REGIONAL ANALYSIS OF HUMAN RESOURCES IN THE PROVINCE OF STARA ZAGORA

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ABSTRACT
Human resources remain the most valuable factor for the development of any economic activity, despite the fact that we live in a dynamically developing and highly advanced technological time. The report aims to trace the various indicators describing the demographic state and the labour market in the province of Stara Zagora. The methods which are used in the present research are: growth rate, population growth, structural analysis, index analysis and SWOT analysis. The indicators are population size, natural growth, mechanical growth, educational structure, coefficient of employment, coefficient of economic activity and coefficient of unemployment. The results of the study reflect the changes in the observed demographic and economic characteristics of the province of Stara Zagora for the period from 2015 to 2020. Data from the National statistical institute is used to ensure the reliability of the research. The conclusions point to the search for and implementation of effective solutions that will lead to the discovery of potential opportunities for development of the province of Stara Zagora through the use of human resources, as well as dealing with the problems and challenges associated with them.

Key words: human resources, demographic indicators, labour market, province of Stara Zagora

INTRODUCTION
Human resource development has definitively become one of the most important prerequisites for a successful adaptation to the economy, society and life in general. In this sense, an increasing attention has been paid to the value of abilities, skills, and competences, with the motivation to apply them to work experience as a major factor (1). The term *human resources* describes a group of people who are physically and psychologically fit to perform work or another social activity. They have a complicated structure of certain quantity and quality of personnel parameters in a given organization or workforce in a region, territory or the country, as a whole. These parameters include health status,

education, abilities, potential, professional competence, personal qualities, etc. (2)

The performance of regional analysis of human resources has been driven by the need to trace the state of the human factor as one of the main and irreplaceable production factors. Goal achievement in the organization is based on the capacity of its employees. That is why one of the main priorities of management is the provision of human resources, who have the necessary knowledge, abilities and experience to efficiently tackle their tasks within the organization and contribute to its development. (3) "The manager must look into the faces of the personalities he manages to find out that they are the most important resource." (4)

The present report reviews human resources in the province of Stara Zagora. It is situated in the South-East region (SER) and is one of the five

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biggest provinces in Bulgaria, spreading over 5151.1 km². According to NSI data in 2020 the province is inhabited by 4.5% of the country's population, which makes it fifth in terms of this indicator. Within the province of Stara Zagora there are 206 living areas, of which 10 towns and 196 villages. (5) It is necessary to mention that the COVID-19 pandemic brought changes on a regional and national scale, among which multiple negative events in economic life. For a comparatively short period of time there has been an increase in the rate of unemployment, a collapse of the healthcare systems, online learning and work environment, digitalization of the economy, etc. (1)

Due to the COVID-19 outbreak and its global spread, the year 2020 will remain in history as an unusual, dynamic and very difficult year. The province of Stara Zagora, as well as the other provinces of the country suffered unfavorable events, mostly in economic respect. The present report aims to reflect on how the regional profile of human resources in the province of Stara Zagora has changed in the last six years at the background of looming challenges of various nature.

METHODS
The present study traces several main parameters reflecting the demographic state and labour market in the province of Stara Zagora over the period of 2015-2020. The demographic state is described by population size, natural growth, mechanical growth, educational structure and population structure below, of and beyond working age. In order to trace the labour market, the following economic indicators have been analyzed: workforce (economically active persons), coefficient of economic activity, coefficient of employment and coefficient of unemployment. Described are the changes observed each year against the previous, and special attention is paid to the changes in 2020 against the preceding five years. This is necessitated by the COVID-19 pandemic and its reflection on each sphere of people's life. The methods, applied to the current research include: growth rate, population growth, structural analysis, index analysis and SWOT analysis. Apart from the data on the area, additional data on Bulgaria has also been presented in order to outline its advantages or disadvantages as one of the major administrative areas when comparing the values for the respective indicators to their state levels.

