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## **Human Capital Formation during Communism and Transition: Evidence from Bulgaria**

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# **Human Capital Formation during Communism and Transition: Evidence from Bulgaria<sup>1</sup>**

**Ralitsa Simeonova-Ganeva<sup>2</sup>**

## *Abstract*

Is it true that communist countries had well-developed human capital, or is it just a myth? What were human capital stocks at the beginning of transition to market economy? What happened to human capital formation during the transition? We attempt to answer these questions using evidence from Bulgaria. This is also a story about how a communist government had coped with labour market problems in a small closed economy. Unfortunately, during communism, there had been quite insufficient public information on human capital. Therefore, in the first place, we collect, synthesize and analyze all available information from official statistical publications as well as internal reference books and administrative documents, which used to be classified during communism, and at present are available at the Central State Archives. Next, we construct human capital indicators based on educational data for the communist period and track the dynamics in human capital formation for both communism and transition. Finally, we identify key policy and political measures which have affected human capital formation. Main findings show that communism started with extremely underdeveloped human resources. During the entire period the government had tried to provide favorable conditions for human capital formation. Communist policy measures gave significant results in the 60s, but had been ineffective in sustaining better education in the long run. As a result, the start of transition was characterized by poor levels of human capital due to an educational crisis in the last decade of communism (then, about 60% of the population in Bulgaria was with primary or lower-level of education). We assume that lack of economic incentives at individual level had determined weak pursuit of better education.

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## I. Introduction

During transition governmental and non-governmental analyses were based on the well spread opinion that one of the good heritages of the transitional economies, particularly that of Bulgaria, is the high level of human capital.<sup>3</sup> Among the few highly appreciated achievements of the communist economy are the educational system and science.<sup>4</sup> The discussions about economic growth policies point out that the good education of the labour force in Bulgaria is a factor for economic growth.<sup>5</sup> Undoubtedly, Bulgaria, as well as the other Eastern European countries, has significant achievements in the field of education. The free access of the population to education and the measures against illiteracy are key elements in the social and economic policy of the communist governments.<sup>6</sup>

However, in the recent years, a discussion about discrepancies between the available and the necessary for the economic development human capital has been launched.<sup>7</sup> Employers, experts, students, and governmental institutions started to talk about lack of correspondence between the educational preparation of the human resources and the market requirements.<sup>8</sup> The latter problem is explained by the specifics of the transition from centrally planned to market economy. The opinion for well developed education during the communist times still dominates, but presently it is noticed that the transition is accompanied by worsening of the quality of education.<sup>9</sup>

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<sup>3</sup> „Given the scope for restructuring, the need for new capital, the relatively low labour costs by international standards, and the high level of human capital, one might have expected transition to be associated with high rates of capital accumulation.” (Blanchard, 1997, p. 13).

<sup>4</sup> „In my and my colleagues’ view, Bulgaria really has kept distinguished traditions in science and education, which at present should be creating great possibilities.” (translated from Bulgarian) (Sachs, 1999).

<sup>5</sup> „The good education of the labour force is one of the key determinants for the economic growth. In that field, on one hand, we are in a good position, since the educational level of our workers and specialists is highly appreciated.” (Bojkov, 1999).

<sup>6</sup> After 1945 many communist countries like the USSR, Poland, Romania, Albania, Vietnam and Bulgaria take measures for liquidation of illiteracy.

<sup>7</sup> „There is a tendency for increasing discrepancy between the qualification of the individuals with professional education in the major age groups on one hand, and the skills, which are demanded on the labour market on the other.” (Ministry of Finance, 2004)

<sup>8</sup> „The gradual increase of the share of the employed with high level of education is accompanied by a tendency for mismatch between the expectations and the requirements of the business and the real preparation of the labour force.” (Report for the President of the Republic of Bulgaria, 2005)

<sup>9</sup> „Before 1989 the higher education system in Bulgaria had the reputation of high quality. ... After 1989 the system underwent unprecedented expansion, the financing of which could not follow its pace, a huge number of private higher education institutions entered the market; all this resulted in concerns that the quality started to deteriorate.” (Bekhradnia, 2005)

In spite of all various explanations for the different problems in the analysis so far, the question about the real status of the human capital with which the country has entered the transition has not been answered yet. Is it true that communist countries had well-developed human resources, or is it just a myth? What were human capital stocks at the beginning of transition to market economy? What happened to human capital formation during the transition?

Main objective of the present paper is to find answers to the above questions using evidence from Bulgaria. The research is based on educational characteristics of population and labour force in Bulgaria in the last sixty years, as well as some of the determinants of their dynamics. The period in consideration includes two major sub-periods:

- ✓ 1944 – 1989 – the years of communism and planned economy; and
- ✓ 1990 – 2004 – the years of democracy and transition to market economy.

Part II examines separately the data sources for the communist times and the years of transition, which reveals (in some, or great extent) the educational structure of population and labour force. Part III presents dynamics of human capital formation during the period of consideration. Part IV identifies and summarizes main political and economic factors, which have influenced the process of human capital formation. Part V outlines main conclusions and implications.

## **II. Data sources**

Human capital is comprised of various characteristics of individuals in the labour force, such as professional skills, education, health, etc. Among the most frequently used measures of human capital are those related to the educational characteristics of the labour force. For example, average number of schooling years per person, share of illiterate population, educational structure of the labour force, enrollment rates in the different educational levels, and others.

### ***2.1. Data sources for the communist period***

During the years of communism there has been no public information presenting accurately the real state of the education of the population and the labour force. The reason for the lack of detailed statistics and analysis of the employment, the labour force, the education and their contribution to the economic development, is a prohibition for the public announcement of (some of) these data due to their classification as state or official secret intelligence.

The communist governments passed numerous classified legislative acts related to the protection of both state and official secret, whose dissemination was subject to severe penalties according to the enforced at the time Penal Code.<sup>10</sup> Government decrees

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<sup>10</sup> Some of the economic intelligence defined as state secret were: data or documents, which were classified following the decisions of the authorities of the Council of Mutual Economic Assistance and other

approved state secret lists, which were to a great extent general. Indeed, the much more detailed lists were the relevant official secret lists approved by the executive bodies of each official department. Unlike the state secret list, which was classified as “top secret” and distributed at high executive level in a restricted number of copies, the supplementary lists of the official secret were not distributed at all and were accessible only in the archives of the relevant offices.<sup>11</sup>

The main document, certifying that the information investigated here had been confidential, is an internal order of the State Committee on Labour and Salary (CLS), which contains a list of intelligence approved as being office secret at the CLS.<sup>12</sup> The first article in the list includes:

- The status of the labour resources in general and the labour force in national, specialized and territorial aspect;
- The reports on the labour resources balances and the balance of the qualified workers in national and territorial aspect;
- The status of the salaries in national aspect; and
- The effectiveness of labour.

The defining of the above information as secret resulted in limited and hardly accessible sources of data on education and labour force during the communist times. Most of the publications in the period, which reveal any of this information, cover various topics and themes but also include some data on the indicators investigated here. In a rare number of cases this information is collected in specialized publications dedicated to research in the field of education and labour force. Generally, the sources of information on education and labour force could be classified in the following five groups:

1. Publications of the Central Statistical Office (CSO) of the Council of Ministers and its regional units – statistical yearbooks, reference books and periodicals, which are for general public use or “For office use!”.
2. Publications of the CSO, containing the main findings from each census.
3. Publications, containing findings from the national empirical surveys, conducted by the Institute of Sociology at the Bulgarian Academy of Science (BAS).
4. Research publications in this or a close scientific subject in the specialized press.
5. Legislative and official documents of the communist governments related to the education and the labour force, which have been declassified and at present are available at the Central State Archives.

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international public bodies (none of the lists provides specifications regarding these data and documents); aggregated data about the capacities of production, plans, reports on their implementation; aggregated data about loss from the production activities on national scale and analysis of the loss, etc.

<sup>11</sup> The three levels of confidence of the state secret intelligence were “Confidential!” – the lowest level, “Top secret!” – the middle level, and “Top secret of particular significance!” – the highest level. The information that was not considered a state but an office secret was labeled with the sign “For office use!”.

<sup>12</sup> CLS Order № 666, 1977, Internal order and lists of office secret intelligence, interior work regulations of CLS, CLS, Central State Archives.

The CSO official data on the education and the labour force is included in the findings of each census and the statistical yearbooks. The statistical yearbooks cover information on labour, education and labour force in a few contents sections.<sup>13</sup> They include data on the number of employed persons by industries and by job positions groups, the number of specialists, the average salaries by industries and indices of the nominal and the real wages. The relevant tables consider as specialists all persons with completed specialized secondary or higher education. The included information refers only to the employed specialists regardless the job description of their positions.<sup>14</sup> The publications with the main findings of the so-called representative surveys in addition to each census contain detailed information on the educational structure of the population by gender, age, social groups and industries.<sup>15</sup> It could be concluded that the data on the education and the labour force that was published by the CSO is versatile and detailed, but it is not informative in respect of crucial for the economic potential and development indicators such as: shares of the illiterate population, educational structure of the employed pertaining to the characteristics of the performed work, wage structure by educational level and job description of the employees, shares of students studying in the different educational levels in the total number of the relevant age population, foreign languages skills of the labour force, the expenditures on education, etc.

Besides the CSO publications for general public use, statistical books for office use only, which contained more detailed and in some cases different type of information, had also been published.<sup>16</sup> The 1986 statistical book for office use of the CSO unit in the district of Michailovgrad, for instance, includes information about the distribution of the specialists by specialization, age, industries, gender, years of experience, wage tables by industries, etc., but again information like wage structure by educational level and job description of the employees is not covered at all.<sup>17</sup>

The national empirical sociological surveys conducted by the BAS research teams are an alternative source of detailed information about the population, the labour force, the illiteracy rates, the educational structure, the wage structure, and other economic and social aspects of the population in the communist times. This information is integrated in various findings from the sociological surveys, although the research subject of these surveys is not necessary in the field of education and labour force. It is important to note that, due to the development of the information technologies at the time, the findings had been published several years after the field work of the surveys, in a limited number of circulation, usually under titles, which could hardly reveal the presence of information about the education, the labour force and the status of the human capital in the country.<sup>18</sup>

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<sup>13</sup> Statistical Yearbooks of the Peoples Republic of Bulgaria, CSO

<sup>14</sup> Statistical Book, CSO Unit, District of Michailovgrad, 1986

<sup>15</sup> The relevant representative survey in 1985 includes 183 105 respondents.

