

COMPARATIVE ANALYSIS OF EMPLOYED POPULATION AND THE GROSS DOMESTIC PRODUCT, IN ROMANIA AND THE ROMANIAN WESTERN REGION, BY SECTORS OF ACTIVITY

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Summary

In the paper entitled Comparative analysis of employed population and the gross domestic product in Romania and the Romanian Western Region, by sectors of activity, the dynamics of employed population and gross domestic product before and during the pandemic, respectively the period 2016-2021 has been analysed.

Based on the comparative analysis of the employed population in Romania and in the Western Region of the same country, for the period 2016-2018, a dynamic in the primary sector was found, a decrease in the secondary sector and an increase in the tertiary sector. In the period 2019-2021, the employed population, by sector of activity, decreased in the primary sector, was dynamic in the secondary sector and increased in the tertiary sector. There are significant differences between the average percentages calculated for the Western Region compared to Romania, which shows a decrease in the employed population in the primary and tertiary sectors and an increase in the secondary.

In terms of gross domestic product in current prices, over the entire period 2016-2021, Romania's gross domestic product by sectors of activity recorded an increase in the primary and tertiary sectors and a dynamic in the secondary sector. At the level of the Western Region, in the period 2016-2019, in all sectors of activity, the gross domestic product in current prices increased. Due to the emergence of the pandemic in 2020, there are decreases in GDP in current prices in all sectors of activity, but from 2021 onwards the economy recovers, so that its values increased both in Romania and in the Western Region.

Keywords: employed population, gross domestic product, sector, primary, secondary, tertiary, economy

JEL case: E01, R11

1. Introduction

In a country's national or regional economy, interdependencies between the primary, secondary and tertiary sectors, can be found, due to the existence of service activities that take place in the first two sectors. That is why, one can say that, the scope of services is larger than the scope of the tertiary sector, because the services market does not include the full scope of services. This is because there are also non-merchandise, non-market services, on the one hand: public services and private services that are commercialized, and on the other hand: free services that people do, themselves (Gherghina, 2020-2021) and (Gherghina, 2010).

Specialized studies underline that the theories related to sectoral activity have as protagonists: Allan Fisher, Colin Clark and Jean Fourastie. Allan Fisher grouped economic activities into: the primary sector - agricultural and extractive activities; the secondary sector - manufacturing industries; the tertiary sector - the set of activities devoted to non-material production (Ionciță et al., 1997). One can note that service activities have been grouped for the first time into a distinct sector of the national economy, called the tertiary sector.

Colin Clark grouped economic activities into: primary activities - direct use of natural resources and with diminishing returns (agriculture, hunting, fishing, logging); secondary or industrial activities - continuous and large-scale transformation of raw materials into transportable products and also characterized by high productivity and increasing returns; tertiary activities - characterized by lower productivity (handicraft, repair, small bakeries, construction, banking, insurance, trade and personal services) (Ionciță, 2000).

Jean Fourastie delimits the sectors of the economy according to their economic behaviour into: the primary sector - labour productivity growth situated at the average level; the secondary

sector - productivity growth situated above average; the tertiary sector - productivity growth situated below average.

In Romania, the civilian population employed by national economy activities and the gross domestic product by categories of resources, according to the information available on the website of the National Institute of Statistics, Territorial Statistics - regional economic and social landmarks (<https://insse.ro/cms/ro/tags/repere-economice-si-sociale-regionale>) is grouped into: Primary sector - Agriculture, forestry and fishing; Secondary sector - Mining, quarrying and manufacturing; Electricity, gas, steam, hot water and air conditioning supply; Water supply; Sewerage, sanitation, waste management, waste disposal activities; Remediation activities; Tertiary sector - sale and retail trade; Repair of motor vehicles and motorcycles; Transportation and storage; Hotels and restaurants; Information and communication; Financial intermediation and insurance; Real estate activities; Professional, scientific and technical activities; Administrative and support service activities; Public administration and defence; Social security activities; Education; Human health and social work activities; Entertainment, cultural and recreation activities; Other service activities; Construction.

Gross domestic product is considered by specialists in the field to be the most important macroeconomic indicator measuring the performance of a country's national economy because it expresses the market value of the final goods produced by all economic agents within the country over a given period of time. Gross Domestic Product (GDP): represents the gross value added of the final production of goods and services created during a period of time by economic agents operating within the country and is intended for consumption, investment, stock growth, export; and the human factor is the production factor that decisively influences the national economy because theoretically, the increase in the employment rate, through the creation of new jobs, stimulates economic growth (Silaghi and Sîrghi, 2005).