RESULTS
During the studied period from 2015 to 2020 the province of Stara Zagora has witnessed a decrease in population levels. The base growth rate shows that population in 2020 against the base level in 2015 has decreased and represents 96,20 %. In comparison between the other years and the base one there is a steady trend to decrease the rates over the whole period. The chain growth rate also shows permanent unfavorable changes in population for each year during the studied period. When comparing the population size over the six years against the base one, the decrease in 2020 against 2015 stands at 12 285 (-3,80%). The biggest drop in population numbers was in 2019 compared to the other years of this period, namely 2960. It is interesting that the population in 2020 has shrunk against 2019 at a lower degree compared to the reduction in the previous years. In 2020 against 2019 figures fell by 1996 people (-0,64%), which may be considered as favorable.

Table 1. *Growth rate of the population in the province of Stara Zagora*

Year	Population size	Base growth		Chain growth rate	
		Coefficient	%	Coefficient	%
2015	323685	-	-	-	-
2016	321377	0.993	99.29	0.993	99.29
2017	319067	0.986	98.57	0.993	99.28
2018	316356	0.977	97.74	0.992	99.15
2019	313396	0.968	96.82	0.991	99.06
2020	311400	0.962	96.20	0.994	99.36

Source: Own calculations based on NSI data (7)

By performing regional analysis of human resources in the province of Stara Zagora it is important to note that the relative share of the population in the province of Stara Zagora over the period of 2015-2020 on a national level has remained the same (4,5%). This is related to the fact that over this period a negative trend of reduction of the population in the area is observed against the total population size of Bulgaria.

Table 2. *Index analysis of the population in the province of Stara Zagora*

Population size	2015	2016	2017	2018	2019	**2020**
Bulgaria	7153784	7101859	7050034	7000039	6951482	6916548
The province of Stara Zagora	323685	321377	319067	316356	313396	311400
Density of the population in the province of Stara Zagora	62,84	62,39	61,94	61,42	60,84	60,45
Index against Bulgaria	97,50 %	97,51 %	97,53 %	97,40 %	97,14 %	97,01 %

Source: Own calculations based on NSI data (7)

