# DEMOGRAPHIC PROJECTION OF THE EDUCATION LEVEL OF THE ROMA POPULATION IN BULGARIA (2020-2050)

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### **ABSTRACT**

Education is one of the main indicators of the social status of a population group in modem and postmodern societies. According to "Education: the situation of Roma in 11 EU Member States" (2014) only 1/2 of the male Roma teenagers and just 1/3rd of the female Roma teenagers in Bulgaria aged 15-18 attended school (compared to 9/10 of Bulgarians). The projection of the attained educational level of the Roma population of Bulgaria aged 15+ years has been elaborated in two scenarios: 1) the so-called "base scenario" which stipulates that the current educational status and trends of the Roma population, the ethnic Bulgarian population and the total population of the country, will be maintained in the long term; 2) the so-called "integration in the education system scenario", which assumes a possible significant improvement of the educational status of the Roma community. The projection has been made by time intervals (until 2020, from 2020 to 2030; from 2030 to 2040 and from 2040 to 2050) and has been elaborated through several calculation steps (estimation of the total number of the population aged 15+, the number of population aged 15+ by ethnicity by 2020, 2030, 2040 and 2050, the population aged 5-14 years as of 2011, 2020, 2030, 2040 and 2050 by ethnicity, and estimation of the education level of the population in the age cohort of 15-24, which in the base year were aged 5-14 years. The cumulative changes from previous years were also taken into account in the calculations. As a result – a final total projection of the population aged 15+ by education level, based on the results obtained in each steps of the projection has been elaborated.

**Keywords:** Roma population, labor market, Harman Mahala, Plovdiv

### **INTRODUCTION**

The Roma are one of the most stigmatized, marginalized and discriminated ethnic groups in Bulgaria, the Balkans and across Europe. Regardless of the measures and programs developed and implemented by both the state and non-governmental organizations, the desegregation and the integration of minorities at this stage have not achieved the expected results – the Roma in Bulgaria still have the lowest education level compared to all other ethnic groups in the country. According to the last population census in Bulgaria (February, 2011), (https://www.nsi.bg) the combined share of Roma people with high school and university level of education is just 7.2 %, while the level of illiteracy among the same ethnic group is considerably higher than the national average and has actually increased by 50.0 % in the period between the last two censuses (2001 – 2011). All that eventually hinders the overall integration of Roma people, since some 17 % of the Roma aged 16-25 (young working age) are unable to read or write, unlike Roma people in older

age groups, where the illiteracy share is lower. As of 2011, nearly 40% of the Roma in Bulgaria were under 20 years old, as opposed to 22.4 % of the Turkish ethnic group and 15.5 % of the Bulgarians. According to our calculations, by 2050 the Roma will account for about 20-24% of the population aged 15-64 in the country (based on the expert assessment and not on official statistical data). In case the negative educational trends concerning the Roma children remain, Bulgaria is about to end up with a significant share of working-aged citizens with low education level, which would compromise the overall socio-economic performance of the country as a whole.

### SCIENTIFIC APPROACH AND THE METHODOLOGY OF THE RESEARCH

In the elaboration of the demographic projection, the method of cohort components has been used. There are conceptual advantages to this method since it groups the population by age cohorts (five-year age groups) and calculates the characteristics (coefficients) of each group separately. Age decomposition makes the evaluation of the future demographic potential by age groups possible. These advantages make this method the best compared to other population projection methods (such as the method of extrapolation, the symptomatic analysis, the regression analysis, etc.). It has been rated as one of the most accurate population projection methods and is most often used to make population estimates for a 50-year-period of time, making it suitable for preparing demographic projections for a specified time frame.

In accordance with the purpose of the study, a projection of the total population of Bulgaria and of the Roma ethnic community for the 2020-2050 period has been made. The demographic projection of the total population of Bulgaria was elaborated in three scenarios:

- 1st scenario (realistic, current-trend-based) based on the assumption of preservation of the current demographic, socio-economic and ethno-cultural development trends concerning the Roma and the Bulgarian population groups;
- 2nd scenario (optimistic) based on the assumption that the demographic development will occur under favorable socio-economic conditions in the country;
- 3rd scenario (pessimistic) the development of the population is estimated under the hypothesis of declining socio-economic development of the country and worsening of the demographic processes.

All scenarios of the population projection are elaborated in two variants: 1) considering the official statistical data, according to which the number of Roma was 325 000 people as of 2011 (the year of the last population census in Bulgaria) and 2) considering the expert assessment, according to which the number of Roma as of 2015 was approximately 720 000 people. The expert assessment of the number of Roma in Bulgaria has taken into consideration the studies of various authors working on the issue of estimating the actual number or Roma in Bulgaria [8].