Studies specify that each country has its own strategy for sustainable development, which must be harmonized with the development of human resources (Anghel et al., 2023).

In all sectors of the national and regional economy the human factor is of particular importance because economic growth is based on labour force, capital and improved technical efficiency (Minică, 2005). The labour force, i.e. the employed population (EO) contributes to economic growth by increasing the volume of work performed and the quality of the human factor which is dependent on the qualification and motivation for work, as well as experience at work, which contribute to increased labour productivity.

It should be noted that the employed population, at the level of the national economy, is considered to be the most important segment of the economically active population because it comprises all individuals aged 14 years and over who, during the reference period, have carried out an economic or social activity producing goods or services in one of the branches of the national economy, with the purpose of obtaining income in the form of wages, payment in kind or other benefits (Anghel and colab., 2021). At the same time, the employed population is the actual producer of the goods and services necessary for the existence and functioning of the whole society, giving the measure of the demand for labour in the specific market (Asandului et al, 2007).

2. Comparative analysis of the employed population and the Gross Domestic Product, in Romania and in the Western Region of Romania, by the three sectors of activity, during the period 2016-2021

In order to comparatively analyse the employed population and the gross domestic product, in Romania and in the Western Region of the country, according to the three sectors of activity, for the period 2016-2021, the statistical data series from the website of the National Institute of Statistics available on (<https://insse.ro/cms/ro/tags/repere-economice-si-sociale-regionale>) had to be identified and retrieved.

A quantitative, desk research method, based on the study of statistical documents was applied in order to calculate the needed percentages for the Romanian Western Region and for the entire country.

2.1 Comparative analysis of the employed population in Romania and in the Western Region of Romania, according to the three sectors of activity, for the period 2016-2021

In order to make a comparative analysis, statistical series on the evolution over time of the population employed in services in the three sectors of the economy in the Romanian Western Region (Gherghina, 2010) and in the entire country, for the period 2016-2021, were built, based on which the necessary percentages could be calculated.

Table no. 1 **Population employed in the three sectors of activity in Romania and the Romanian Western Region, for the period 2016 - 2021 (thousand people)**

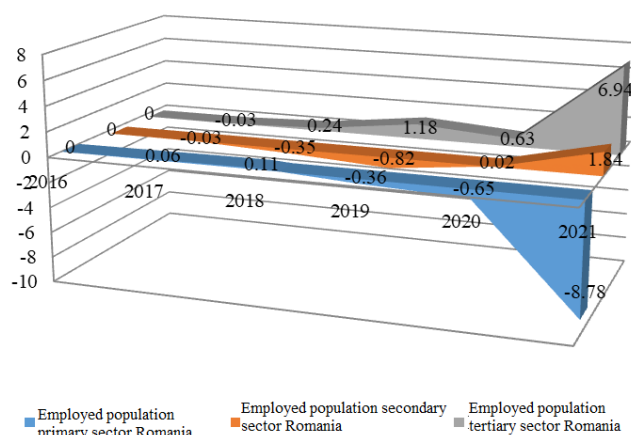
Romania					Romanian Western Region				
Year	Sector			Total	Year	Sector			Total
	Primary	Secondary	Tertiary			Primary	Secondary	Tertiary	
2016	1726.8	1957.0	4633.8	8317.6	2016	146.4	264.8	423.4	834.6
2017	1741.7	1966.8	4658.3	8366.8	2017	147.9	257.2	425.4	830.5
2018	1759.5	1946.7	4701.3	8407.5	2018	149.1	251.1	429.7	829.9
2019	1747.0	1896.5	4849.1	8492.6	2019	148.5	241.0	437.1	826.6
2020	1681.2	1886.6	4873.0	8440.8	2020	142.7	235.2	441.5	819.4
2021	846.5	1838.9	4915.4	7600.8	2021	74.9	227.1	447.4	749.4

Source: <https://insse.ro/cms/ro/tags/repere-economice-si-sociale-regionale>

Table no. 2 **Percentage of the employed population in the three sectors of activity in Romania and in the Romanian Western Region, between 2016 and 2021 (%)**