On the basis of the performed index analysis on the number and density of the population in the province of Stara Zagora against national levels, we have found that the values of the indices over the studied period 2015-2020 have gradually decreased – respectively from 97,50 % to 97,01 % for the population size index, and from 62,84 to 60,45 for the population density. Despite the observed distancing from the overall country values, the level of indices against the national level remain close to 100 %, which means that the province of Stara Zagora has kept its average position in Bulgaria.
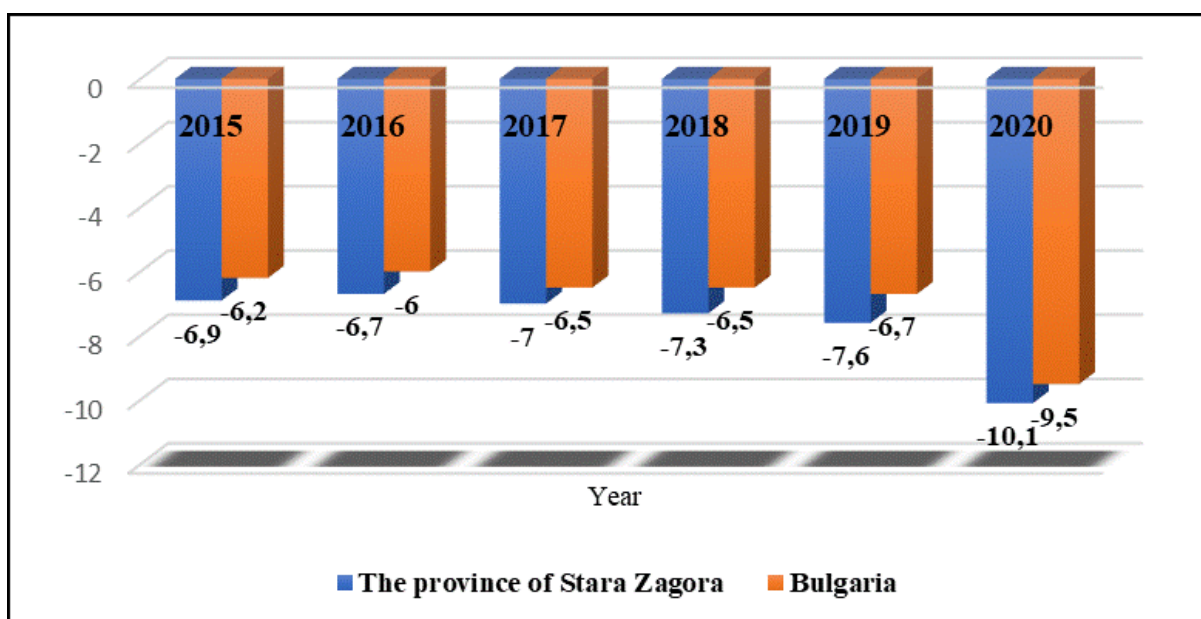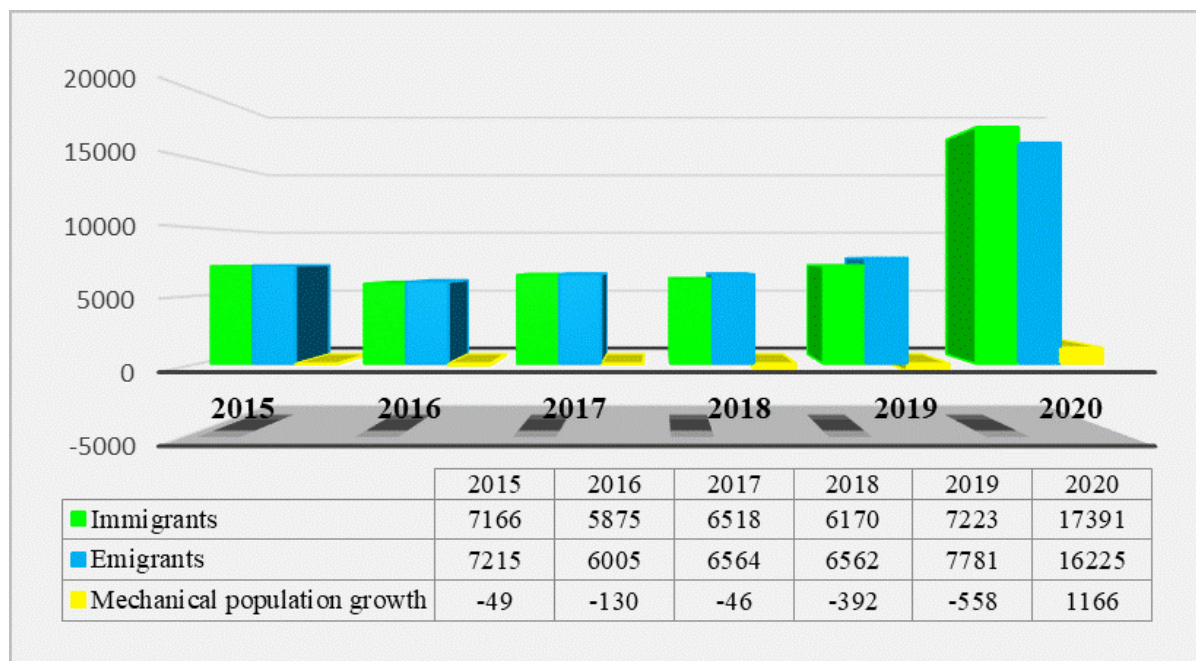

Figure 1. Coefficient of the natural population growth per 1000 people (‰)

As a result of exceeding the death coefficient against the birth coefficient, a negative coefficient of the natural growth over the entire period for the province of Stara Zagora has been observed. In 2015 the percentile ratios were -6,9 ‰, while in 2016 they stood at -6,7 ‰. From 2017 to 2020 there was a negative natural growth in the province, as in 2020 it reached -10,1‰. Compared to the data on the coefficient of the natural population growth in Bulgaria, a higher

negative growth in the province over the whole period is noted, which is due to various demographic, social and economic factors.