<sup>16</sup> For example, in the beginning of 1989 the statistical book "Financial incomes and expenditures of the population by regions, districts and municipalities" was published for office use in circulation of 567. The introduction of the book clarifies that data of that kind was published for the first time.

<sup>17</sup> Statistical Book, CSO Unit, District of Michailovgrad, 1986

<sup>18</sup> Therefore, the standard bibliographical inquiries hardly result in information about such publications even in the specialized libraries. The only successful approach in the search of information about such publications, as experienced by the author of the present paper, is the direct communication with

The annexed Table A1 represents information about the national empirical sociological surveys in the communist years, which have been used in the present analysis.

The scientific research publications on the subject are usually included in the periodicals of the Institute of Demography at BAS or in the editions of other scientific institutes, universities, professional syndicates, vocational training centers, etc. These publications are on heterogeneous topics both in the subject of education and labour force, and in other related subjects.

The present analysis also considers legislative acts, official documents and reports of the Council of Ministers, the Ministry of Education, the Committee of Labour and Prices at the Council of Ministers, the Committee of Labour and Salary at the Council of Ministers (CLS), the Ministry of Labour and Social Care, and the State Planning Committee, approved in the period 1945-1989. Most of these documents had been labeled with signs “Top Secret!” and “Confidential!” in the past, and have been disclosed in recently.<sup>19</sup> Part of these documents is related to the adopted policy for the protection of the state and the office secret. Another part of the documents is related to the activities of the government institutions responsible for the analysis of the economic development, the labour, and the education, which had been confidential during the years of communism. A third part of the documents represents decrees of the Council of Ministers introducing policy measures for economic development, which partially or to great extent reveal information about the status of the labour force during the period.

## ***2.2. Data sources for the years of transition***

During the years of transition the official information on the labour force, the unemployment, and the wages of the employees is collected and published by the state Agency of Employment and the National Statistical Institute. Along with the information of these two official sources, there are many publications of findings from various private surveys, conducted by local and international organizations.

The Employment Agency (EA) publishes aggregated data of the labour market according to the registered unemployed persons and free job positions at the Bureaus of Labour.

The National Statistical Institute (NSI) conducts regular surveys on the household in Bulgaria and publishes parallel data on the employment and the unemployment. Among the regular labour market observations are:

- The Labour Force Survey within the households surveys;
- The enterprise survey on the number of employed persons, wages and other labour costs;

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researchers who participated in the surveys, and who can directly name the title and the form of publication of their findings.

<sup>19</sup> The list of the legislative and official documents that have been used in the present analysis is presented in the annexed Table A2.

- The quarterly enterprise survey on the number of employees, time worked and labour costs;
- The four-yearly survey on the structure of earnings.

Since 1994, along with the traditional statistics on the number of students, teachers and schools, NSI introduces the internationally adopted net enrollment rates of the population in the educational system.

### **III. Human Capital Formation**

#### ***3.1. Educational structure of population***

After the World War II, the social class structure of the population reveal that the intellectuals, the clerks and the bourgeoisie represented approximately one tenth of the population in the country (Table B2 from the Appendices). Until the War the population in Bulgaria was badly educated. The observations over the population of the then General Directorate of Statistics were pertaining only to the literacy rates, and did not include any numbers of completed years of school education, nor the attained and completed educational levels, which fact is rather indicative about the general educational level of the population at the time.

In 1926 more than a half of the Bulgarians were literate, but there was a significant polarization among the other ethnicity groups living in the country: barely 8.2 % of the Gipsy population was literate, while that share in the Jewish group was 71.3 %, and that in the Armenian group is 59.5 %. The census data from 1934 and 1946 show, that the shares of the illiterate population were respectively 27 % and 23.4 %. The overcoming of the poor education of the population after the World War II was a gradual process following the adoption of numerous policy measures and the natural change of the generations. According to the findings of the two empirical sociological surveys “The Town and the Village” the share of the illiterate population over 16 years was 9.12 % in 1968, and 2.7 % in 1986 (Chart C2). The census in 1992 and 2001 indicate that the illiteracy rate was respectively 2 % and 1.8 %.<sup>20</sup>

The first significant changes in the educational structure of the population took place in the end of the 50s and during the 60s (Chart C1, Tables B3 and B4). For the period 1946-1985 the share of the population with secondary and higher education increased almost seven times, while the population with lower than primary education, representing three quarters of the whole population at the beginning, contracted to a quarter at the end of the period.

However, the second significant changes in the educational structure of the population, which were expressed in the high increase of the share of the secondary and tertiary school graduates, took place in the years of transition. Although there is a discontinuance of the communist measures in support of the education system and against the illiteracy after 1990, there is no observation of decrease in the educational attainment and

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<sup>20</sup> Foteva, M., “Educational Status of the men and women in Bulgaria”, 2004



completion, but on the contrary, in 2003 the share of higher education graduates in the labour force was 21 %, and that of the completed secondary education - 50 % (Table B5).

### **3.1.1. Enrollment rates**

Net enrollment rates of population in the educational system represent shares of enrolments in different educational levels in the size of population in relevant age groups. There are no official calculations of these rates during the period 1944–1994. Charts C3 and C4 illustrate results from our calculations of approximate enrollment rates for the period 1939-2000 (including pre- and post- communist years), and Table B6 shows the NSI net enrollment rates for the period 1994-2004.

The first type of approximate enrollment rates is calculated as a ratio of the number of enrollments in the different educational levels to the total number of the population during the period (Chart C3). In 1939 0.16 % of the population was enrolled in the higher education programs and up to 1956 this share was less than half percent. During the period 1963–1986 it fluctuated around 1 %. Just after 1987 this higher education enrollment rate started to gradually increase, and at the end of 90s it amounted to almost 3%. Before the World War II the school training of the future specialists, namely the enrollment of students in specialized secondary schools and higher institutions in the population, covered only 0.34% of the population, and it took a period of twenty years for a gradual rise of this to nearly 2%. The first significant increase of the number of the trained specialists was observed in 1961 when they were 2.14% of the population, and in 1964 they doubled to 4% - a peak value that was achieved again during the 90s.

The second type of approximate enrollment rates is calculated as a ratio of the number of enrolments in the specialized secondary education to the number of population in the age group from 10 to 19 during the period (Chart C4). Thus, the enrollment rate of the population in the age group from 10 to 19 in the specialized secondary education was 0.82% in 1939. Its average value for the period 1950–1956 was 4.5 %. A gradual rise was observed with a peak value of 15 % in 1964. During the next ten years, the average value of that enrollment rate was around 11 %, and it underwent through a steady decrease until 1984 when its value was about 7 %. In the end of the 80s it started rising again and in 2000 the enrollment rate was almost 12 %.

The official net enrollment rates for the period 1994–2004 increased from almost 93% to 100% for the primary education level, from 61% to 71% for the secondary education level, and from 19% to 24% for the higher education level (Table B6).

### **3.1.2. Ratio of higher to lower educated population**

The data clearly states that in the beginning of the investigated period the majority of the population was poorly educated and a very small part of it was with relatively high education. The official economic analysis as well as the experts' opinions dating from the early years of the communist times pointed out that then the economy was facing hindrances due to the disparity of the available and the necessary human resources. Besides the apparent lack of a sufficient quantity of specialists, an additional impediment

in the production process turned out to be the considerable part of the workers with very low level of education. Hence, the ratio between the two polar groups of workers (better educated and poorly educated workers) in the labour force was of no less importance than the very share of the specialists. The rest of the workers, which were between the two educational poles, represented the workers who held the average for the whole labour force educational level.

In addition to the above enrollment rates, the present analysis attempts to illustrate the ratio of better-educated to poorly educated workers by calculation of a few approximate coefficients and the results are presented on Chart C7. We put the better educated population in the numerator and the poorly educated population in the denominator; the smaller the values of the coefficients, the more the poorly educated population outnumbered the better educated population. The starting point in the calculations of such ratios is the defining of the two polar groups of the population. Three possible approaches in the definition of the poles have been applied using the official census data.

The first approach considers as better educated those persons who have completed university education, and as poorly educated persons – those with primary or lower education. The ratio calculated according to these definitions is 0.007 in 1934, 0.054 in 1975, 0.1 in 1985, and 0.206 in 2001. During almost the entire communist period the university graduates had been less than one tenth of the persons with primary or lower education.

The second approach considers again as better educated those persons who have completed university education, but as poorly educated are defined only the persons with lower than primary education. In 1934 this ratio has almost the same value as the previous one – 0.008. Unlike the results from the first approach, the disparity between the two polar groups as defined here starts to diminish in 1965 with a ratio of 0.045. In 1975 that ratio is 0.1, and in 1985 – 0.208. At the time of the last census in 2001 the value of the ratio is 0.487, which means that the persons with less than primary education were nearly two times more than the university graduates.

The third approach uses the latter definition of poorly educated persons, but expands the group of the better educated by including in it not only the university graduates, but also the persons with college and specialized secondary education. The ratio calculated according to such defined poles is 0.039 in 1934. During the next decades it raises several times higher than the ratios from the other two approaches. The disparity between the educational poles changes intensively at the end of the communism in 1985 when for the first time the specialists outnumber the persons without completed primary education (the ratio amounts to 1.222). Another significant change takes place in the years of transition: in 2001 the specialists are two times and a half more than the lower educated persons as defined under this approach.