Romania					Romanian Western Region				
Year	Sector			Total	Year	Sector			Total
	Primary	Secondary	Tertiary			Primary	Secondary	Tertiary	
2016	20.76	23.53	55.71	100	2016	17.54	31.73	50.73	100
2017	20.82	23.50	55.68	100	2017	17.81	30.97	51.22	100
2018	20.93	23.15	55.92	100	2018	17.97	30.25	51.78	100
2019	20.57	22.33	57.10	100	2019	17.97	29.15	52.88	100
2020	19.92	22.35	57.73	100	2020	17.42	28.70	53.88	100
2021	11.14	24.19	64.67	100	2021	10.00	30.30	59.70	100
Media	19.02	23.18	57.80	100	Media	16.45	30.18	53.37	100

Source: Realized by the author



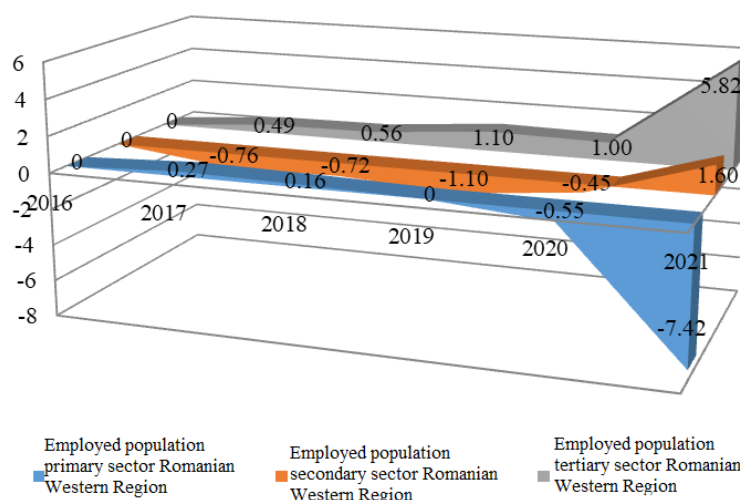


Figure no. 1 The dynamics employed population percentages in Romania and in the Romanian Western Region
Source: Realized by the author

According to the tables and graphs above, the employed population in the three sectors of activity of the national economy, both in Romania and in the Western Region of the same country, had a dynamic evolution respectively:

a) Romania

- in the primary sector the percentage of the employed population increased by +0.06% in 2017 compared to 2016 and by +0.11% in 2018 compared to 2017. Starting with 2019 the employed population decreased by -0.36% compared to 2018, in 2020 by -0.65% compared to 2019, and in 2021 by -8.78% compared to 2020;

- in the secondary sector the percentage of employed population decreased by -0.03% in 2017 compared to 2016, -0.35% in 2018 compared to 2017, -0.82% in 2019 compared to 2018. From year 2020 the employed population increases by +0.02% compared to year 2019, respectively in year 2021 by +1.84% compared to year 2020;

- in the tertiary sector the percentage of employed population decreased by -0.03% in 2017 compared to 2016, and since 2018 it increased by +0.24% compared to 2017, by +1.18% in 2019 compared to 2018, by +0.63% in 2020 compared to 2019, and in 2021 by +6.94% compared to 2020.

At the country level, in 2021 compared to 2020, due to the decrease of the employed population in the primary sector by -834.70 thousand people (from 1681.2 to 846.5 thousand people) and in the secondary sector by -47.70 thousand people (from 1886.6 to 1838.9 thousand people) one can observe a decrease in the employed population in the Romanian economy by -882.40 thousand people (from 8440.8 to 7558.4 thousand people) even though the employed population in the tertiary sector increased by +42.40 thousand people (from 4873.0 to 4915.4 thousand people).

On average, of the total employed population in Romania, only 19.02% work in the primary sector, 23.18% in the secondary sector and 57.80% in the tertiary sector.

b) Romanian Western Region

- in the primary sector, the percentage of the employed population increased by +0.27% in 2017 compared to 2016, by +0.16% in 2018 compared to 2017, and in 2019 there was no change, 0% compared to 2018. In 2020 the employed population decreased by -0.55% compared to 2019 and by -7.42% in 2021 compared to 2020;

- in the secondary sector the percentage of the employed population decreased by -0.76% in 2017 compared to 2016, by -0.72% in 2018 compared to 2017, by -1.10% in 2019 compared to 2018, by -0.45% in 2020 compared to 2019, and in 2021 it increased by +1.60% compared to 2020;

- in the tertiary sector the percentage of employed population increases by +0.49% in 2017 compared to 2016, by +0.56% in 2018 compared to 2017, by +1.10% in 2019 compared to 2018, by +5.82% in 2021 compared to 2020.

