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EDUCATION IN RURAL AREAS – A STATISTICAL APPROACH

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Abstract: *An overall picture of the education system in the countryside reveals that there are still schools that are not connected to the drinking water and sewerage systems, where the toilet is in the school yard. There are still schools where children stay in classrooms dressed up with outdoor clothing in winter, with caps and gloves, due to inadequate heating and outdated school infrastructure. The simultaneous learning system is still in place (due to the relatively small number of enrolled pupils, which is steadily declining); this system does not benefit pupils, on the contrary, as these do not have the full attention and guidance of the teacher, as is the case in normal classes, they fail to acquire knowledge and skills, like those who study in the normal system, and thus they are disadvantaged. Due to the misunderstanding of the major importance that education has in personal development of individuals and of society implicitly, there are not few schools that do not benefit from funding, support or interest from local councils. The local councils do not provide support either in terms of ensuring adequate infrastructure for a quality education or at least comparable to that in the urban area – clean classrooms, endowed with specific equipment for each subject of study, equipped with utilities (heating, indoor toilets, water), or in terms of supporting teachers in rural areas who do not have the residence there (by paying for transport, for instance). Local councils do not find or are not interested in finding levers to attract teaching staff in rural localities. In this context, the present paper aims to analyse the current situation (latest data available) of education in the rural area, using specific indicators, in terms of the education system resources and population's participation in education, such as: participation rate in education, school population, by levels of education and residence areas, classrooms/laboratories/workshops/gyms/sports fields/PC/IT equipment, by levels of education and residence areas, number of graduates by levels of education and residence areas.*

Key words: *education, disparities, residence areas, rural, urban*

JEL Classification: I21, I24, I25, R10

INTRODUCTION

Over the years, rural education has been in the focus of authorities, the existing gaps between education in the urban and rural localities have continuously deepened, and thus, from the very start, rural people are in a disadvantaged position in future access to labour market, compared to urban population. All these, despite the fact that one of the fundamental objectives in terms of equity is to reduce the gaps between the learning opportunities provided to disadvantaged groups, compared to those provided to the majority. Although according to the Educated Romania Report, from the year 2021, “the state offers national support programmes for the pupils and students from disadvantaged areas”, the measure of the Minister of Education adopted at the beginning of the school year 2022/2023 (Order no. 5379/2022 for approving the General Criteria of awarding scholarships to pupils from pre-tertiary education) has as consequences the deepening of already existing gaps between the urban and rural areas – which directly affects pupils from the rural area, who need to go to high-school/vocational school in another locality, as they do not have such an educational establishment in the locality of residence. Thus, the right of each pupil to have equal chances of access to quality education is violated, regardless of their place of residence or social background.

The evaluation of the education system situation cannot be made in the absence of a context analysis, based on precise, quantifiable criteria, on primary and derived indicators. The present study analyses the current situation of the Romanian education system (in the school year 2021/2022) and the

main trends in the period 1996/1997 – 2021/2022, from the perspective of the education system resources and of population's participation in education, through the descriptive analysis of indicators and causal analysis. The indicators concerning the resources of the education system take into account the human resources (number of teaching staff, by levels of education and residence areas) and the material resources (number of educational establishments, by levels of education and residence areas, material base of educational establishments: number of classrooms, gyms, laboratories, school workshops, equipped sports fields, swimming pools, computers, Internet connection). As regards the participation in education, primary and derived indicators were analysed (school population, number of graduates, degree of inclusion in education, by training levels and residence areas, etc.), to complete the picture of the education system situation.

MATERIAL AND METHOD

One of the methods used to prepare the raw analysis material was the custom query of available official databases, followed by author's own processing.

The statistical analysis uses primary and derived indicators included in the National System of Education Indicators (NSEI), compatible with the international systems of indicators (European statistical system EUROSTAT, OECD, UNESCO, World Bank system). The set of indicators selected for this analysis was calculated both at national level and by each residence area, by levels of education (ante pre-school, primary, lower secondary, high-school, vocational, post-high school and foremen education, higher education). For the calculation of indicators, we used data from Tempo Online database and from specific publications concerning education of the National Institute of Statistics (NIS). National reports, strategies and plans of action concerning education have been consulted. For documentation purposes, the national and international literature, various studies and analyses of economic institutions of national and international reputation, represented useful benchmarks. Information contained in various statistical surveys, analyses, reports and non-official studies, as well as in regional development strategies, were also used.