### OUTPUT DATA ON THE NUMBER OF ROMA

A major problem in assessing the situation of the Roma ethnic group not only in Bulgaria but also in other European countries is the lack of accurate data. There are major discrepancies between the number of Roma recorded by official censuses and their number according to scientific-empirical research in this field of study. One of the main reasons for that is the widespread phenomenon of "preferred ethnic identity" (the public declaration of another non-Roma ethnicity) [5].

Among the assessments giving the highest percentage of Roma is that of the Council of Europe, according to which the Roma make up 10.33 % of the population in Bulgaria. According to Marushiakova and Popov [3] in the early 1990s the number of Roma in Bulgaria was estimated to be 800 000, but unfortunately this assessment was made without mentioning any specific methodology. Liegeois [2] determined the number of Roma in Bulgaria to be somewhere between 700 000 and 800 000 people. He too did not mention how he had come up with such a number, but he had been most likely influenced by publications of Bulgarian authors working on the topic. Considerably more moderate and closer to the data of the Ministry of Interior from 1989 is the evaluation of Tomova [7] - from 577 000 to 600 000 people. Pamporov [4] estimated the number of Roma in 2007 to be somewhere between 638 162 and 815 313 people, while Ilieva [1] gives an approximate number of the Roma in Bulgaria at the beginning of the twenty-first century of around 650 000. According to our estimates, as the number of Roma people had reached some 720 000 people as of 2015 – the year which is considered a base year when carrying out the current projection of the Roma population in its second variant (the one based on the expert assessment of the number of Roma).

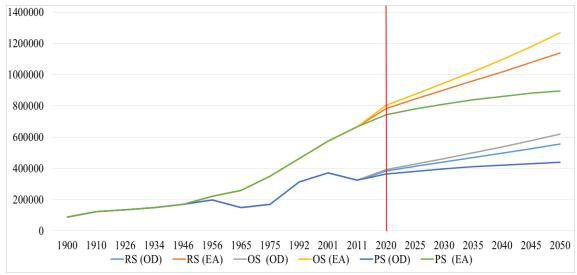
### PROJECTION OF THE NUMBER OF ROMA IN BULGARIA (2020-2050)

According to all scenarios of the projection, the number of Roma in Bulgaria will continue to increase. In case the number of the Roma population is taken from the official statistics, the estimates show that this number will reach values of between 363 000 and 393 000 by 2020 and will increase up to 438 000, 556 000 and 619 000 by 2050, according to the pessimistic, the realistic and the optimistic scenario respectively (Table 1, Fig. 1).

Table 1. Projection of the number of Roma in Bulgaria (2020-2050)

Accordi	ng to the officia	l statistical data		-				
	Realistic sce	nario	Optimistic	scenario	Pessimist	Pessimistic scenario		
Year	Roma	Total population	Roma	Total population	Roma	Total population		
2020	383582	6707001	393245	6942415	363290	6628530		
2050	556939	4754287	619897	5749780	438094	4451705		
Accordi	ng to the expert	assessment						
Year	Roma	Total population	Roma	Total population	Roma	Total population		
2020	784041	6707001	803791	6942415	742564	6628530		
2050	1138382	4754287	1267067	5749780	895463	4451705		

Depending on the considered levels of fertility and mortality, the number of Roma is expected to be somewhere between 742 000 and 803 000 by 2020, while by 2050 it is expected to reach 895 000, 1 138 000 or 1 267 000 according to the three scenarios respectively (Fig. 1), or an increase by 5.0 % -12.0 % by 2020, and between 20.3 % - 54.6 % in the next thirty years (2020-2050).



**Figure 1.** Estimated number of the Roma ethnic group in Bulgaria (2020-2050) Source: Author

The considerably younger age structure of that community exhibits a high share of Roma women in young age groups: as of 2011, nearly 39.1 % of the Roma in Bulgaria were under 20 years old, as opposed to 22.4 % of the Bulgarian Turks and 15.5 % of the Bulgarians. The better age structure of the Roma will continue to predetermine the higher birth rates in the medium and in the long term, despite the continuing reduction of the number of children in their households.

