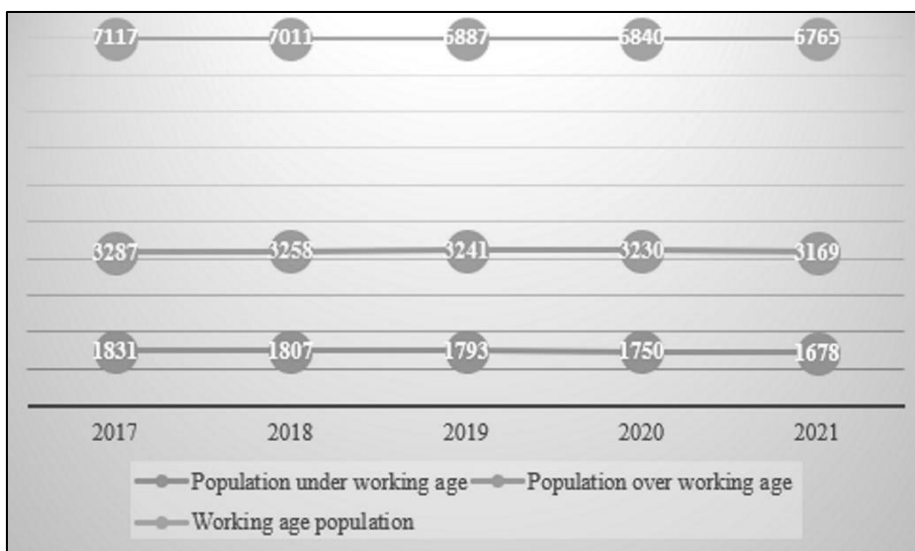


Fig. 1. Population change in, over and under working age.

Relative to the data in Figure 1, the working age population in nominal terms decreased relative to the survey period from 4750606 to 4468503 or by 9.4% (2017-2021.) A small increase was seen in the over working age population from 1705032 to 1755638 i.e. 1.2% and those under working age decreased by 2.9%. Persons living in rural municipalities of working age saw a decrease of 13.8%, and in the remaining municipalities by 9.7%. During the study period, the population over working age in rural areas is 42%, aging persons increased by 9.2% over the period (2017-2021). The population under working age in rural areas decreased by 8.9%, more than the other municipalities. The decrease in this indicator can be explained by several reasons:

- Depopulation of areas.
- migration processes outside small settlements.
- low birth rates.

3 School education level

One of the most important qualities of human capital is mainly associated with the education received and its quality. The use and implementation of technological innovations, the development of an economy, rapid adaptation are directly identified with human capital. Over the last few years, there has been a positive trend in increasing the number and share of the population with tertiary and secondary education, while at the same time reducing the number of people with primary and lower education. Obtaining a degree has the following advantages:

- appears to be a prerequisite for employment of the population.
- obtaining higher incomes.
- achieving a better quality and standard of life for the population.
- reducing the risk of poverty and social exclusion

In Bulgaria, school education is divided according to the level of education into primary and secondary, and according to the content of training into general and vocational. Educational institutions in the country are divided according to the level of education - pre-school (kindergartens), general and special schools (primary, elementary, high schools, secondary vocational schools of arts, sports schools, vocational high schools, vocational

colleges, vocational training centres and higher education institutions). There is a wide disparity between rural and urban areas, where there is a drastic disparity in terms of educational attainment. In spite of the small number of students and the greater attention paid by teachers to students, attention needs to be paid to schools in rural areas as a condition for achieving balance in education and achieving and ensuring high achievement among students.

The attainment of a level of education is already possible in pre-school education, which is compulsory before first grade. It provides conditions for early childhood development and preparation of children for school (from 3 to 6 years of age). The number of children in kindergartens in rural areas in Bulgaria for the period 2021/2022 is 41288. Compared to the first survey period 2017/2018, there is a large difference between the total number of children attending kindergartens. For the period 2020/2021 compared to 2021/2022, the total number of children in kindergartens has changed by 0.81 percent. There is a decreasing trend which continues throughout the period. Within the next few years this negative trend will be maintained. In comparison between full-day groups and half-day groups in rural areas, there has been an increase in children attending full-day groups in kindergartens. In 2017/2018, the highest proportion of children attending half-day groups was 4193. The period with the highest attendance of full-day groups is 2019/2020 - 39228 children (Table 1) [11].

Table 1. Children enrolled at kindergartens.