At the level of the Western Region, in 2021 compared to 2020, due to the decrease of the employed population in the primary sector by -67.80 thousand people (from 142.7 to 74.9 thousand people) and in the secondary sector by -8.10 thousand people (from 235.2 to 227.1 thousand people) one can observe a decrease of the employed population in the entire economy of the Romanian Western Region by -70.00 thousand people (from 819.4 thousand people in 2020 to 749.4 thousand people in 2021) even though the employed population in the tertiary sector increased by +5.90 thousand people (from 441.5 to 447.4 thousand people).

On average, only 16.45% of the total employed population work in the primary sector, 30.18% in the secondary sector and 53.37% in the tertiary sector. This is due to the reduction of the labour force at the level of the Romanian economy, respectively at the level of the Western Region of the country, as a result of the transition to a different type of economy, of the structural forms and mutations taking place in the Romanian economy.

2.2 Comparative analysis of gross domestic product in Romania and in the Romanian Western Region, according to the three sectors of activity, for the period 2016-2021

The tables presenting the gross domestic product and its percentages by sectors of activity of the national economy and at the level of Romania and the Romanian Western Region, for the period 2016-2021 are presented below. Noted: GRAV - Gross Regional Added Value; TP - Taxes per product; CD - Import duties (customs duties/taxes); SP - Subsidies per product.

Table no. 3 **Gross domestic product in the three sectors of activity in Romania and the Romanian Western, for the period 2016 - 2021 (million RON current prices)**

Year	Sector			GRAV	TP, CD, SP	Total
	Primary	Secondary	Tertiary			
GDP in Romania						
2016	31077.7	183778.0	470034.3	684890.0	78762.5	763652.5
2017	37003.6	203681.0	535956.0	776640.6	81255.1	857895.7
2018	41227.3	215851.0	603020.6	860098.9	91629.6	951728.5
2019	43668.1	223395.8	690490.1	957554.0	101419.2	1058973.2
2020	44579.2	213314.6	709706.2	967600.0	99180.5	1066780.5
2021	56631.5	233854.1	784262.6	1074748.2	114341.6	1189089.8
GDP in the Romanian Western Region						
2016	3352.2	22463.7	40599.6	66415.5	7596.8	74012.3
2017	3858.7	23362.5	46040.6	73261.8	7633.6	80895.4
2018	4484.4	25533.2	50725.8	80743.4	8583.5	89326.9
2019	5523.5	26240.6	58929.7	90693.8	9600.1	100293.9
2020	4852.6	24420.2	59836.5	89109.3	9074.5	98183.8
2021	5212.3	25478.1	66786.7	97477.1	10260.9	107738.0

Source: <https://insse.ro/cms/ro/tags/repere-economice-si-sociale-regionale>

Table no. 4 **The percentage of gross domestic product in the three sectors of activity in Romania and the Romanian Western Region, between 2016 and 2021 (%)**

Year	Sector			GRAV	TP, CD, SP	Total
	Primary	Secondary	Tertiary			
GDP percentage in Romania						
2016	4.07	24.07	61.55	89.69	10.31	100
2017	4.31	23.74	62.48	90.53	9.47	100
2018	4.33	22.68	63.36	90.37	9.63	100

2019	4.12	21.10	65.20	90.42	9.58	100
2020	4.18	20.00	66.52	90.70	9.30	100
2021	4.76	19.67	65.95	90.38	9.62	100
Media	4.30	21.87	64.18	90.35	9.65	100
GDP percentage in the Romanian Western Region						
2016	4.53	30.35	54.86	89.74	10.26	100
2017	4.77	28.88	56.91	90.56	9.44	100
2018	5.02	28.58	56.79	90.39	9.61	100
2019	5.51	26.16	58.76	90.43	9.57	100
2020	4.94	24.87	60.95	90.76	9.24	100
2021	4.84	23.65	61.99	90.48	9.52	100
Media	4.93	27.08	58.37	90.39	9.61	100