	2015	2016	2017	2018	2019	2020
■ Immigrants	7166	5875	6518	6170	7223	17391
■ Emigrants	7215	6005	6564	6562	7781	16225
■ Mechanical population growth	-49	-130	-46	-392	-558	1166

Figure 2. Mechanical population growth in the province of Stara Zagora

During the reviewed period from 2015 to 2019 a negative mechanical growth has been observed in the province of Stara Zagora. The lowest reduction was noted in 2017 when the mechanical growth was -46, while the highest was in 2019 (-558). In 2020, however, we noted a positive mechanical growth of 1166 people. The mechanical mobility of the population is related to inner and outer migration. Inner migration is directed mostly to the town of Stara Zagora, while the outer migration is directed both to other Bulgarian towns, and to other countries. Among the most preferred living areas in the country to which residents of the province of Stara Zagora have migrated are the capital city and the town of Plovdiv. (10)

Table 3. *Population below, of and beyond working age in the province of Stara Zagora*

Year	Population		
	Below working age	**Of working age**	**Beyond working age**
2015	15,4 %	59,1 %	25,5 %
2016	15,5 %	58,9 %	25,6 %
2017	15,7 %	58,6 %	25,7 %
2018	15,9 %	58,3 %	25,8 %
2019	16,0 %	58,1 %	25,9 %
2020	16,1 %	58,2 %	25,7 %

Source: Own representation based on NSI data (11)

Table 3 shows that the largest share is taken by people of working age, yet it must be noted that from 2015 to 2019 this share has shrunk. The second largest share is composed of people

beyond working age which has increased from 2015 to 2019. Even though the smallest share is attributed to people below working age, it has also shown a recent increase. Only in 2020 the share of people of working age has increased at the expense of those beyond working age.

Among the factors that influence the sorting of people into of and beyond working age are unarguably the ageing of population and the regulatory changes regarding retirement age. In 2019 the age ranges of the population of working age have increased as follows: between 16 and 61 years and 4 months for women, and 16 to 64 years and 2 months for men, which leads to a slight increase of the share of the population of working age in 2020. (11)

Table 4. *Educational structure of the population in the province of Stara Zagora*

Year	Elementary or lower education	Secondary education	Higher education
2015	17,6 %	59,8 %	22,6 %
2016	14,9 %	66,5 %	18,6 %
2017	15,0 %	67,3 %	17,8 %
2018	18,0 %	63,0 %	19,0 %
2019	18,7 %	60,6 %	20,7 %

*The table does not include data from 2020, because such are unavailable. Source: NSI (12)

Table 4 shows that during the analyzed period from 2015 to 2019 the largest relative share has been taken by people with secondary education, followed by those with a higher education, and people with elementary or lower education. From 2015 to 2017 there was an increase of the relative share of people with secondary education, while in 2018 and 2019 the relative share of university graduates has increased. This has become a good perspective for increasing the number of people who have a higher educational degree and reveal the potential of human resources in the province of Stara Zagora.
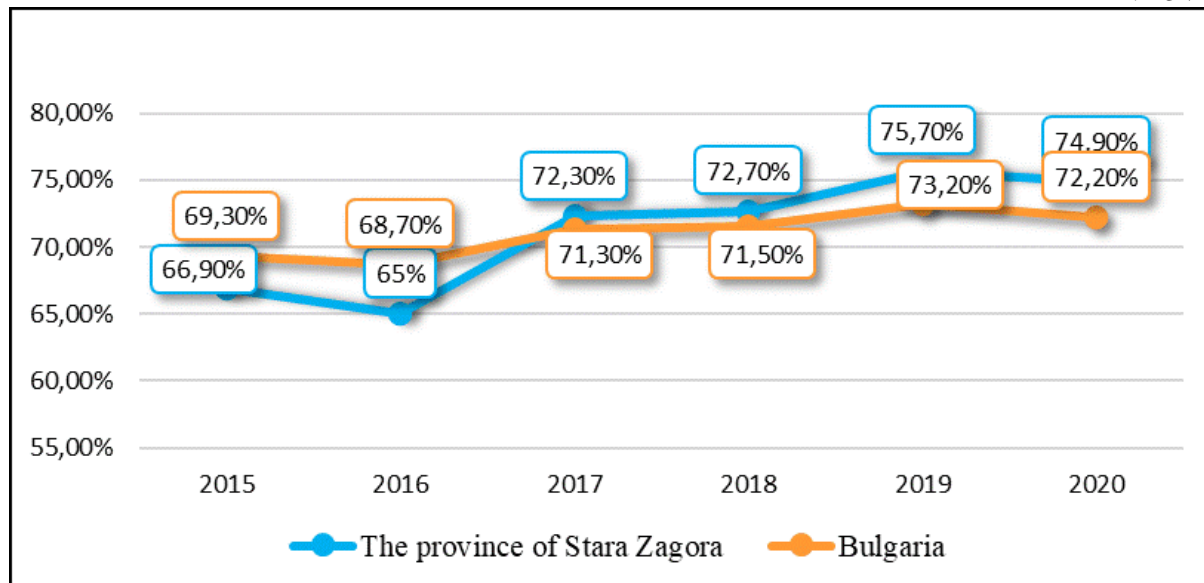
Table 5. *Workforce in the province of Stara Zagora*