	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Total	43184	42943	42732	41629	41288
At all-day groups	38991	39053	39228	38160	38029
At half-day groups	4193	3890	3504	3469	3259
Of which in private kindergartens	57	90	115	107	125

In the periods studied, there was a large disparity in children in kindergarten and preparatory groups in schools in urban and rural populations. Although there has been some reduction in the number of children in urban areas, the trend and reduction is not appreciably drastic and the change from 2017/2018 to 2021/2022 is only 2.30 percent. The average number of children in rural areas has also declined over the period under review. A review of the data shows a marginal reduction in both indicators. The most significant decline is observed at the beginning and end of the study periods in both categories. The change in children in rural kindergartens for the 2020/2021 and 2021/2022 periods show a 0.7% difference. The total number of children in both urban and rural kindergartens and preparatory groups in schools follow the negative trend, with relatively lower rates of decline. This leads to a territorial separation, where in some localities it would be necessary to grow new kindergartens and in others to close them.



Fig. 2. Children enrolled at kindergartens and preparatory groups at schools.

In the period 2021/2022, there is a marginal reduction of teaching staff (including principals and vice-principals with teaching employment) with higher education - Bachelor and Master in general education schools by 0.22% in rural areas compared to 2020/2021. The low difference between the two periods is due to the increase in incomes, the improvement of material and technical facilities and the improvement of the general working environment. An increase in the percentage difference can be attributed to one main reason - migration processes from villages to large cities offering greater opportunities for career development. With the highest relative share of teachers throughout the study period is 2020/2021 - 3545 teachers. There is also a negative trend for teachers with both a university degree - professional bachelor's degree and secondary education. The teaching profession is dominated by women - 86.2% of the total number of teachers. The most common age limit of a teacher is over 60 years of age, followed by 10,061 are between the ages of 55 and 59, 9,456 are between the ages of 50 and 55, and 8,592 are in the 45 to 49 age group [12].

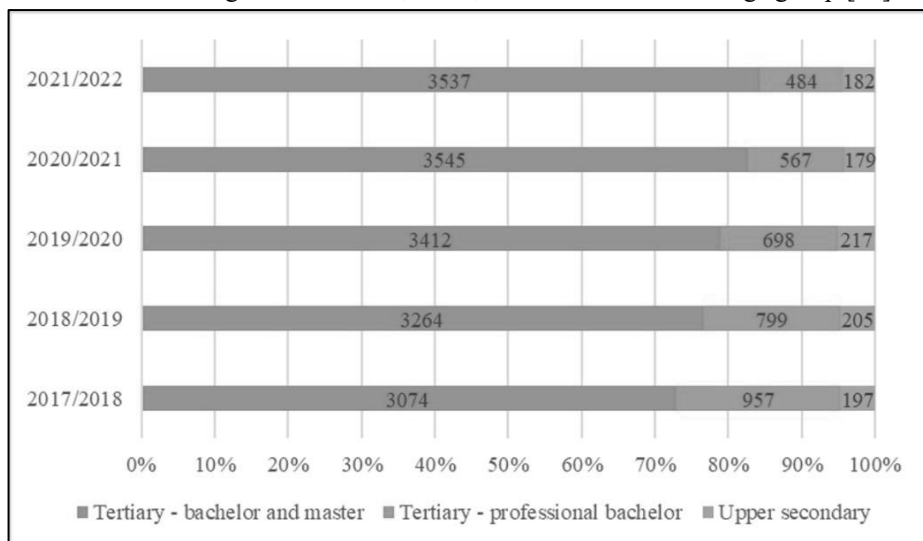


Fig. 3. Teaching staff in kindergartens by level of education completed

The institutional structure by 2022, according to the NSI data on general education in the country, includes: 127 primary schools (grades I - IV), 1128 elementary schools (grades I - VII), 75 integrated schools (grades I - X), 116 high schools (grades VIII - XII) and 496 middle schools (grades I - XII). During the period under review, there were also 99 private schools located in the major urbanized cities of the country. There are 875 general schools in rural areas in 2017/2018 and 851 in 2021/2022. A drastic reduction is seen in primary and elementary schools. A positive trend is observed in integrated schools where the increase from 2021/2022 to 2017/2018 is 20% and in secondary schools where the increase is 7.14% for the same period. Secondary schools have been maintained with the lowest relative share in 2018/2019.

Table 2. General-education schools by type.