Another method used in this study was filtering, collection and analysis of complementary information (Internet, written publications).

RESULTS AND DISCUSSIONS

Current situation of the Romanian education system – disparities by residence areas. In the period 1996-2021¹, as the education system was coordinated by a succession of ministers (27), each with their own vision on the future of Romanian education, more or less constructive and innovating, this was subject to restructuring without much coherence and correlation, from one ministerial period to another.

The latest available data² outline a clear picture on the present education system, both in terms of the participation in the educational process (its beneficiaries), of the resources involved in the educational process (material resources – educational establishments and human resources – teaching staff), as well as in terms of current infrastructure.

¹ data available in Tempo Online database

² for certain indicators – the school year 2020/2021, for other indicators – the school year 2021/2022

The restructuring of the education system and the new regulations in this field led to the reorganization of the network of education establishments in Romania. Thus, in the investigated period, the number of educational establishments decreased more than 4 times at national level, the most significant decline being noticed in the rural areas, where the decrease was almost 7 times.

By levels of education, the most dramatic situation can be noticed in the ante pre-school and pre-school education (nurseries, kindergartens). While at the beginning of the analysed period, i.e. 1996, there were 12,951 ante pre-school and pre-school educational establishments in operation, their number continuously decreased, the decrease rate accelerating after 2004, when their number was down to less than half, and ten years later there were only about 1200 establishments left, this number being maintained until the school year 2021/2022. The previously mentioned situation of ante pre-school and pre-school education units, at national level, can be also noticed in the rural areas, yet the situation is more dramatic in this case: while at national level, in the year 2021, there were about 10% of the number of ante pre-school and pre-school education units, in the rural area there were only 1% of the number of existing units at the beginning of the analysed period.

The diminishing trend of the number of education units can be explained by the fact that several schools or kindergartens/nurseries were merged or closed down, due to the increasingly reduced number of pupils, mainly in the rural area.

This trend is complemented by the continuous decline of the school population, both at national level and by the two residence areas.

Yet, in the last school year, 2021/2022, the school population in the national education system increased by about 1200, compared to the previous school year. By *residence areas*, this increase of the school population is due to the increase of school population in the rural area (by 5600 persons) and the diminution of school population in the urban area (by 4500 persons). The distribution by *levels of education* reveals the increase of school population in two educational levels – in ante pre-school and pre-school education (by 3.3% at national level, 4.1% in the urban area and 2.1% in the rural area), and in primary and lower secondary education (by 1.3% at national level, 1.8% in the urban area and 0.6% in the rural area).

At the beginning of the analysed period, there were 4.69 million children enrolled in Romania's education system; 25 years later, their number decreased to 3.49 million. Thus, in the school/university year 2021/2022, at national level, the school population represented only three quarters of the school population at the beginning of the investigated period.

The dynamics of the school population and its distribution by *levels of education*¹ shows small decreases in the ante pre-school and pre-school education (around 20%) in the investigated period, compared to the other educational levels, where the temporal changes are extremely important, revealing a significant decline: in vocational training (decrease by almost two-thirds), followed by primary and lower secondary education (decrease by about one third) and high school education (decrease by one quarter of the school population in this level of education at the beginning of the investigated period). Although the revitalizing and reinventing vocational education and training has been debated for quite a long time, as a solution to many of the problems in the labour market, it still does not enjoy the expected success, on the contrary.

Unlike this negative evolution, yet far from being the most positive evolution, the school population in the post-high school and technical foremen education has significantly increased;

¹ the distribution of children/pupils/students by areas of residence (urban/rural) is based on the geographical location of school units and not on their domicile or residence

although this does not have a high share in total school population (only 2.6% in 2021/2022), the number of pupils in this level of education being up by almost one quarter compared to their number at the beginning of the analysed period.

The analysis by *residence areas* reveals negative trends, much stronger than those at national level and in urban area (that are quite similar to those nationwide). In the school/university year 2021/2022, the rural school population represented only two-thirds of the rural school population at the beginning of the investigated period, both overall and in almost all levels of education. The most dramatic situation can be noticed in the school population enrolled in vocational training, which in 2021/2022 accounted for only one third of that at the beginning of the investigated period.