Year	Total	Employed	Unemployed
2015	139,4	125,7	13,7
2016	135,1	127,1	8,0
2017	149,1	144,7	4,4
2018	148,5	145,0	(3,4)
2019	152,5	150,4	(2,1)
2020	149,4	146,2	(3,2)

*Some of the data have been shown in brackets, due to the small size of the sample and are not very precise; Source: Own representation based on NSI data (13)

The population of working age is divided into economically active and economically inactive. The economically active population includes two groups – employed and unemployed. The former perform certain activity for payment, while the latter are actively searching for work. (14) **Table 5** shows the workforce (economically active persons in thousands) of the population at 15 or more years in the province of Stara Zagora over the studied period from 2015 to 2020. The results show that over the entire studied period the number of the employed is larger than the number of the unemployed, which is a positive tendency. In 2020, however, there was a drop both in the number of employed, and in the economically active population, while the unemployed in the province have increased. These data correspond to the COVID-19 pandemic which affected and continues to have a negative effect on every sphere of our life.

Figure 3. Coefficient of economic activity in the province of Stara Zagora

According to the resolution of the International Labour Office an economically active population is such a population that is willing and able to work, including the employed, i.e. those who perform labour, and the unemployed, i.e. those who have no work, but are actively searching for one. Economic activity may be influenced by demographic, economic, social, psychological and other factors. (15) Data show that in 2016 against 2015 the coefficient of economic activity in the province of Stara Zagora has decreased, while from 2017 to 2019 it was on the rise. During the first two years the coefficient for the province was lower than the national. However, from 2017 to 2019 the level of economic activity in the province of Stara Zagora has not only increased, but also surpassed the levels of economic activity in Bulgaria. With respect to the economic consequences that occurred due to COVID-19 in 2020 the level of economic activity decreased, both in the province, and the country.
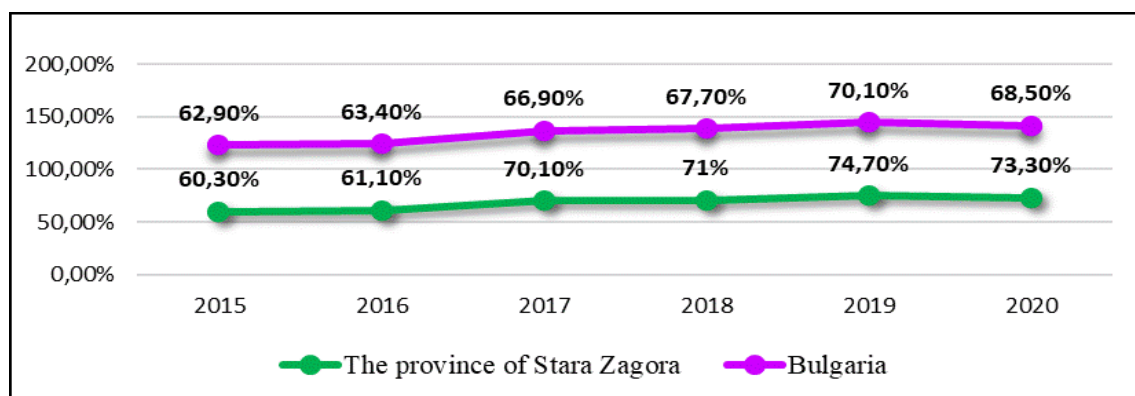
Figure 4. Coefficient of employment in the province of Stara Zagora