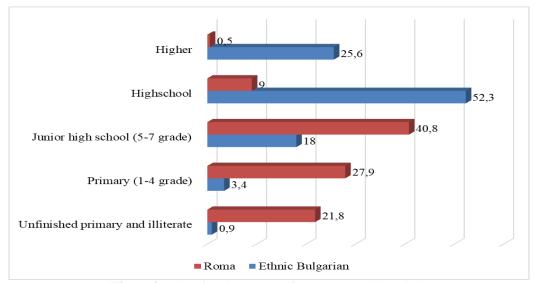
## MAIN FEATURES OF THE ROMA POPULATION EDUCATION LEVEL AND EDUCATION OF ROMA IN BULGARIA

The Roma in Bulgaria exhibit several main features in terms of their education level and their school training. The most representative features are the low share of university degree holders and university students, on the one hand, combined with a relatively high illiteracy rate on the other. Another common feature is that while the majority of the population in the country graduated from highschool, the majority of the Roma have only graduated from junior-highschool or "basic" school level as it is known in Bulgaria (8th grade). All that eventually hinders the overall integration of Roma people, since the low educational level and especially illiteracy (including the widespread phenomenon of functional illiteracy) deprives the Roma of equal start when they enter working age, while integration into the labor market is a key element of the overall integration into the society.

Apart from the educational structure of the Roma aged 15+, the educational process in which Roma children / students are involved, also exhibits certain specific features, the most representative of which are the high dropout rate of Roma students approaching highschool age, relatively low school attendance and – probably the most significant feature – studying in segregated schools. According to Popova [6], the Roma children in Bulgaria currently go to 5 different types of schools regarding the ethnic composition of the students:

- "Bulgarian schools" the share of Roma pupils is insignificant, somewhere between 5-10% of all:
- "Mixed schools" the share of Roma pupils varies between 1/3rd and 1/4th of all students the educational process in such schools is relatively good; such schools

- exhibit exposure to the macro-society, easier integration of the Roma children, the problem with Bulgarian language conduct is not so sharp;
- "Roma schools" the Roma represent the vast majority (often 100%) of the students. Such schools account for more than 1/5th of all schools in Bulgaria. What is more important, some 40% of all schools in the country have a share of Roma students over 1/3rd of all such schools easily "turn" into "Roma schools" because of the subsequent process of "white flight" the Bulgarian parents' withdrawal of their children from such schools, considering them not good enough for their children.
- "Rural schools" found in villages and small towns; the ethnic composition of the students' body varies. In many cases rural schools only exist because of the Roma children, for they are the majority of children in the area. Having said that, it should be noted that the Roma children actually play a positive role by keeping the school in existence and thus providing jobs for teachers in rural areas. On the other hand, however, it is such schools which are usually avoided by Bulgarian parents through emigration to a larger settlement.
- Schools for mentally disabled children some 50% of the pupils in such schools are Roma, which is considered as overrepresentation of that ethnic group in such schools; misleading.



**Figure 2.** Educational structure of the Roma and the ethnic Bulgarian population aged 15+ in Bulgaria as of 2011 (%) Source: Author, based on National Statistical Institute data

The training of Roma children in segregated schools leads to a number of negative consequences linked, on the one hand, to a lower quality of the education received compared to schools where children of Bulgarian origin predominate. On the other hand, going to a segregated school strengthens the relations between Roma children and deepens their social and economic exclusion from the Bulgarian macro-society. Therefore, eliminating school segregation as much as possible, is crucial to improving the Roma education level in the future.

Considering the growing number, and more importantly – share of Roma children in schools all over the country, the issues of education of the Roma are becoming increasingly important. Given that in numerous settlements across the country the Roma children are the vast majority of the students (or the only students), the issue of education of the Roma in Bulgaria is an issue of the Bulgarian education system in general.

### PARAMETERS OF THE DEMOGRAPHIC PROJECTION OF THE LEVEL OF EDUCATION OF ROMA IN BULGARIA

Defining the parameters of the projection of the educational level of different ethnic communities is seriously hampered by the fact that the educational achievement of students by ethnicity and age are not officially observed – information is obtained from various sociological studies that examine the school dropout rates of students of Roma ethnicity, the share of Roma graduates, the share of students who were reintegrated into the education system, Roma children attending kindergarten and preschool preparation, etc.