In the school year 2021/2022, out of total school population, only slightly over one third came from rural areas. The correlation between the distribution of school population by residence areas and levels of education reveals that the share of rural population is more significant (having about the same structure as that of total population, by residence areas) in primary and lower secondary education (with 42.2% of total school population in this level of education) and in ante pre-school and pre-school education (with 40.2% of total school population in this level of education). On the other hand, in the other levels of education, the share of rural school population is low – the rural population enrolled in vocational training being 13.9% in the rural area and almost insignificant in the school population enrolled in high school education – 6.1% and in post-high school education and technical foremen education – 2.5%.

The distribution by *levels of education* reveals that almost half of the school population was enrolled in primary and lower secondary education, the remaining being distributed, almost in equal shares, between high school education, tertiary education and ante pre-school and pre-school education (only 5.6% of school population being enrolled in post-high school education and vocational training) (Figure 1).

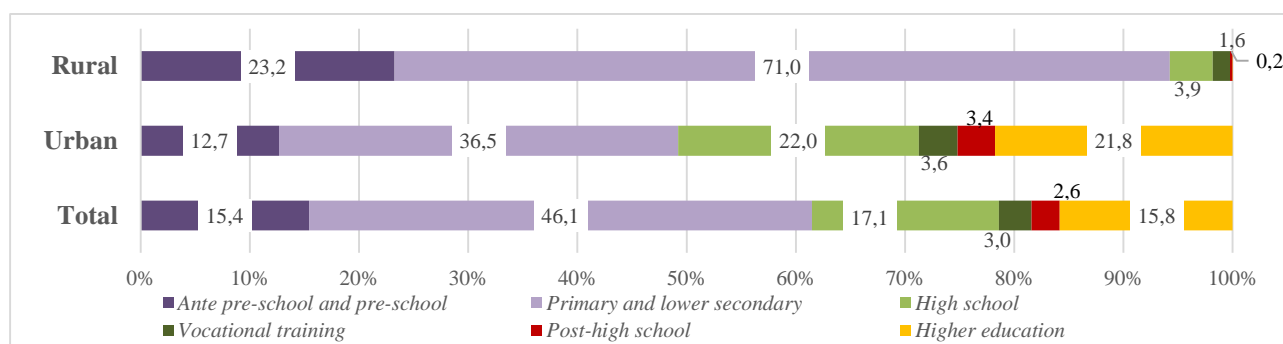


Figure 1. Share of school population, by levels of education and residence areas, in the school year 2021/2022

Source: NIS, Tempo Online, author's own processing

By *residence areas*, a differentiation in this distribution can be noticed – while the urban area has a distribution similar to that at national level, in the rural area the situation is different, the largest part of the school population (almost three quarters) being enrolled in primary and lower secondary education and about one quarter in ante pre-school and pre-school education.

There are multiple reasons for the overall decline of school population, but the main factor is the demographic decline, both nationwide and by residence areas. Thus, the evolution of demographic phenomena (number of live births, birth rate, number of child emigrants) provides for a continuation and an aggravation of the declining trend of young population, aged 0-19 years, with obvious consequences on the education system as well, by school population decline. Thus, the

continuous diminution of the number of live births (by more than 50 thousand, in the investigated period – the lowest level in the last 25 years being noticed in the year 2021), of the birth rate (from 10.1‰ live births in 1000 inhabitants, in 1996, to 8.2‰, in 2021), as well as the massive emigration of population, of children implicitly, in the investigated period (more than 107 thousand children aged 0-19 years permanently emigrated¹ from Romania, which adds to the temporary emigrants²/those who de facto went abroad, with their families, over 547 thousand) are the determining factors of the young population decline, with implications not only on the demographic situation (imbalanced age structure of the population), but also on the social situation.

In order to obtain a most complete picture of the situation of the education system, of the dynamics and trends manifested at the level of various correlated characteristics, derived indicators have been also used in the analysis, along with primary indicators.

One of these is the gross enrolment rate in education at all levels, which represents the number of school population, regardless of the level of education in which it is included, as percentage of the total resident population of school age (corresponding to all levels of education)³. Thus, in the school year 2021/2022, 72.1% of the population of school age (0-23 years) was included in a form of education. Significant disparities can be noticed by residence areas, the gross enrolment rate in the rural area being almost 3 times lower than that in the urban area. The values of this indicator, both nationwide and by residence areas, were maintained relatively constant.

The decrease in the general number of the school population is also found in the decreasing trend of the number of graduates, both nationwide and by the two residence areas. In the school year 2020/2021, the number of graduates totalled 477 thousand pupils and students, down by 7.5% compared to the previous school year. In the urban area, the graduates of the lower secondary school accounted for about 60% of total graduates at this level, while only 40% of graduates were from the rural area.