The data for the period 2015-2019 regarding the coefficient of employment in the province of Stara Zagora have soared from 60,30 % to 74,70 %. This favorable trend has been observed in the whole country as well, where, however, the growth rate was lower than 62,90 % against the 70,10 % reached during the same period. The study shows that while the coefficient of employment in Bulgaria has grown by 5,6 percentile points over the studied six years, the employment level for the same period in the province of Stara Zagora has risen by 13 percentile points. The biggest progress was noted in 2019 against 2018 where from 71 % the

employment has increased to 74,70 % for the area. One of the strongly negative consequences of the COVID-19 pandemic is that a lot of people have lost their jobs. In this respect there is a reduction of the coefficient of employment in 2020 in the province of Stara Zagora of up to 73,30 % (fall by 1,4 percentile points against 2019) and in Bulgaria of up to 68,50 % (fall by 1,6 percentile points against 2019).
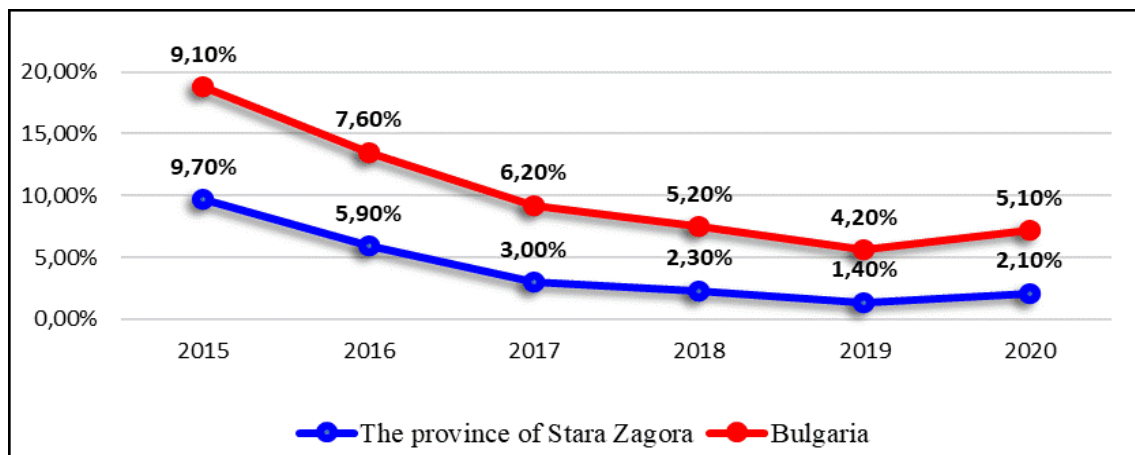

Figure 5. Coefficient of unemployment in the province of Stara Zagora

Unemployment is a phenomenon that is viewed as a form of macroeconomic instability related to detecting fluctuations in economic activity and workforce employment. The high levels of unemployment indicate incomplete and ineffective use of the work resources in a country, which is a very serious economic and social problem. Moreover, unemployment level affects the standard of living and the state of the economy (18). Considering the period between 2015 and 2019 a reduction of the unemployment level from 9,70 % to 1,40 % has been registered in the province of Stara Zagora. Over these five years a good progress has been noted as seen in the unemployment coefficient that decreased by 8,3 percentile points. At the background of the data on the country it must be noted that the area has shown more favorable values. A negative tendency was noted in 2020 which was "scarred" by the COVID-19 pandemic. This has brought to an increase in unemployment both in the area, and in the whole country. The unemployment coefficient for the province of Stara Zagora has reached a level of 2,10 % (a rise by 0,70 percentile points against 2019), while nationally it was 5,10 % (a rise by 0,90 percentile points).