Unlike the projection of the population in general, in which case three scenarios have been developed, the projection of the expected educational level of the population aged 15+ years has only been made in two scenarios:

The first scenario is the so-called base scenario which stipulates that the current educational status and trends exhibited by the Roma will be maintained in the long term; The second scenario, or the so-called "integration in the education system" scenario, assumes a significant improvement of the educational status of the Roma community, as a result of the achievement of the priorities embedded in various national strategic and planning documents such as the National Strategy of the Republic of Bulgaria for Roma Integration (2012-2020) and the National Strategy for Preventing and Reducing Dropouts and Early School Leavers (2013-2020) [12] [13]. This scenario also assumes effective implementation of the programs and activities designed to combat the dropout of students and measures related to:

- overcoming the problems of enrollment and retention at school;
- implementation of effective measures to motivate students to attend school regularly;
- enhancing parents' interests in school life;
- overcoming the difficulties associated with socialization and adaptation of Roma children in schools;
- improving the quality of education in a multicultural educational environment;
- reducing the proportion of segregated schools and increasing the enrollment of Roma children in desegregated schools;
- ensuring equal access to education and non-discriminative attitude towards Roma students.

The projection has been made for ten-year intervals (until 2020, from 2020 to 2030; from 2030 to 2040 and from 2040 to 2050). At the beginning of each ten-year interval the population aged 15+ of the relevant ethnic community was taken into account, together with the number of population in the age cohorts of 5-10 and 10-14 years old, which in ten years will enter the age cohorts of 15-19 and 20-24 years respectively.

The projection of the educational level of the population from the two ethnic communities (Roma and Bulgarians) aged over 15+, went through the following steps:

- 1. Calculation of the total number of population aged 15+ and their level of education as of 2011;
- 2. Calculation of the expected number of population aged 15+ by ethnicity as of 2020, 2030, 2040 and 2050;
- 3. Calculation of the total and by ethnicity population aged 5-14 years as of 2011, 2020, 2030, 2040;
- 4. Calculation of the achieved level of education of the population in the age cohort of 15-24, which in the base year were aged 5-14 years the country's total and by ethnicity;

- 5. Calculation of the cumulative changes from previous years;
- 6. Final total projection of the population aged 15+ according to the attained education level the country's total and by ethnicity based on the results obtained in points 1,2,3,4 and 5.

In order to develop the base scenario projection, apart from the 2011 census data, results from some Bulgarian and international surveys reflecting the trends in the educational attainment of Roma have also been taken into consideration. According to "Europe and Central Asia Roma Inclusion: An Economic Opportunity for Bulgaria, Czech Republic, Romania and Serbia Policy Note" [11] only half of the Roma male students and a mere one third of Roma female students in Bulgaria aged 15-18 in 2010, still attend school (compared to 9/10 of ethnic Bulgarians students). Among those Roma still attending school, 23.0 % (male) and 24.0 % (female) of the students were enrolled in secondary education (including vocational). Assuming that these rates reflect the average relative share of Roma graduates (some of which undoubtedly will drop out, but others – who are still in primary school – can continue their studies in the secondary (highschool) level of education, that would mean an increase of 7 percentage points for men and 14 percentage points for women, compared to the previous decade.

According to the Citizens' Report on the implementation of the National Strategy for Roma Inclusion [9], which covered 1 000 Roma households, 33.7 % of respondents aged 15+ years had completed primary and lower than primary education; 11.9 % had never attended school; 10.7 % had completed secondary education; 37.8 % had completed junior highschool education and less than 1.0 % were university degree holders.

Another study on Roma education – "Education: the situation of Roma in 11 EU Member States" [10], provides important information on the Roma population and its educational attainment by age groups, which makes it possible to track some trends observed in the processes in discussion. Some of the key results from that survey indicate the following:

- An average of 35.0 % of Roma children of compulsory school-age currently (at the time of the survey) do not attend school;
- An average of 15.0 % (12 % for males and 17 % for females) of Roma aged 16+ declare themselves as illiterate, (aged 16-24 10.0 %; aged 25-44 13.0 %.; aged 45+ 19.0 %);
- An average of 9.0 % of Roma aged 16 + have never attended school; (aged 16-24 3%; 25-44 9%; 45+ 11%);
- An average of 73.0 % of the Roma population attended school, but left school before the age of 16;
- An average of 12.0 % of Roma in Bulgaria, aged 25-64, have completed secondary education.

### RESULTS OF THE PROJECTION

According to the two scenarios of the projection, it provides different results. As it is seen by Fig. 3, the main differences regarding the 2050 horizon are related to the share of Roma graduating from highschool (almost 40% of all according to the second scenario), at the expense of a significant reduction of people with lower level of education. The better scenario projects a significant drop in the share of Roma with junior highschool degree since a rise is expected in the number of Roma students continuing their education in highschools, provided that the above-mentioned measures for integration of Roma into the education system take effect. The second scenario also provides a much higher share of university degree holders among Roma by 2050, although still much below that of the

macro-society dominated by ethnic Bulgarians. Both scenarios, however, provide a relatively high illiteracy rate among Roma, although according to the second scenario the share of such people is expected to be slightly lower compared to the first scenario (Table 2, Fig. 3).