In the period 2002/2020, a significant trend was noticed in vocational training (the number of graduates representing only 30% of that of primary and lower secondary education, where the number of graduates at the end of the investigated period was less than half of that from the beginning of the investigated period. The diminution of the number of graduates was also noticed in the case of high school education, yet to a lower extent.

A downward trend, similar to that mentioned before, of school population, is also noticed in the number of teaching staff from the education system. At national level, in the school year 2021/2022, there were 238 thousand teaching staff, slightly increasing compared to the previous year, but less by one quarter compared to those existing at the beginning of the analysed period.

The distribution of teaching staff, *by levels of education*, reveals that, at national level, out of total teaching staff, almost one half is found in the primary and lower secondary education (special education inclusively), slightly more than one-fifth in high school education, 16% in ante pre-school and pre-school education, 11% in tertiary education. The lowest shares of teaching staff are found in vocational training and education and in the post- high school and foremen education.

By residence areas, there are also significant discrepancies in the distribution of teaching staff. While in the urban area, the teaching staff has a similar distribution to that at national level, in

¹ according to NIS, Tempo Online official data: permanent emigrant – Romanian citizen who established his/her permanent domicile abroad;

² temporary emigrant – person who emigrates to a foreign country for a period of at least 12 months.

³ the population segment 0-23 years was considered (age group that, theoretically, covers all persons that can be included in a form of education, from ante pre-school and pre-school to higher education).

the rural area the largest share of teaching staff – more than three quarters of total – works in primary and lower secondary education (including special education), followed by ante pre-school and pre-school education (17%) and high school education (5%) (Figure 2).

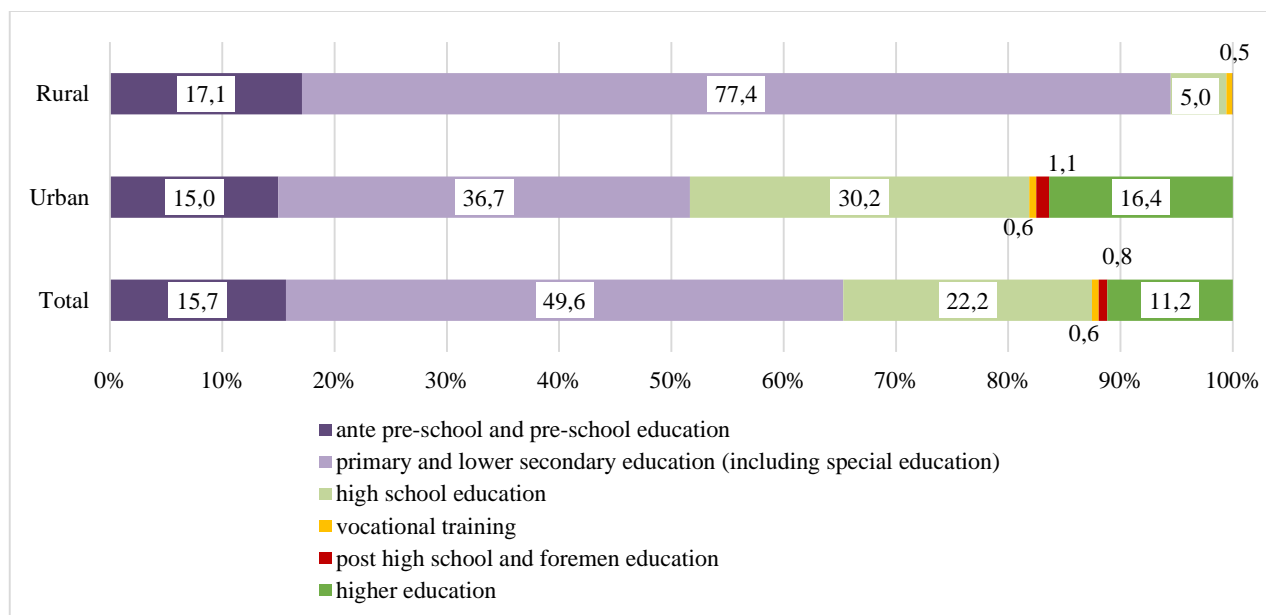


Figure 2. Distribution of teaching staff, by levels of education and residence areas, in the school year 2021/2022

Source: NIS, Tempo Online, author's own processing

The increasing trend of school population in certain levels of education (ante pre-school and pre-school, primary and lower secondary education), in the in the school year 2021/2022, compared to the previous year, may be considered as a beginning of revitalisation. The same trend is also noticed in the evolution of the teaching staff, from these types of education.