Figure 6 shows a SWOT analysis of human resources in the province of Stara Zagora (19), where the strengths, weaknesses, opportunities

and threats have been revealed. With performed assessment we established the following results: in S-O the grade is 30.34, W-O has 22.14, S-T is graded 25.90, and W-T has a grade of 18.90. As is clearly seen, the highest grade is recorded for S-O, i.e. when strengths and opportunities intersect, which shows that the most suitable strategy of application is the aggressive strategy. In it the stake is on exploiting opportunities which may help the enhancement of strengths. Such measures may be the following:
o Active seeking and leading of negotiations with different Bulgarian and foreign investors that may facilitate the opening of new jobs;
o Organization of various initiatives which may show the strengths of the province to turn it into a more desirable choice for living;
o Encouraging the unemployed to take part in various national and European employment schemes;
o Stimulation of local companies to offer more internship programmes, temporary and permanent employment;
o Popularization of the opportunities for development of agricultural activity and various forms of alternative tourism in rural areas, etc.
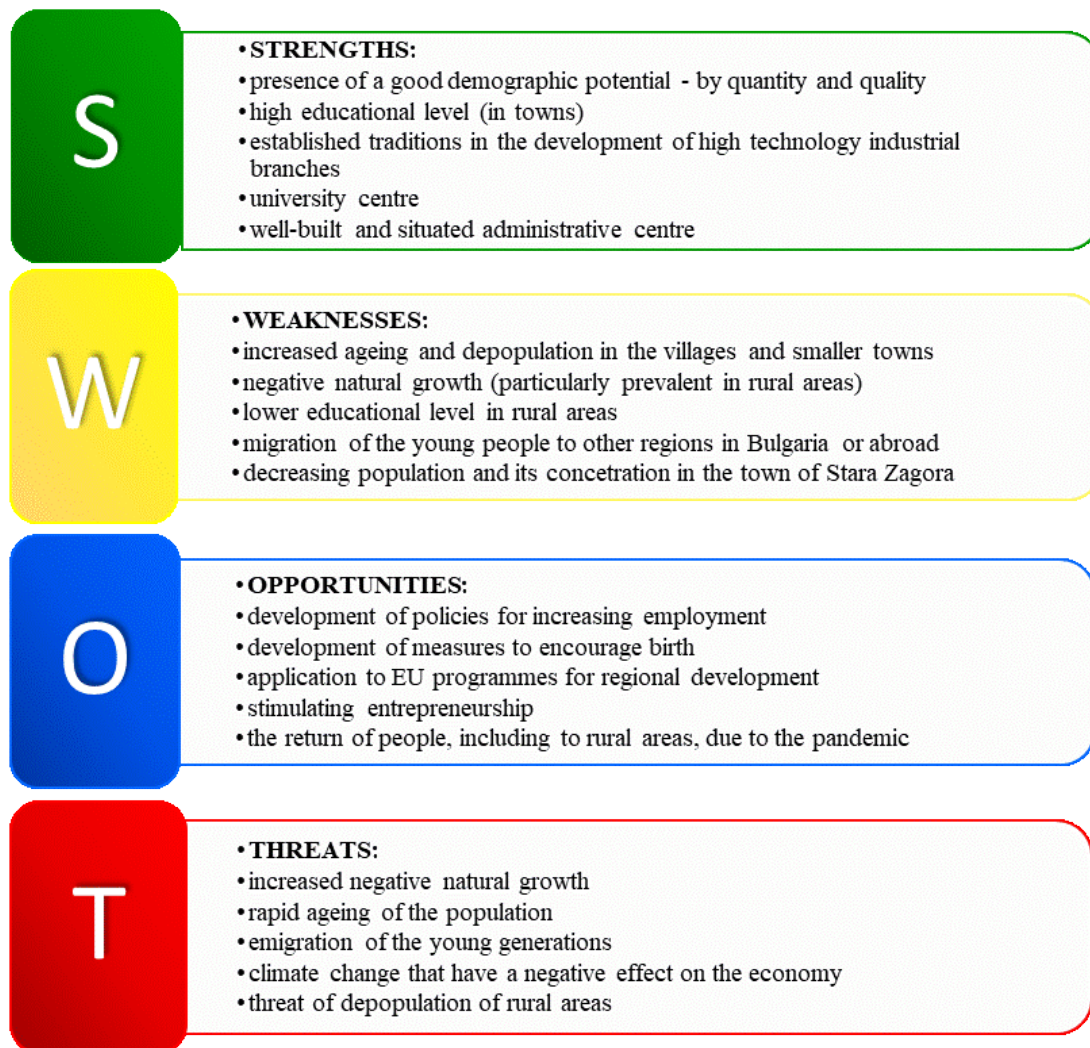
Figure 6. SWOT analysis of human resource in the province of Stara Zagora