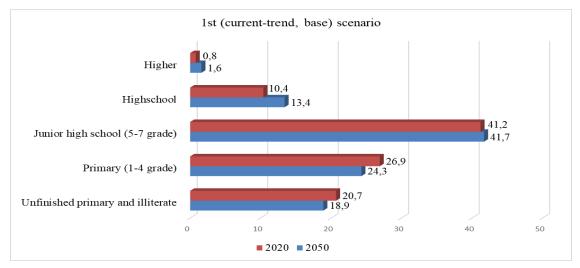
**Table 2.** Projected number (in thousands) and share of the Bulgarian and Roma population by attained education level according to official data (OD) and expert assessment (EA)

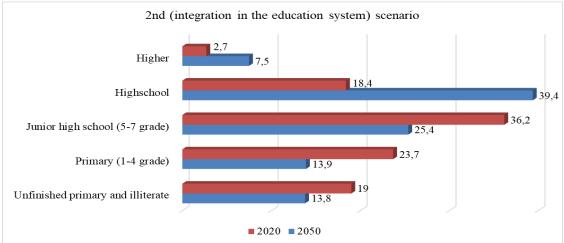
(based on the realistic scenario of the total population projection)

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EA         Total         1032436         25.0         1947761         47.1         732774         17.7         268050         6.5         155764           BG         705877         25.6         1432857         52.0         425655         15.5         78367         2.8         111191           Roma         6521         1.6         54400         13.4         168841         41.7         98261         24.3         76468           COD         Total         1032436         25.0         1947761         47.1         732774         17.7         268050         6.5         155764           BG         705877         25.6         1432857         52.0         425655         15.5         78367         2.8         111191           Roma         6521         1.6         54400         13.4         168841         41.7         98261         24.3         76468           EA         Total         957915         23.2         1836665         44.4         817819         19.8         314514         7.6         209873           BG         680955         25.6         1382267         52.0         410626         15.5         75600         2.8         10726	7.4 4224071	7.4	312562	2.9	122040	16.0	673999	51.4	2169884	22.4	945586	BG									
BG         705877         25.6         1432857         52.0         425655         15.5         78367         2.8         111191           Roma         6521         1.6         54400         13.4         168841         41.7         98261         24.3         76468           2050 - First scenario           OD         Total         1032436         25.0         1947761         47.1         732774         17.7         268050         6.5         155764           BG         705877         25.6         1432857         52.0         425655         15.5         78367         2.8         111191           Roma         6521         1.6         54400         13.4         168841         41.7         98261         24.3         76468           EA         Total         957915         23.2         1836665         44.4         817819         19.8         314514         7.6         209873           BG         680955         25.6         1382267         52.0         410626         15.5         75600         2.8         107265           Roma         13330         1.6         111194         13.4         345111         41.7         200846	19.1 556905	19.1	106361	23.7	131733	36.2	201583	18.4	102343	2.7	14885	Roma									
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OD         Total         1032436         25.0         1947761         47.1         732774         17.7         268050         6.5         155764           BG         705877         25.6         1432857         52.0         425655         15.5         78367         2.8         111191           Roma         6521         1.6         54400         13.4         168841         41.7         98261         24.3         76468           EA         Total         957915         23.2         1836665         44.4         817819         19.8         314514         7.6         209873           BG         680955         25.6         1382267         52.0         410626         15.5         75600         2.8         107265           Roma         13330         1.6         111194         13.4         345111         41.7         200846         24.3         156301	18.9 404493	18.9	76468	24.3	98261	41.7	168841	13.4	54400	1.6	6521	Roma									
BG         705877         25.6         1432857         52.0         425655         15.5         78367         2.8         111191           Roma         6521         1.6         54400         13.4         168841         41.7         98261         24.3         76468           EA         Total         957915         23.2         1836665         44.4         817819         19.8         314514         7.6         209873           BG         680955         25.6         1382267         52.0         410626         15.5         75600         2.8         107265           Roma         13330         1.6         111194         13.4         345111         41.7         200846         24.3         156301																					
Roma         6521         1.6         54400         13.4         168841         41.7         98261         24.3         76468           EA         Total         957915         23.2         1836665         44.4         817819         19.8         314514         7.6         209873           BG         680955         25.6         1382267         52.0         410626         15.5         75600         2.8         107265           Roma         13330         1.6         111194         13.4         345111         41.7         200846         24.3         156301	3.8 4136785	3.8	155764	6.5	268050	17.7	732774	47.1	1947761	25.0	1032436	Total	OD								
EA         Total         957915         23.2         1836665         44.4         817819         19.8         314514         7.6         209873           BG         680955         25.6         1382267         52.0         410626         15.5         75600         2.8         107265           Roma         13330         1.6         111194         13.4         345111         41.7         200846         24.3         156301	4.0 2753946	4.0	111191	2.8	78367	15.5	425655	52.0	1432857	25.6	705877	BG									
BG     680955     25.6     1382267     52.0     410626     15.5     75600     2.8     107265       Roma     13330     1.6     111194     13.4     345111     41.7     200846     24.3     156301	18.9 404493	18.9	76468	24.3	98261	41.7	168841	13.4	54400	1.6	6521	Roma									
Roma 13330 1.6 111194 13.4 345111 41.7 200846 24.3 156301	5.1 4136785	5.1	209873	7.6	314514	19.8	817819	44.4	1836665	23.2	957915	Total	EA								
	4.0 2656713	4.0	107265	2.8	75600	15.5	410626	52.0	1382267	25.6	680955	BG									
2050 - Second scenario	18.9 826782	18.9	156301	24.3	200846	41.7	345111	13.4	111194	1.6	13330	Roma									
	2050 - Second scenario																				
OD         Total         1189607         28.8         2093118         50.6         531107         12.8         172984         4.2         149970	3.6 4136785	3.6	149970	4.2	172984	12.8	531107	50.6	2093118	28.8	1189607	Total	OD								
BG 790909 28.7 1461201 53.1 308027 11.2 65612 2.4 128197	4.7 2753946	4.7	128197	2.4	65612	11.2	308027	53.1	1461201	28.7		BG									
Roma 30516 7.5 159377 39.4 102856 25.4 56271 13.9 55473	13.7 404493	13.7	55473	13.9		25.4	102856	39.4	159377	7.5	30516	Roma									
<b>EA</b> Total 1116086 27.0 2085354 50.4 559309 13.5 193688 4.7 182348	4.4 4136785	4.4	182348	4.7	193688	13.5	559309	50.4	2085354	27.0	1116086	Total	EA								
BG 762985 28.7 1409610 53.1 297151 11.2 63295 2.4 123671	4.7 2656713	4.7	123671	2.4				53.1		28.7		BG									
Roma 62375 7.5 325765 39.4 210238 25.4 115017 13.9 113387	13.7 826782	13.7	113387	13.9	115017	25.4	210238	39.4	325765	7.5	62375	Roma									