The differences by residence areas in the distribution of teaching staff have been reduced, but the rural area is still at a disadvantage in this respect.

The average ratio of school population per teaching staff, derived indicator of human resources in education, had an oscillating evolution, both nationwide and by residence areas, in each level of education. Thus, there were 15 pupils/students per teaching staff in the school year 2021/202; the gap between the two residence areas was maintained, like in the case of the other analysed indicators (there were 16 pupils/students per teaching staff in the urban area, and only 13 pupils/students per teaching staff in the rural area).

Compared to the previous school year, the number of pupils per teaching staff remained relatively constant in most levels of education; only in vocational training the number of pupils per teaching staff increased, while in the post-high school and foremen education the number of pupils per teaching staff decreased.

Over the years, the analysis reveals major disequilibria in vocational training and post-high school and foremen education, as result of re-organisation measures implemented in the education system. Thus, in the school year 2009-2010, the places intended for vocational training were transformed into places for vocational and technical high schools, and the school enrolment rate in high school education increased, by taking over the places from the schools of arts and crafts, the latter being abolished.

This measure determined a disequilibrium between these levels of education, mainly in the case of pupils included in this education segment, who were unable to continue their studies due to the new conditions¹ and abandoned school. Although later on, the measure of re-establishing the vocational training courses (since 2011) intended to support and bring back this training level in the education system, pupils and their families continued to be less confident in the system, which generated confusion.

By *levels of education*, in the school year 2021/2022, high school education continued to have the lowest ratio of pupils per teacher (11 pupils/teacher), at national level. This indicates that the measures regarding human resources in education and their training, as well as the diminution of the school network in the rural area must take into account to a larger extent the current differences in the education system, in terms of average number of pupils in class.

At the same time, in another time segment, following the measure to introduce the preparatory class in primary education, the number of children/kindergarten teacher decreased.

The residence area continues to be an important factor of differentiation of this indicator values. In the school year 2021/2022, the number of pupils/teaching staff is significantly higher in the urban area than in the rural area (16 children, compared to 13 children per teaching staff). In the primary and lower secondary education, this ratio is reversed, and the value of indicator is higher in the rural area. The difference by residence areas, in lower secondary education, has remained constant compared to the previous year.

CONCLUSIONS

The existing gaps in terms of education by the two residence areas, between those who have and those who do not have access to resources, have continued to grow larger, so that from the very start the rural people are at a disadvantage in future access to labour market, compared to the urban people. The educational inequalities between the residence areas, in terms of access and participation in higher levels of education of school population, as well as in terms of (human and material) resources of the education system, further highlight that belonging to the rural area has become a stigma for many children coming from this area of residence. Limiting the right to education by not ensuring the necessary levels for real participation in all the forms of education and training makes belonging to the rural area be associated with major disadvantages² - rural children/young people's access to education at levels 3, 4, 5 or 6 (ISCED) is almost absent: out of total school population, only 4.1% of children from the rural area end up attending high school (school year 2020/2021). However, the reported number is that of pupils from high schools in the rural area. There are also pupils from the rural area who study in the high schools from the urban area, and hence these are reported by the high schools in the urban area. A more obvious situation in this sense is noticed in the tertiary education.

One of the factors that lie at the basis of school performances is the average number of pupils per teaching staff, indicator that reveals the quality of education. In this sense, the analysed data reveal significant differences between the two residence areas, to the disadvantage of rural areas.

¹ mainly because families could not cover the costs of 4 years of schooling, which is a noticeable phenomenon in the case of rural pupils in particular, in the conditions in which the high school network is weakly developed compared to the urban area – as specified in the National strategy for the protection and promotion of children's rights for the period 2014-2020.

² the situation is different for the rural areas in the proximity of urban areas, yet with no precise data, due to the multiple rural/urban residences.

Furthermore, as the education establishments in the rural area tend to have fewer pupils and smaller classes, the attractiveness for highly qualified personnel is limited.

The abolition of a level of training, i.e. vocational training, has created significant imbalances in the education system, with noticeable effects on the labour market.

The correlation of the factors determining imbalances in the education system requires the prioritization of actions at national and local level, in terms of education, understanding the importance of education and its role for the entire society and, implicitly, an assumed restructuring.

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