CONCLUSION

Drawing on the essence of human resources we understand how each activity, regardless of its labour or socially beneficial character is based namely on this part of population who are economically active. When we look at an area we are certain to collect information about the state of the available human resources, to perform analyses, make assessments and prognoses, etc. The study on the demographic state clarifies various important indicators such as population size, natural and mechanical growth, age structure, educational structure, etc. The analysis of the labour market, on the other hand, shows us different economic indicators, which outline the general economic state of the studied province. On the basis of the performed regional analysis of human resources in the current study we have drawn the following conclusions:

➢ During the observed period from 2015 to 2020 we established a decrease in the population size in the province of Stara Zagora. Data shows that there is a negative coefficient of the natural growth over the entire period. At the background of worsened demographic situation in the country this unfortunately is not a new phenomenon. It is necessary to mention that mortality in the entire country in 2020 has risen as a result of the spread of COVID-19. Local polices for encouraging birth and retaining young families must be developed.

➢ The data on the mechanical mobility show a very favorable phenomenon. While between 2015 and 2019 the number of those who left the province has exceeded the number of those who settled in, in 2020 there was a positive mechanical growth. As a negative trend in this case we can note the fact that the greater part of

the population is concentrated in the town of Stara Zagora which leads to higher depopulation rate in rural areas.

➢ By analyzing the population below, of and beyond working age we have found that the largest share is taken by the population of working age over the entire studied period. We cannot avoid mentioning the worrisome tendency of ageing of the population of the whole country. The educational structure shows that the largest relative share of the population between 25 and 64 years of age is taken up by people with secondary education. However, the number of university graduates is growing and it is expected to rise even more in future, as well.

➢ The data on the workforce in the province show that during all these years the number of the employed is higher than the number of the unemployed. It is favorable that the coefficient of economic activity in the province between 2017 and 2020 is higher than the coefficient of the economic activity in Bulgaria.

➢ The study also shows that over the observed six years the coefficient of employment in the area has risen faster compared to the coefficient of employment for the entire country. Before the pandemic the area has registered a relatively low level of unemployment at 1,4 % in 2019, which is defined as the lowest after the level of unemployment in the province of Sofia. Due to the pandemic, however, in 2020 there was a rise of unemployment in all provinces – in the province of Stara Zagora it rose to 2,10 % (6). It must be mentioned that different measures have been taken to remedy the economy in the whole country.

➢ The recovery from the damages on the economic activity that were afflicted by the crisis due to the COVID-19 pandemic has become one of the major problems which concern not only the presently studied province, but also all other provinces in Bulgaria. Nevertheless, according to a report from the Institute for Market Economy (January 2021) the province of Stara Zagora has kept its place among the strongest industrial areas. (6)

The regional analysis of human resources in the province of Stara Zagora during the period of 2015-2020 has shown the presence of multiple positive values of a number of indicators. Of course, there are negative ones, yet human resources in the province definitely possess a great potential to develop in various aspects. As

K. Blanchard and S. Johnson said in their book *The One Minute Manager,* "the best minute of the day is the one you invest in your people". (4)

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