Source: Author

The chances of any of the two suggested scenarios to prove accurate depend on the future developments of the Roma integration both into society in general and into the education system in particular. The more the current trends remain steady, the more likely the first scenario will be and the opposite – an eventual improvement of school attendance and efficient fight with Roma school segregation and early school leavers will eventually make the provisions of the second scenario possible.





**Figure 3.** Projected shares (%) of the Roma population by attained education level by 2020 and 2050

Source: Author

### **CONCLUSION**

The education of Roma in Bulgaria will remain a serious issue with even more serious consequences for the society as a whole, given the projected increase of the number and especially the share of Roma population in Bulgaria by 2050 with no guarantees that the negative trends will cease. A growing number of poorly educated and / or illiterate citizens will hamper the economy of the country more and more significantly, regardless of the fact that so far, the low education levels of the Roma affect mostly the representatives of that ethnic community themselves, given that they are poorly involved in the labor market of the country (or at least officially). However, with the expected increase of the Roma population, the share of the country's working age population of that ethnic community will represent a considerable share of the total working age population of Bulgaria by 2050. Therefore, addressing the issues related to the education of the Roma is crucial in order to prevent the further deterioration of the chances those residents have for an equal start regarding their labor and overall social realization as citizens of a 21st century European country. Despite the fact that the second scenario provides better structure of the Roma population by attained educational level, this scenario is to be considered as less probable compared to the current-trend scenario of the

projection. This conclusion comes from the relatively poor results of the integration measures applied for the last decade or so in Bulgaria, which only have local effect in certain cases and haven't led to any significant trend changes nationwide, regarding the overall improvement of Roma education in the country.

### **Acknowledgments:**

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