	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Total	875	865	864	853	851
Primary (I - IV grade)	45	43	42	40	37
Basic (I - VII grade)	717	703	698	689	684
Integrated (I - X grade)	46	54	56	55	58
Upper secondary (VIII - XII grade)	2	1	2	2	2
Secondary (I - XII grade)	65	64	66	67	70

The rural municipalities have the highest relative share of students from I - IV grade - 39283 for the period 2021/2022. With the least are the children studying passed in VIII - XII grade only - 5405 for the same period. For the period 2018/2021, there is a positive trend in children studying in general education schools by group in VIII - XII grade. A review of the data shows that the children as an aggregate from the period 2017/2018 to 2021/2022 have decreased by approximately 13 percent. This negative trend is also visible in other groups by class. The number of male students overall are 8.64 percent more compared to female students. In absolute terms, the most significant decrease in the number of male students was observed in the group of Grade I - IV 20522 compared to the first survey period. The female students maintained the trend at a declining rate in all the education votes. The most significant decline is also observed here I - IV grade. The change from the beginning of the period to the end is approximately 17.19 percent[15].

Table 3. Students enrolled at general-education schools by grade groups and sex.

	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Total	90238	86142	82534	79624	78618
I - IV grade	47074	44834	42063	39717	39283
V - VII grade	37261	35122	34360	33759	33930
VIII - XII grade	5903	6186	6111	6148	5405
Male	47118	45119	43065	41492	41085
I - IV grade	24416	23383	21892	20654	20522
V - VII grade	19860	18725	18213	17817	17943
VIII - XII grade	2842	3011	2960	3021	2620
Female	43120	41023	39469	38132	37533
I - IV grade	22658	21451	20171	19063	18761
V - VII grade	17401	16397	16147	15942	15987
VIII - XII grade	3061	3175	3151	3127	2785

4 School education level and Health facilities in rural areas

The quality of life in rural areas is also influenced by another factor, namely access to health services and the development of health infrastructure. The policy that is set out in the National Health Strategy 2020 aims to do just that, increasing and developing the health network, ensuring easy access to health facilities and obtaining quality healthcare. The health system consists of several subdivisions:

- Primary health care, which is specialized out of hospital care i.e. individual practice of doctors - personal and specialists,
 - Specialized out-of-hospital care which includes a wide range of medical facilities, dentists, medical and diagnostic consultative centers, dental centers, medico-diagnostic, etc.
- The total number of medical institutions in the country is 341, including 179 multi-specialty hospitals and 140 specialty hospitals. Most of them are located in settlements which are municipal centres of rural municipalities. The number of beds in hospital care facilities is 54707 (2022).

5 Conclusion

The adverse trend of continuing population decline both nationally and in rural areas remains relevant. There are numerous reasons for the decreasing population in rural areas. The natural and mechanical relocation of the population, the processes associated with migration from villages to towns within rural areas and from rural areas to industrially and economically developed towns and areas continues, this movement applies to persons of working age. Processes such as (low birth rate, negative natural increase) also have an impact on population density in rural areas. Fragmented rural areas, not correct and not even distribution of population in rural municipalities also outlines risks for the future distribution of labour resources. Declining fertility rates and the number of live births have an impact on natural increase. The secondary impact of this negative trend is an increase in demographic disparities and a rise in the population over 65. The causes of the mechanical movement of the population from small settlements to cities are mainly linked to the lag in the socio-economic development of small and medium-sized municipalities compared to urbanised and economically developed areas and the lack of realisation on the labour market[10].

The rapidly developing world, growing big cities, require adequate changes related to the preservation of small settlements, maintaining the number of schools, increasing the number of students studying in rural areas, improving health infrastructure. Changes related to demographic factors give rise to the need for more skills and competences, a sensible approach, adequate decisions on the part of the government in order to preserve and develop rural areas in Bulgaria. There is an urgent need for a change in political conjuncture.

Small settlements are facing a number of challenges and trends that affect future development. To address these challenges, it is important that the Bulgarian government and the rural areas invest in technology, infrastructure and training and focus on improving the quality of life in small settlements.

The changing environment and modern society require changes related to ensuring stable income, easier access to small settlements, and access to quality education and health care. In order to achieve these goals, more skills and competences, a reasonable approach, adequate solutions are needed. In the periods studied, there was a large disparity in children in kindergarten and preparatory groups in schools in urban and rural populations. The total number of children in both urban and rural kindergartens and preparatory groups in schools follow the negative trend, with relatively lower rates of decline. This lead to a territorial separation, where in some localities it would be necessary to grow new kindergartens and in others to close them. Improvement in the level of education in rural areas, improved

educational infrastructure would lead to reduction in rural-urban disparities. Improving the conditions for receiving education would also have a limiting effect on the depopulation conditions in small settlements [13].

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