### **3.1.3. Generations and their educational attainment**

As mentioned above, the changes of the educational structure of the population and the labour force advanced gradually in close relation with the natural change of the

generations. It is interesting to draw a comparison between the particular social groups with certain level of education and the completed educational levels of their offspring. The first and only observation of the education of the successive generations is integrated in the findings of the empirical sociological survey “The Town and the Village” in 1986, where the education of the respondents, their fathers and their children were studied. According to the findings, 40.42 % of the respondents were better educated by one additional level of education than their fathers, and 14.22 % of them were better educated by two or three levels of additional education. Or, two thirds of the children were better educated than their fathers. The cases in which the fathers were better educated by one level of education than the respondents were just 3.03 %. The share of the grandchildren that were better educated by one level of education than their grandfathers was 13.78 %, and those better educated by two or three levels of education were 29.86 %.

Table B9 follows the dynamics of the educational levels of the generations, which clearly outlines the tendency for better education of each successive generation: children are better educated than fathers; and grandchildren are better educated than grandfathers. These results show that regardless of the characteristics of the base generations most of the consecutive generations complete a higher educational level. This process results both in a general advancement of the education of the population and in lessening of the discrepancies between the higher educated and the lower educated polar groups.

## ***3.2. Human capital in the economy***

### **3.2.1. Educational attainment of labour force**

Chart C6 displays base indices of the increase of the number of the population, the number of the employed persons, and the number of the employed specialists (the employees with specialized secondary, college or university education) in the period 1956–1988, calculated using the official statistical data. While during the period the population grew by approximately 19 %, the number of the employed persons rose by more than three times, and the number of the specialists – almost six times and a half. The official economic analyses during that period considered as “unemployed persons” those active persons who simply did not work. Despite the absence of officially acknowledged unemployment, in 1948 only about 14 % of the active population was employed (Chart C8), and in 1952 that share was barely 23 %. The significant change in the employment took place after 1960: up to 1970 the share increased from 37 % to 55 %; during the next decade it rose to 79 %; and the highest value of that share was almost 82 % in 1988-1989. There was a drop in the employment rate in the years of transition as in 2000 it is 63 % - the level from the years of 1972-1973.

The share of the employed specialists in the total number of employed was 12.6 % in 1956, as 5.3 % from this share were university graduates. At the end of the communism the specialists were almost a quarter of the employed, as 8.3 % of them were with university degrees (Table B7 and Chart C5). The educational structure of the population over 16 according to the findings of the two sociological surveys “The Town and the Village” shows that in 1968 less than 20 % had completed secondary or higher education, while in 1986 that share doubled to about 40 % (Chart C2). However, by the end of the

communism approximately 54 % of the population over 16 had not completed secondary education, and almost a quarter had not completed primary education.

The significance of the higher education in the labour market continued to emerge clearly during the transition. The share of the employed with no completed primary education diminished by 10 % in the period 1994-2003 but was compensated by an increase of the share of employed with university or secondary education (Chart C9). 82 % of the employed in 2003 were with secondary or higher education, which means that this share doubled every eighteen years since 1968. Although the higher education proved to push aside the lack of good education in the employment structure, the share of the well educated unemployed persons in unemployment expanded. The observations over the unemployed population show that the share of the unemployed with no completed primary education decreased as for the last ten years the drop was by 10 % (Chart C10). In 2003 the unemployed university graduates represented 12 % of the unemployed persons, and the unemployed secondary school graduates represented half of the unemployed persons.

### **3.2.2. Educational attainment of managers**

In the early years of communism the lack of qualified labour was a consequence of the status of the human resources in the country after the WWII. In spite of the efforts during the whole period of its rule, forty years later the central planning still had not succeeded in preparing the specialists and managers necessary for the economy.

During the 60s the qualification of the management staff was unsatisfactory: the managers were low-qualified and their labour was with a low level of mechanization.<sup>21</sup> Regardless of the officially approved necessary qualification for the various job positions, 22 % (or 3 100 persons) of the top managers and 56 % (or 3 770 persons) of the deputy managers in the economy were without completed secondary education. The university graduates in the management staff represented only about 20 %. Notwithstanding the programs for improvement of the qualification of the managers, in 1981 the share of the executive staff with secondary or higher education was 24.7 %.<sup>22</sup> The enhancement of the qualification remained a priority of the communist governments until their fall, but the policy measures proved to be ineffective. The training programs for the enhancement of the qualification were predominantly for “refreshing and enriching knowledge” and the average duration of the training courses of a person ranged between 2.5 and 4.8 days, which was too short for the achievement of any qualitative changes.<sup>23</sup>

### **3.2.3. Educational attainment of entrepreneurs**

During communism, the private sector had been very limited. However, evidence shows existence of entrepreneurship in certain economic sectors.

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<sup>21</sup> Report of the Labour Research Institute regarding the preparation and the qualification of the management staff, Committee of Labour and Salary, 1966, Central State Archives

<sup>22</sup> Fol, A., *The qualification of the labour resources – at the standard of the social necessities*, 1982

<sup>23</sup> Fol, A., *The qualification of the labour resources – at the standard of the social necessities*, 1982

All private businessmen in the trade sector had completed just four years of school education in 1968.<sup>24</sup> At the time, more than a half of the private businessmen in the crafts had not completed primary education, and barely around 4 % of them had completed secondary education. Furthermore, there were no university graduates among the entrepreneurs in the private sector. In 1986, 11 % of these entrepreneurs are illiterate or have completed only adult training courses for reading and writing, 26 % of them were with completed four years of school education, 58 % - with primary education, 5 % - with secondary education, and again none of them had higher than secondary education.<sup>25</sup>

Two of the empirical studies on the entrepreneurs during the years of transition indicate that: In 2001 the average share of the entrepreneurs with university education was 24%.<sup>26</sup> In 2003 the share of the entrepreneurs with primary or lower education was around 4%, the share of those with secondary education was 54%, and that of the university graduates – 42%.<sup>27</sup>

We could conclude that during communism due to given policy reasons the entrepreneurship was spread only within very low educated social groups. In the years of transition the entrepreneurship underwent through significant development and expansion so that at present the higher educated entrepreneurs continue to displace the previously traditional for the private sector social group.

#### **IV. Determinants of human capital formation**

There are various types of factors affecting the labour force and the education: political, economic, social, cultural, subjective, etc. Here some of the political and economic factors, which have influenced the dynamics of labour and education, are considered. In order to identify such factors, it is necessary to investigate the economic processes and the policy measures that have led to changes in the labour force and the educational structure of the population.

During the communist period the economy was centralized and subjected to the political interest of the ruling party and its foreign policy relations. Right after the nationalization of the enterprises and the elimination of the pre-war bourgeoisie, the first communist leaders experienced great difficulties to manage the production in the economy. A reason for this predicament was the lack of skills, knowledge and adequate motivation of the new managers to run properly the enterprises and their machines and equipment.<sup>28</sup> In addition to the inherited insufficient number of higher school graduates, there was a diminution by one half of the well educated population after the war.<sup>29</sup> Another hardship appeared to be the significant part of illiterate workers, who could hardly be effective even when managed by qualified managers.

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<sup>24</sup> Sociological survey „The Town and the Village–68”

<sup>25</sup> Sociological survey „The Town and the Village–86”

<sup>26</sup> 2002 Annual Report „The Small and Medium-Sized Enterprises in Bulgaria”, ASME, 2002

<sup>27</sup> „The Small and Medium-Sized Enterprises in Bulgaria”, NSI, 2004

<sup>28</sup> As per the educational and social class structure of the society at the time, there was a pressing need for specialists.

<sup>29</sup> In 1944 the intellectuals represented 2.09 % of the population, while in 1946 the university graduates were only 0.9 % of it. (Tables B2 and B3)

#### **4.1. Liquidation of illiteracy**

Simultaneously with the introduction of the central planning, the government started programs for liquidation of illiteracy. Among the major hindrances of the implementation of these programs was the refusal of the illiterate to attend literate courses due to lack of consciousness, lack of motivation, and presence of prejudices and religious fanaticism.<sup>30</sup> Within the framework of these programs in the period 1945-1950, 122 125 persons enrolled in literate courses, which represented around 7 % of the illiterate population at the time.<sup>31</sup> In the beginning of the 50s about one million of the population was illiterate or barely literate, which ordered Bulgaria in the last place by rate of the liquidation of illiteracy among the other communist countries. In order to overcome this negative process, in 1951-1952 the government adopted numerous legislative acts including the Law for Liquidation of Illiteracy, which obligated the illiterate persons to enroll in the free literate courses and imposed a sentence of a year for persons who refused to attend or impeded illiterate persons to attend the training. The obligatory education of children and youth was until the age of 15, and after 1959 – until the age of 16. The major part of the expenditures on the students education was covered by the state regardless the educational level.

Nevertheless, at the end of the 50s every year between 3 500 and 4 500 children were not enrolled in primary education, between 30 000 and 40 000 children did not complete primary education, around 16 000 graduates from primary schools did not continue their education (or 18 % of all primary school graduates), and a certain part of the students in secondary education dropped out. That makes between 40 000 and 60 000 children (or 2 % of the population under age of 19) of drop-outs from the education system annually.<sup>32</sup>

#### **4.2. Mobilization of the labour force**

At the end of the 50s the rates of the development of the industry accelerated, and in the same time there was an outflow of the working force from the agriculture.<sup>33</sup> Although the number of employed population started to increase significantly, in the beginning of the 60s, the State Planning Committee reported the shortage of workers and the lack of qualified labour as a main reason for the failure to fulfill the economic plan in key industries.<sup>34</sup> The reported number of vacant job positions that could hardly be covered by the available resources at the time was 65 000. Another problem that interfered with the planning process and the implementation of the economic plan was the migration from the villages to the towns, which resulted in abandonment of many agricultural units followed by drops in yields and revenues in the sector.