Source: Realized by the author

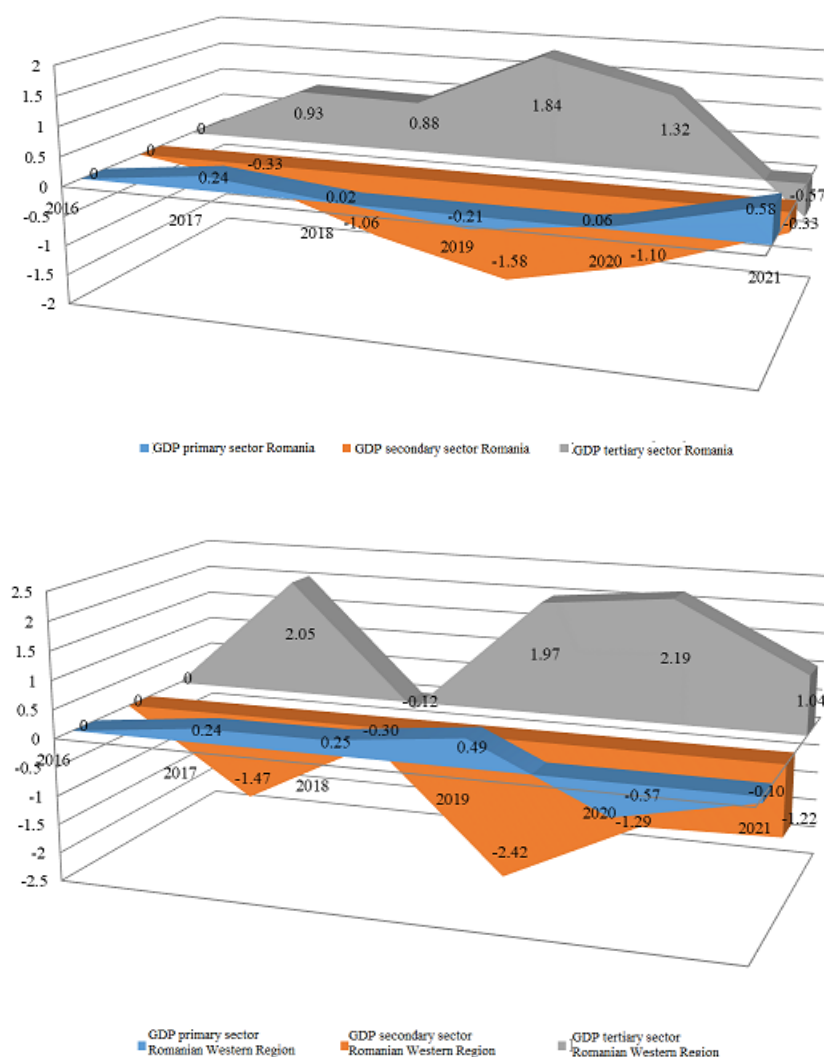


Figure no. 2 Dynamics of the percentages of Gross Domestic Product in Romania and the Romanian Western Region

Source: Realized by the author

According to the information in the above tables and graphs, one can see that the gross domestic product in current prices, in the three sectors of activity of the national economy, both in Romania and in the Western Region of Romania, had a dynamic evolution, respectively:

a) Romania

- in the primary sector, the percentage of gross domestic product in current prices increased by +0.24% in 2017 compared to 2016, respectively by +0.02% in 2018 compared to 2017, by +0.06% in 2020 compared to 2019, by +0.58% in 2021 compared to 2020, even if in 2019 it decreases by -0.21% compared to 2018;

- in the secondary sector, the percentage of GDP in current prices decreased over the entire period analysed, respectively by -0.33% in 2017 compared to 2016, by -1.06% in 2018 compared to 2017, by -1.58% in 2019 compared to 2018, by -1.10% in 2020 compared to 2019 and by -0.33% in 2021 compared to 2020;

- in the tertiary sector, the percentage of gross domestic product in current prices increased over the entire period analysed, respectively by +0.93% in 2017 compared to 2016, by +0.88% in 2018 compared to 2017, by +1.84% in 2018 compared to 2019, by +1.32% in 2020 compared to 2019, and in 2021 it decreases by -0.57% compared to 2020.