It turned out that the free movement of the labour force, as well as the free choice of the workers regarding their jobs and the free choice of the employers to appoint workers, was

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<sup>30</sup> Reports on the liquidation of illiteracy, Ministry of Education, Central State Archives

<sup>31</sup> Report on the measures for the quick liquidation of illiteracy of the Minister of Education submitted to the Council of Ministers, 1950, Central State Archives

<sup>32</sup> Reports of the Committee of Labour and Prices and the State Planning Committee submitted to the Council of Ministers, 1960, Central State Archives

<sup>33</sup> Berov, L., *Economic History*, 1994, p. 656

<sup>34</sup> Report submitted to the Council of Ministers, 1960, Central State Archives

a matter of great importance for the central planning, since it was incapable to provide the necessary labour inputs. Furthermore, due to the fact that the population of Bulgaria was relatively small, in order to achieve middle and long run economic development, the main available source for labour appeared to be the unutilized until that moment active population, namely the women and the young people that did not continue their schooling. Thus, the unemployed population and the students remained the only source for labour to cover the seasonal needs of some industries.

With the purpose of solving the above-discussed problems the government introduced a regular compilation of labour force balances and established central and regional bureaus for organized recruitment, regulation and allocation of the labour force.<sup>35</sup> A number of consecutive legislative acts during the period influenced the education and the labour force as follows:

1. A regulation for organized recruitment and allocation of the labour force on the basis of the economic plan was approved. Registration and filing at the labour bureaus for each citizen was introduced.
2. A regime for granting a residence for all towns in the country was adopted.
3. Measures were undertaken for diminishing of the fluctuation of the labour force.
4. Intensive work time was introduced in the construction works and some other industries in order to lessen the negative effect of unfavorable climate conditions, which interfered with the production process.
5. Central allocation of the graduates from specialized and professional schools and institutions was adopted.
6. An urgent training program for qualified labour in the needed specialties was launched.
7. A replacement of the men in good health working on soft jobs by women was organized and implemented. Intensive recruitment of women in enterprises and organizations where the female labour could be utilized was introduced. The Ministry of Education was ordered to give priority to female applicants for the specialized and professional secondary schools in specialties with soft labour conditions.
8. An order for recruitment of the young people that did not continue their education as workers or trainees was issued.
9. An organization of regular brigades of free population, students and workers in different industries was introduced in order to supply with the necessary labour some agricultural units, canning enterprises, etc.

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<sup>35</sup> Decree №129 of the Council of Ministers, 1960, Central State Archives

These policy measures developed a distinctive labour market, in which the demand and supply of labour interacted through a sovereign institutional mediator that took the decisions about recruitment and allocation of labour as well as about wage rates and job positions' requirements. This sovereign mediator attempted to satisfy the demands of the central plan by neglecting the individual interests of each enterprise and each worker.

After transition to a working week of five days had been completed during the period 1967-1975, another shortage of labour emerged.<sup>36</sup> The latter fact as well as the already discussed labour problems reveals that, to a considerable extent, the labour inputs in the production had been overexploited. Thus the economic growth was experienced through exhaustive utilization of at least some of the factors of production, which could not be achieved in that way under democratic political system.

We could draw a conclusion that the listed policy measures had lead to a constant increase of the employed persons in the active population and to a raise in the enrollment rates in the educational system. The need for qualified labour in the different industries was covered to a great extent by the intensive training programs and the expansion of the specialized education. Other positive consequences are: the traditional lower level of women education has been overcome since their active inclusion in the labour was pursued through school and vocational training; the broad inclusion of women has led to the subsequently established equality of both genders in the labour force.

### ***4.3. Individual pursuit of education***

The pursuit of education by the Bulgarian population has often been taken for granted and pointed out as a major factor for the high level of education in the country. However, the access of the population to the educational system up to 1944 was rather restricted. The communist policy measures for stimulating the school attainment of the population and the availability of free of charge education in all educational levels were key determinants for significant improvement of the educational structure of the population. These key determinants should have provided for a rather big share of the highly educated population by the end of a period of thirty or forty years.

Notwithstanding the latter assumption, compared to other countries, in the middle of the 80s Bulgaria took almost the last place in Europe with respect to the number of university students per capita. At the time we had 126 students per every 10 000 persons of the population, while this number in Austria was 231, in France - 236, in West Germany – 255, in the Netherlands – 270, in the USSR – 185, in East Germany – 258, and in the US and Canada during the period the number of university students was respectively 515 and 509.<sup>37</sup> It turned out that the communist government improved to a certain extent the educational structure of the population, but in spite of its almost permanent needs for highly qualified labour, it could not motivate its citizens to go after additional schooling, training and especially university education. At the end of the communism the predominant part of the population still held secondary or lower-level school diploma.

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<sup>36</sup> Berov, L., *Economic History*, 1994, p. 657

<sup>37</sup> *The Peoples Republic of Bulgaria and the World in Figures*, CSO, 1986



Therefore, the pursuit of education could partially explain the improvement of the educational structure of certain social groups during the communist years. If we assume that the pursuit of education is expressed by continuing studying after secondary school, then during the communism around 6-7 % of the population was characterized by such a pursuit. This share was rather low, as well as the share of the secondary school graduates, therefore this pursuit of education could not be attributed to the whole population. Unquestionably there were positive changes in the successive generations, but they were slow and did not lead to the diffusion of the higher education observed in the other countries.

In conclusion we could say that a certain part of the population was characterized by a pursuit of education, and that part succeeded to receive a good education due to the policy measures at the time. However, the major part of the population was not motivated to complete neither university education nor secondary school.

Then, what are the reasons for the lack of motivation for continuing studies among the major part of the population in Bulgaria? And what are the reasons, which still motivate another part of the population to continue their education?

During the transition a constantly growing interest in better education is observed, as opposed to the phasing out of the programs in support of the students and the educational institutions. So, what is the factor that affects this increasing pursuit of education in the recent years?

In order to explain partially the significant improvement of the educational structure in the transition, we would look for a reason for the lack of motivation for education during the communism.

Among the most clearly stated findings in economic research is that the higher the educational level of the individuals, the better they are paid for their work.<sup>38</sup> Then, having a free of charge education and ensured professional realization after graduation during the communism, we should expect the population to demonstrate a strong pursuit of education. A main reason for the lack of such pursuit is that the structure of the wage rates at the time does not create incentives for rising of the educational level.

During communism the wages of each labour category were centrally determined, and there was no clear differentiation between the workers with lower level and those with higher level of education. In 1968 there was a tendency for lower incomes of the illiterate workers, but there was no tendency for higher incomes of those with secondary and post-secondary education (Chart C11). The income differences between the people with secondary and postsecondary education and the people with primary education were not significant, although in favor of the better educated. In 1986 there was a tendency among the better-educated workers to receive higher wages, but again the difference between secondary school and university graduates was not large: around 53% of both groups received wages close to the country average – between 150 and 250 leva (Chart C12).

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<sup>38</sup> Pritchett, L., "Where has all the education gone?", The World Bank, 1999

By investigating the respective income groups we find that the two highest income groups were distributed evenly among persons with university, secondary and primary education, with primary school graduates prevailing in the highest income group (Chart C13).

It is indicative that 83% of the primary school graduates in the late 70s pointed the high payment as the most important prerequisite for obtaining satisfaction from labour, while this share among the university graduates was barely 30%. The majority of the latter group pointed that the most important prerequisite for them is to have a job that is interesting or of social benefit.<sup>39</sup>

Despite the fact that here we do not investigate the reasons for wage differentiation by educational level, we can infer that the completion of higher education was not related to expected higher future income, as in the case of developed market economies. Considering the efforts made by the studying person aiming at a higher educational level, the devoted time, the forgone labour income during the period of study and the expenses related to continuing one's education, practically the more rational individuals chose a job that is guaranteed anyway by the centrally-planned state, and which required a lower level of education, being at the same time better (or at least not worse) paid.

In transition the development of the private sector and of the market economy contributed for an increasing significance of education, skills and knowledge concerning the level of compensation. In 2002 there was a clear distinction in the level of payment with respect of the educational level (Chart C14). The country average gross wage of those having a Bachelor or a Master degree was 408 leva, while that of the secondary-school graduates was almost two times lower: 244 leva. I.e., in the recent years we observe an increasing valuation of education in the labour market. That is why the increasing pursuit of higher levels of education can be largely explained with the expected higher future incomes after graduation.

## **V. Conclusions and discussion**

Bulgaria entered communism with extremely underdeveloped human resources. During the entire communist period the government tried to provide the best possible conditions for the enhancement of the educational structure of the population and succeeded to alter significantly the status quo inherited after the World War II. Nevertheless, at the start of transition to market economy, which coincided with the entrance of the world economy in the era of information and communication technologies, in Bulgaria about 60% of the population was with primary or lower-level education.

The lack of economic incentives determined the weak pursuit of better education on behalf of a considerable part of society in spite of the free access to it. As a result two polar groups were formed – a lower-educated one, and a higher-educated one whose presence affects the economic development of the country even today.

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<sup>39</sup> Minkov, M., *Characteristics of the Bulgarian Population: Labour Potentials and Realization*, 1984, p. 443

It turns out that the prevailing share of the problems regarding the human capital in Bulgaria today is inherited from the years of communism. The increase of the small share of highly-educated persons is significant during the last 15 years. There is still a clearly distinguished social group of poorly educated persons: about 30% of the active population has primary or lower-level education. Besides that, the appearance of return to education on the microeconomic level in the years of transition is yet to contribute for the establishment of adequate incentives for the improvement of the entire educational system in Bulgaria.

It is important to note that the present study ignores the qualitative characteristics of education, which, if considered, may lead to reevaluation of the achieved advancement both in the last 15 years and during the communist period. The number of diplomas issued does not guarantee a high quality of education if it is not adjusted for the real human capital created in the process of education.

On the basis of the data and analysis presented here, we may make the following conclusions relating to the policies aiming at increasing the human capital of the labour force:

- The policies of free access to education are ineffective in improving significantly and sustaining the educational structure of the population in the long run, if they are not bound to economic incentives for the individuals to get better education.
- The policies for mobilization of the work force may lead to success if certain political and economic circumstances are present, but they can hardly affect the individual motivation for work or advancing qualifications. The experience of the communist governments proves that the only incentives influencing the motivation for work are the economic ones.
- The increase of labour productivity is related both with increasing the level of knowledge and skills and with increasing the motivation for work. The policies for promoting labour productivity increases should be targeted both at improving the knowledge and skills of the workers and at increasing their motivation for work. The policy for enhancing the educational level of the population may not lead to the creation of human capital if it is not accompanied by measures for monitoring and ensuring a standard quality of the provided education. The quality of education is related not only to the institutional and market environment but also with the motivation for work of the persons who provide education: teachers, professors, civil servants, researchers, etc.

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## **Tables and charts**

*Table A1: National empirical sociological surveys used in the present analysis*

<b>Year of the survey</b>	<b>Survey; Institution, which conducted the survey</b>	<b>Number of respondents</b>	<b>Title of the publication with the findings</b>	<b>Year of edition</b>	<b>Publisher</b>	<b>Number of circulation</b>
1968	Empirical sociological survey "The Town and the Village - 68"; Institute of Sociology at the BAS	18 994	The Sociological Structure of the Contemporary Bulgarian Society	1976	BAS	2 000
1977-1978	An empirical study on the Bulgarian population, following an order of the Council of State with the financing support of the UN; Institute of Sociology, Institute of Morphology, Institute of Economy, Institute of ethnography, and Institute of Geography at the BAS	18 438	Characteristics of the Bulgarian Population: Labour potentials and realization	1984	Science and Arts	1 612
1978	Institute of Sociology at the BAS, Committee of the Information at the Council of Ministers	18 740	Social Class Structure of the Contemporary Bulgaria Society	1986	Science and Arts	770
1986	A repetition of the empirical sociological survey "The Town and the Village" and an integrated part of the census; Institute of Sociology at the BAS, Central Statistical Office at the Council of Ministers	10 381	Empirical Sociological Survey "The Town and the Village-86"  Volume I: Regional Communities; Volume II: Sociological Interactions; Volume III: Sociological Analysis and Conclusions	1988	CSO	800

*Table A2: Main archives of the Council of Ministers and other government departments used in the present analysis*

<b>Year</b>	<b>Archives</b>	<b>Regarding</b>	<b>Institution</b>	<b>Key words</b>
1952	Report and draft law	Liquidation of illiteracy	Ministry of Education	Education
1951 - 1953	Reports	Learning the adult population to read and write	Ministry of Education	Education
1960	Decree №108	The further improvement of the system of planning the economy	Council of Ministers	Central planning
1960	Decree №129	The proper recruitment and allocation of the labour force for the necessities of the economy	Council of Ministers	Labour force
1960	Decree №151	Approval of new wage rates	Council of Ministers	Labour force
1960	Decree №166	Surmounting the shortage of labour force in some industries and approval of Regulation for organized recruitment and distribution of the labour force	Council of Ministers	Labour force
1960	Decree №174	Professional training and provision of work for the youth under 18, who do not continue their education	Council of Ministers	Labour force
1963	Resolution №15	Job positions for specialists	Committee of Labour and Prices	Labour force
1963	Resolution №30	Inspection of the organization of the production, the labour and the wage rates	Committee of Labour and Prices	Labour force
1963	Resolution №31	Preparation of top and middle managers, and executive staff for the economy	Committee of Labour and Prices	Labour force
1964	Decree №28	List of facts, intelligence and objects, which are considered as state secret	Council of Ministers	State secret
1964	Decree №216	Protection of the state secret	Council of Ministers	State secret
1965	Resolution №16	Recruitment of human resources with foreign languages skills on a part time basis	Committee of Labour and Prices	Labour force
1963 - 1965	Reports	Reports put forward to the Council of Ministers	Committee of Labour and Prices	Labour force
1966	Project proposal to the UN, report	Center for training of executive engineers and economists and report on the qualification of the management resources in the economy	Committee of Labour and Salary	Education
1967	Decree №65	Protection of the state secret	Council of Ministers	State secret
1971	Decree №31	Protection of the state and the office secret	Council of Ministers	State secret
1973	Decree №28	Protection of the state secret	Council of Ministers	State secret
1976	Decree №45	List of facts, intelligence and objects, which are considered as state secret	Council of Ministers	State secret
1977	Ordinance №666	List of intelligence, defined as office secret at the CLS	Committee of Labour and Salary	Office secret
1980	Decree №30	List of facts, intelligence and objects, which are considered as state secret	Council of Ministers	State secret
1977 - 1981	Reports	Reports put forward to the Council of Ministers	Committee of Labour and Salary	Labour force
1985	Decree №15	Accelerated development of the educational system in some regions	Council of Ministers	Education
1986	Decree №5	Even and planned regional distribution of the labour resources up to 2000	Council of Ministers	Labour force



**Table B1: Literate population by ethnic groups, %**

<b>Year</b>	<b>1910</b>	<b>1920</b>	<b>1926</b>
Bulgarians	38.3	50.9	54.4
Jews	60.7	69	71.3
Armenians	59.5	64	59.5
Turks	6	8.7	12
Gypsies	3.4	6	8.2
<i>Total</i>	<i>33.5</i>	<i>44.5</i>	<i>47.9</i>

*Source: Statistical Yearbook of the Kingdom of Bulgaria, 1936*

**Table B2: Social class structure as of 09.09.1944**

<b>Social status</b>	<b>%</b>
Workers (including sector Agriculture)	20
Poor and average villagers	62.85
Poor and average craftsmen and traders	6.31
Bourgeoisie (including rural)	1.88
Clerks	6.69
Intellectuals	2.09
Undisclosed and other	0.18
<i>Total</i>	<i>100</i>

*Source: „The Town and the Village- 68”*

**Table B3: Distribution of the population at the age of 8 or more by level of education according to the census data, %**

	<b>1934</b>	<b>1946</b>	<b>1956</b>	<b>1965</b>	<b>1975</b>	<b>1985</b>	<b>1992</b>	<b>2001</b>
University education	0.7	0.9	1.7	2.4	4.1	6.3	7.9	9.8
Secondary and college education	2.7	4.6	8.9	12.3	20.8	30.7	37.0	42.8
Primary education	9	18.7	24.9	32.0	34.2	32.7	30.4	27.3
Below primary education	87.6	75.7	64.5	53.3	40.9	30.3	24.6	20.1
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

*Source: Main Findings from the Census: CSO, 1986; NSI, 2004*

**Table B4: Graduates by type of institution, 1945-1985**

<b>Number</b>	<b>1945-1950</b>	<b>1956-1960</b>	<b>1961-1965</b>	<b>1966-1970</b>	<b>1971-1975</b>	<b>1976-1980</b>	<b>1981-1985</b>
Universities	17860	29591	35024	59275	71148	93881	80560
Colleges	6244	8467	17633	21707	22516	60647	24246
Secondary schools	200194	230976	346214	478668	546867	534295	478161
<b>Chain dynamics, %</b>	<b>1945-1950</b>	<b>1956-1960</b>	<b>1961-1965</b>	<b>1966-1970</b>	<b>1971-1975</b>	<b>1976-1980</b>	<b>1981-1985</b>
Universities		66%	18%	69%	20%	32%	-14%
Colleges		36%	108%	23%	4%	169%	-60%
Secondary schools		15%	50%	38%	14%	-2%	-11%
<b>Changed compared to 1945, %</b>	<b>1945-1950</b>	<b>1956-1960</b>	<b>1961-1965</b>	<b>1966-1970</b>	<b>1971-1975</b>	<b>1976-1980</b>	<b>1981-1985</b>
Universities		66%	96%	232%	298%	423%	351%
Colleges		36%	182%	248%	261%	871%	288%
Secondary schools		15%	73%	139%	173%	167%	139%

*Source: Statistical Yearbook, 1986; Own calculations*

**Table B5: Educational structure of the population in the age group 25-64, %**

<b>Level of completed education</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Primary or lower education	32	32	29	28	29
Secondary education	50	50	50	51	50
Higher education					
College	5	6	7	6	6
University	13	12	14	15	15
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

*Source: Education in the Republic of Bulgaria 2004, NSI*

**Table B6: Net enrollment rates of the population in the educational system**

<b>Educational level</b>	<b>1994/95</b>	<b>1995/96</b>	<b>1996/97</b>	<b>1997/98</b>	<b>1998/99</b>	<b>1999/00</b>	<b>2000/01</b>	<b>2001/02</b>	<b>2002/03</b>	<b>2003/04<sup>1</sup></b>
Elementary education (I-IV grade)	92.8	94.9	95.5	96	96.8	96.4	96.3	98.5	99.8	100.3
Secondary education (IX-XIII grade)	61.4	61.5	61.5	61.3	61.6	63.1	64.7	68.3	74.9	77.1
Universities and specialized higher education institutions	18.8	20.6	21.4	21.6	23.4	24	23	22.8	23.9	24.1

*Source: NSI*

**Table B7: Workers and clerks by level of education, %**

<b>Completed education</b>	<b>1958</b>	<b>1981</b>	<b>1986</b>
University	6	7.2	8.2
College	10.5	3.6	3.5
Specialized secondary		11.7	15.6
General secondary	10.9	17.4	21
Primary or lower	72.6	60.1	50.6
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>

*Source: Dobroslavska, 1990, p. 126-127*

**Table B8: Specialists with university, college and specialized secondary education in Bulgaria in the period 1970-1988 as a percentage of total employment**

<b>Completed education</b>	<b>1970</b>	<b>1974</b>	<b>1980</b>	<b>1983</b>	<b>1986</b>	<b>1988</b>
University	5.94	5.83	6.83	7.35	7.94	8.25
College	2.38	2.35	3.47	3.40	3.36	3.30
Specialized secondary	10.65	11.04	11.02	11.89	13.57	13.64
<i>Total</i>	<i>18.97</i>	<i>19.23</i>	<i>21.33</i>	<i>22.65</i>	<i>24.88</i>	<i>25.20</i>

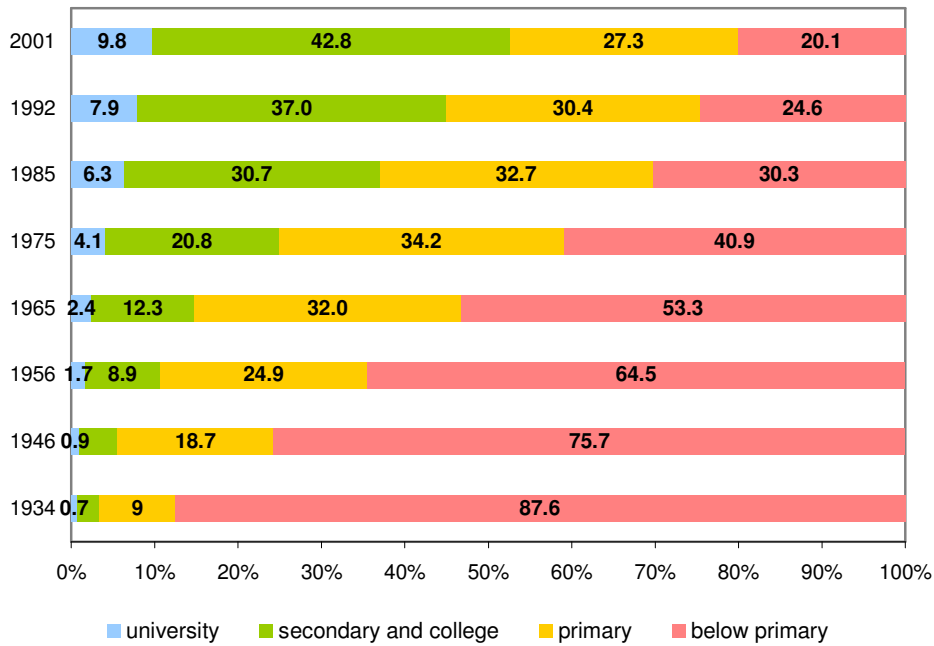
*Source: Own calculations based on Dobroslavska, 1990 and the CSO statistical yearbooks for the period 1972-1989*

**Table B9: Completed level of education of three successive generations**

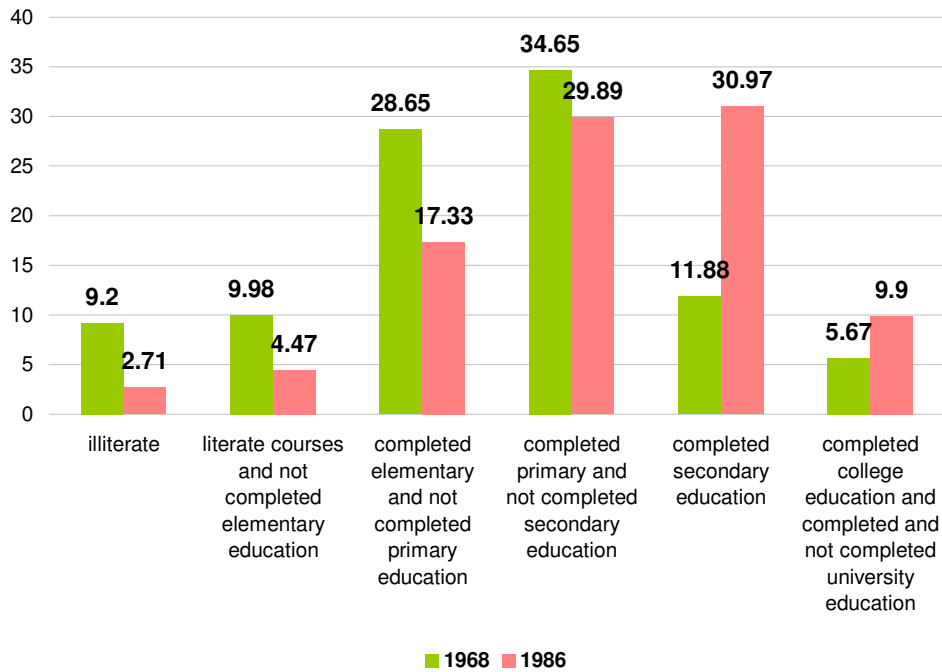
<b>Completed education</b>	<b>Grandfather</b>	<b>Father</b>	<b>Child</b>
Illiterate – no schooling	<b>9.96</b>	<b>2.7</b>	<b>0.21</b>
Literate courses only	<b>12.99</b>	<b>4.46</b>	<b>0.12</b>
Elementary education	<b>31.62</b>	<b>17.3</b>	<b>1.29</b>
Primary education	<b>27.79</b>	<b>29.89</b>	<b>9.29</b>
Secondary education	<b>10.73</b>	<b>30.98</b>	<b>24.34</b>
College or university education	<b>4.59</b>	<b>9.94</b>	<b>8.7</b>

*Source: "The Town and the Village -86"*

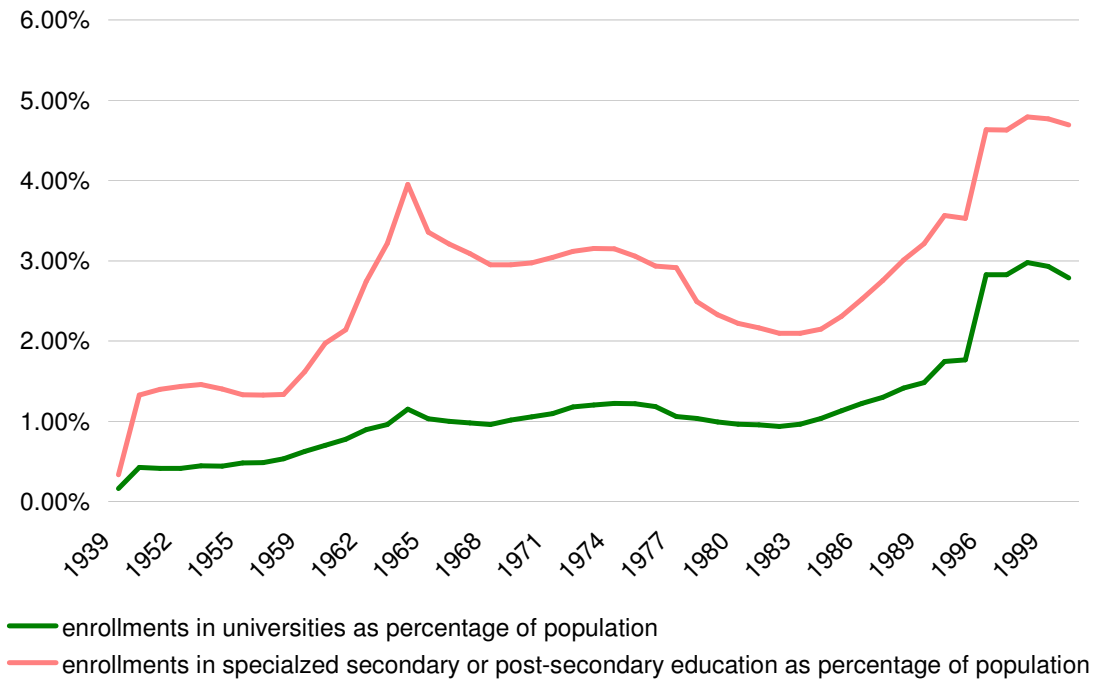
**Chart C1: Educational structure of the population according to censuses; Source: NSI**



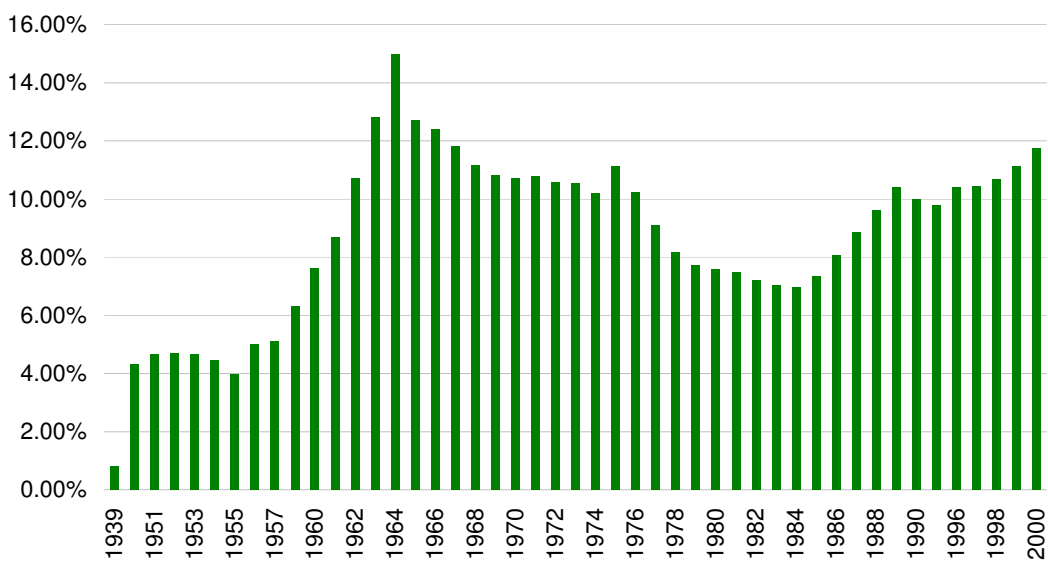
**Chart C2: Educational structure of the population at the age of 16 and more, %; Source: “The Town and the Village-86” (for 1986 the sum of the shares makes 100 after addition of the studying individuals – 4.73%)**



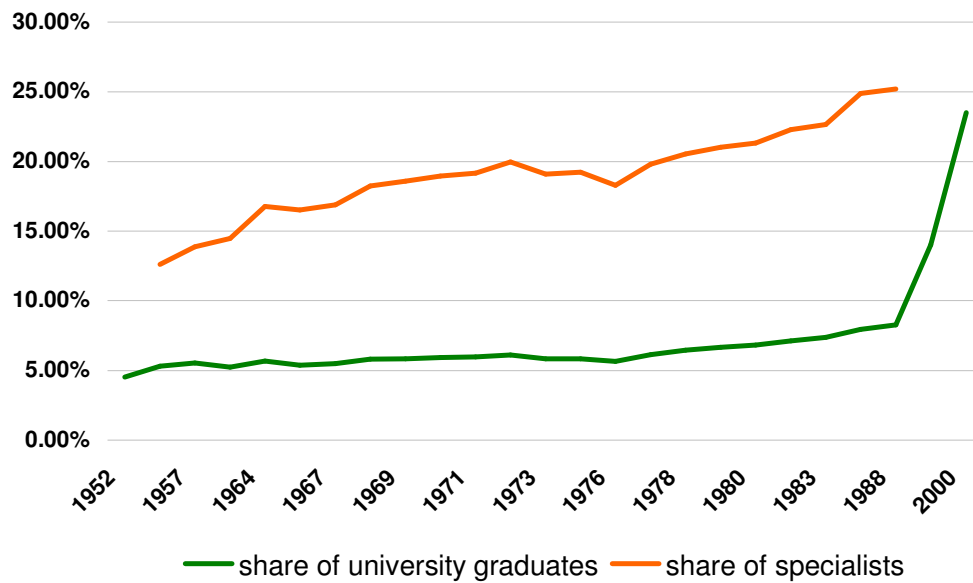
**Chart C3: Enrollment rates of the population in university education and net enrollment rates of the population in specialized secondary and post-secondary education, 1939–2000; Source: own calculations based on the CSO and NSI statistical yearbooks**



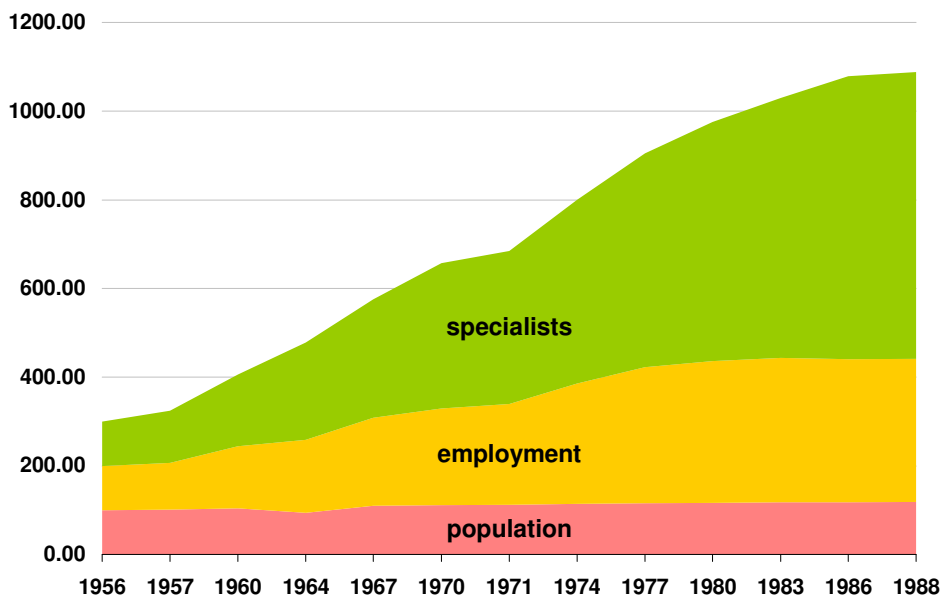
**Chart C4: Enrollment rates of the population in the age group 10- 19 in the specialized secondary education, 1939-2000; Source: own calculations based on the CSO and NSI statistical yearbooks**



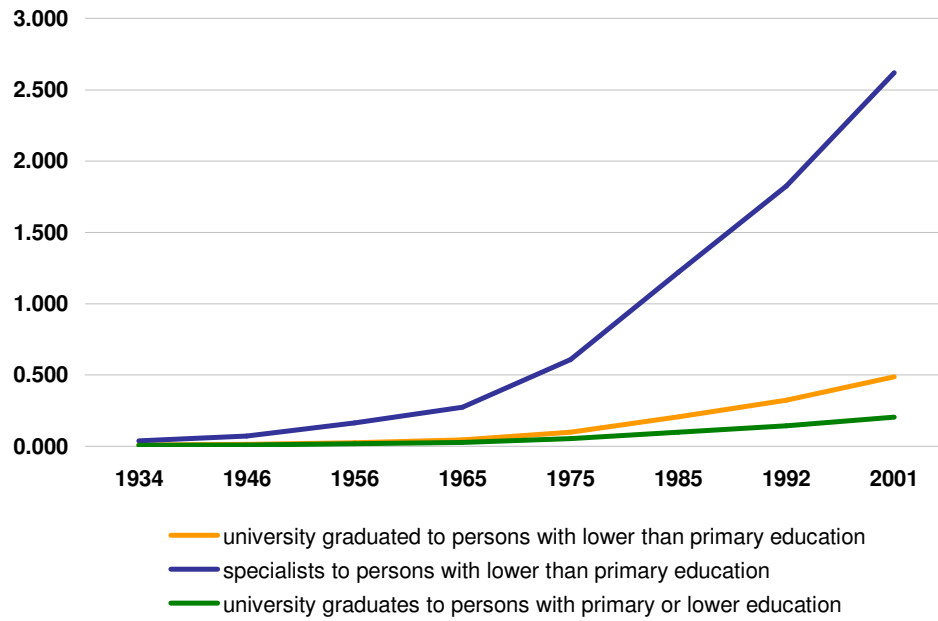
**Chart C5: Specialists with university, college and specialized secondary education, and university graduates as percentage of total employment, 1952–2000; Source: own calculations based on the CSO and NSI statistical yearbooks**



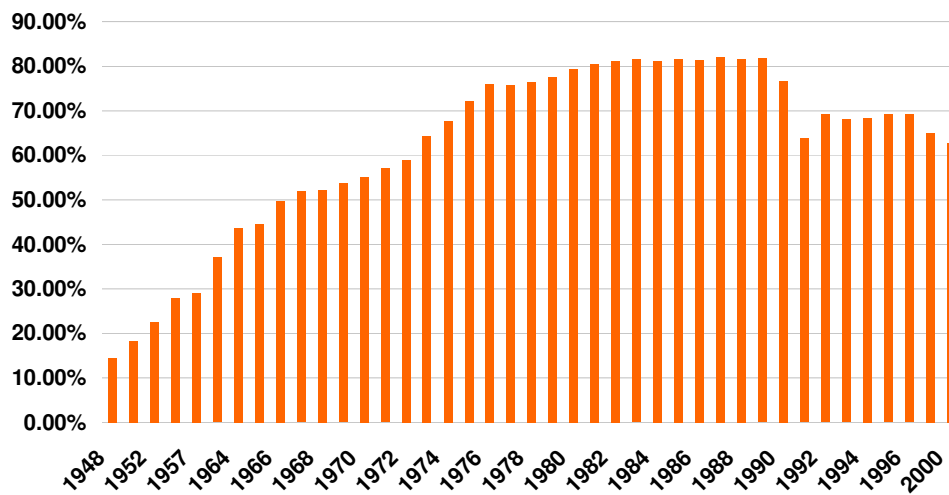
**Chart C6: Index changes of population, employment and specialists with university, college and specialized secondary education, 1956=100; Source: own calculations based on the CSO statistical yearbooks for the period 1956–1989**



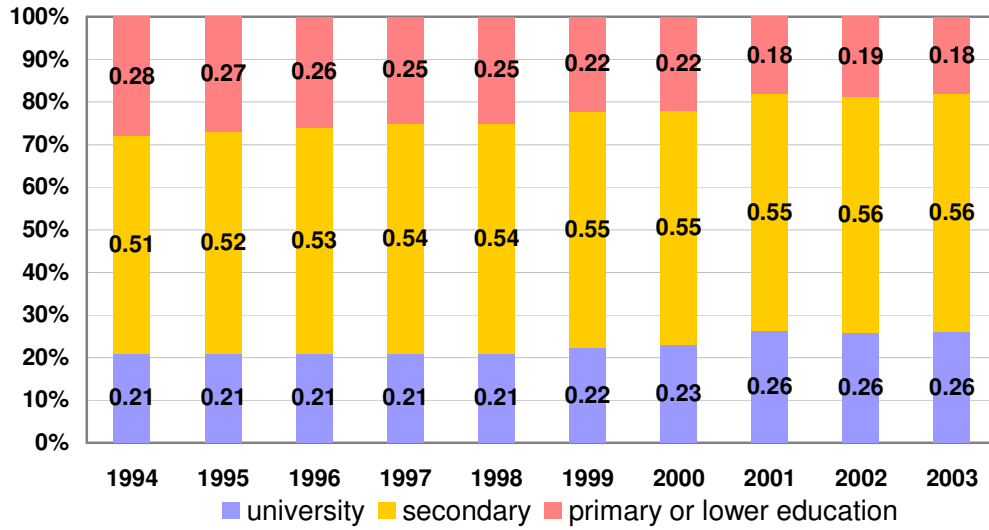
**Chart C7: Ratios of better educated to poorly educated population; Source: own calculations based on the census data**



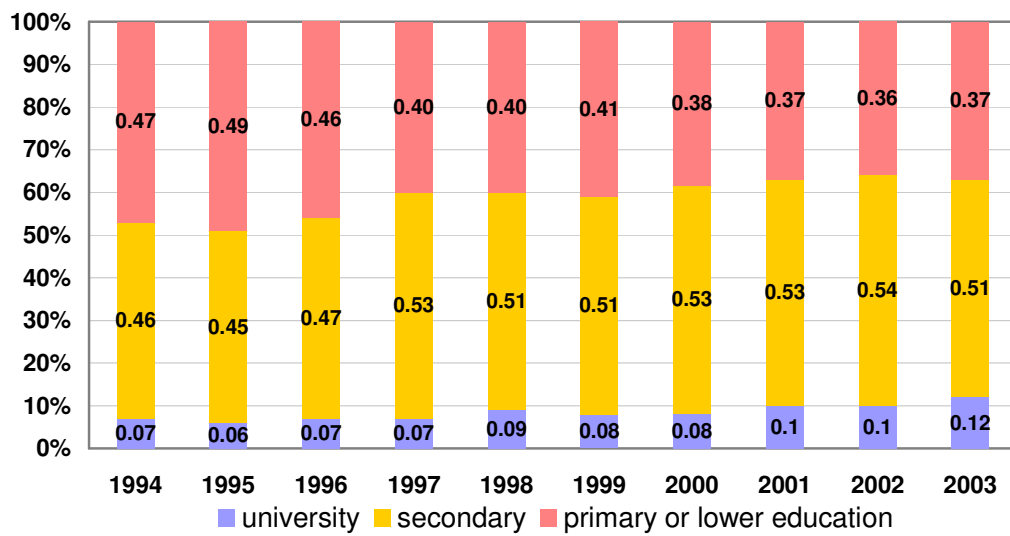
**Chart C8: Share of the employed persons of the active population, 1948-2000; Source: own calculations based on the statistical yearbooks, CSO, NSI**



*Chart C9: Educational structure of employed, 1994-2003; Source: own calculations based on NSI data*

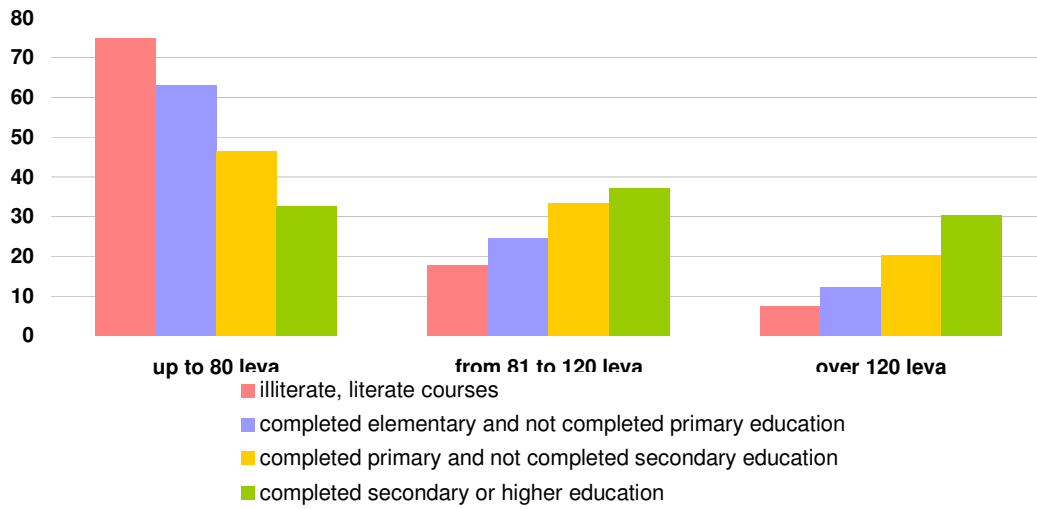


*Chart C10: Educational structure of unemployed, 1994-2003; Source: own calculations based on NSI data*

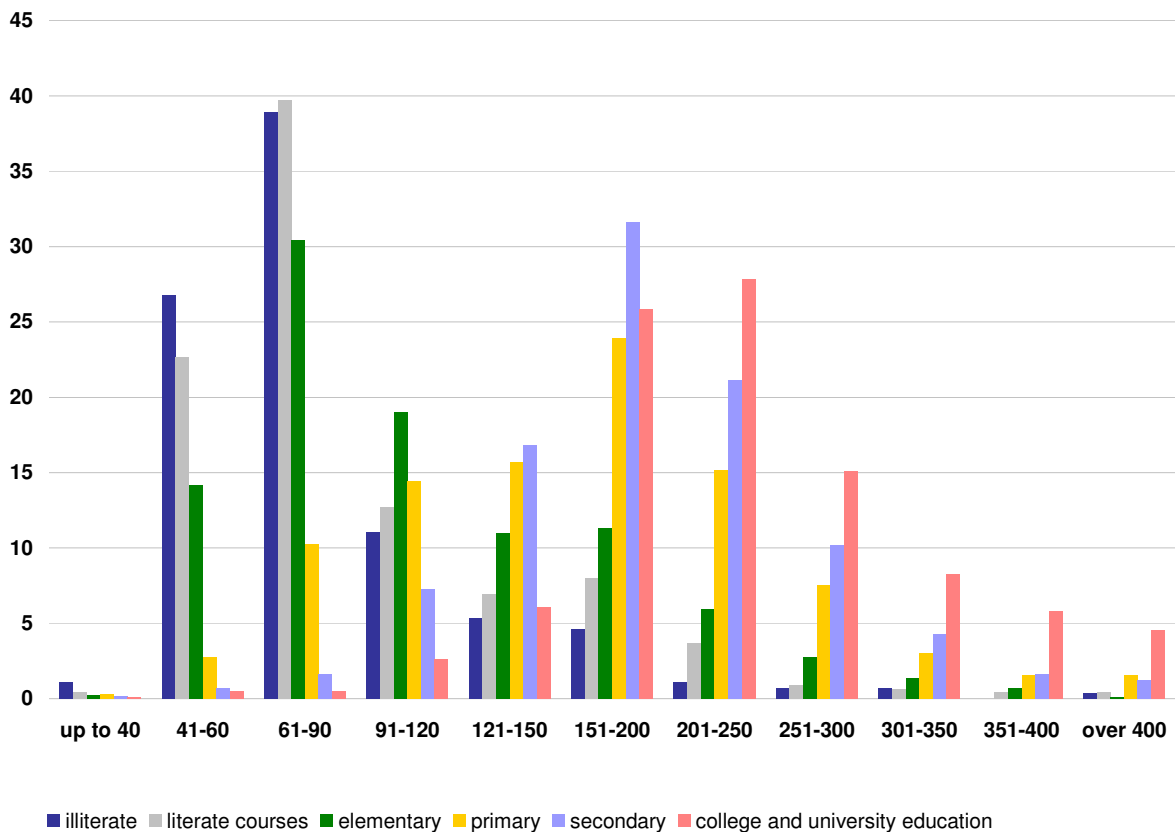




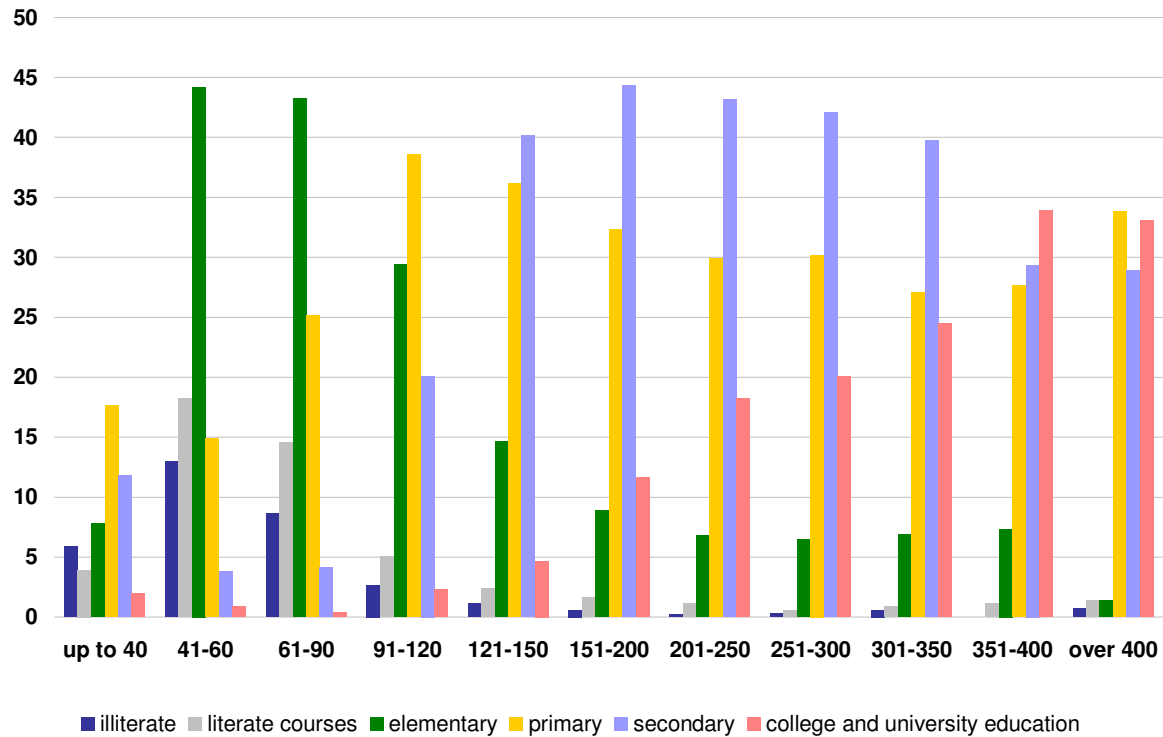
**Chart C11: Distribution of income within the respective educational groups, 1968, %;**  
**Source: “The Town and the Village–68”**



**Chart C12: Distribution of income (in leva) within the respective educational groups, 1986, %;**  
**Source: “The Town and the Village–86”**



**Chart C13: Distribution of income (in leva) by level of education within the respective income groups, 1986, %; Source “The Town and the Village-86”**



**Chart C14: Average gross monthly salary (in leva) by level of education, 2002, NSI**