At the level of entire country, in 2021 compared to 2020, due to the increase of the gross domestic product in the primary sector by +12052.30 million lei in current prices (from 44579.2 to 56631.5 million lei), in the secondary sector by +20539.50 million lei in current prices (from 213314.6 to 233854.1 mil. lei), and in the tertiary sector with +74556.40 million lei in current prices (from 709706.2 to 784262.6 mil. lei), one can observe an increase in the national economy with +107148.20 million lei in current prices (from 967600 to 1074748.2 million lei). On average, in Romania, only 4.94% of the total gross domestic product recorded in current prices is in the primary sector, 27.08% in the secondary sector and 58.38% in the tertiary sector.

b) Romanian Western Region

- in the primary sector the GDP percentage in current prices increased by +0.24% in 2017 compared to 2016, by +0.25% in 2018 compared to 2017, by +0.49 in 2019 compared to 2018, and from 2020 it decreased by -0.57% compared to 2019 and by -0.10% in 2021 compared to 2020;

- in the secondary sector, the percentage of gross domestic product in current prices decreased over the whole period analysed, respectively by -1.47% in 2017 compared to 2016, by -0.30% in 2018 compared to 2017, by -2.42% in 2019 compared to 2018, by -1.29% in 2020 compared to 2019 and by -1.22% in 2021 compared to 2020 ;

- in the tertiary sector, the percentage of gross domestic product in current prices increased by +2.05% in 2017 compared to 2016, by +1.97% in 2019 compared to 2018, by +2.19% in 2020 compared to 2019, by +1.04% in 2021 compared to 2020, even if in 2018 it decreases by -0.12% compared to 2017.

At the level of the Romanian Western Region, in 2021 compared to 2020, due to the increase of the gross domestic product in the primary sector by +359.70 million lei in current prices (from 4852.6 to 4852.6 million lei), in the secondary sector by +1057.90 million lei in current prices (from 24420.2 to 25478.1 million lei), in the tertiary sector with +6950.20 million lei in current prices (from 59836.5 to 66786.7 million lei), one can observe an increase in the Romanian Western Region with +8367.80 million lei at current prices (from 1074748.2 to 97477.1 million lei). On average, at the level of the Western Region, out of the total gross domestic product recorded in current prices, only 4.94% is in the primary sector, 27.08% in the secondary sector and 58.38% in the tertiary sector.

3. Conclusions

Based on the analysis of the employed population and the gross domestic product in current prices at the level of Romania and the Romanian Western Region, over the entire period 2016-2021 there is a difference between the average percentages calculated for the two indicators.

As regards the employed population in the Romanian Western Region compared to the entire country, the average percentages are lower by -2.57% (19.02% RO - 16.45% RV) in the primary sector and by -4.43% (57.80% RO - 53.37% WR) in the tertiary sector, while in the secondary sector there is an increase of +7.00% (23.18% RO - 30.18% WR). This shows that the

population employed in Romania in the secondary sector has professionally reoriented towards the other two sectors of activity, namely the primary and secondary sectors.

For the gross domestic product in current prices at the level of the Romanian Western Region compared to the entire country, the average percentage is higher by +0.63% (4.30% RO - 4.93% WR) in the primary sector, by +5.21% (21.87% RO - 27.08% WR) in the secondary sector, even though the tertiary sector registered a decrease in the average percentage of -5.81% (64.18% RO - 58.37% WR). This leads to an increase in the percentage of regional gross added value of +0.04% (90.35% RO - 90.39% WR), but is offset by the average percentage of -0.04% (9.65% RO - 9.61% WR), collected from taxes on products, import duties (customs duties) and subsidies on products.

Gross added value, as well as taxes on products, duties on imports (customs duties) and subsidies on products both at the level of Romania and the Romanian Western Region had a dynamic throughout the period analysed, but also the reduction in employment led to a decrease in gross domestic product in current prices for the years 2020 and 2021.

One can say that the reduction of the employed population in the primary and secondary sectors in Romania and the Romanian Western Region, for the period 2019-2021 is due on the one hand to the instability of fiscal policies, the vulnerability of the business environment, the lack of market studies to identify business development opportunities, the lack of experience of entrepreneurs in managing financial, informational, material, human resources and business risk assessment. It should be emphasized that financial resources gain the first place during the choice stage and the business operation stage, while material, human and informational resources come first at the construction stage and the business start-up stage.

One of the causes of the reduction in the employed population and in the gross domestic product in the last years analysed was the emergence of the Covid-19 pandemic in March 2020, which continued in 2021, a period characterized by a number of restrictions on free movement at national or international level. During both periods, the state of emergency and the state of alert, the most affected sectors in Romania were the primary and secondary sectors, but certainly also the tertiary sector to a lesser extent because some of the service activities could be performed by the employed population at home on online platforms. The results of the present study can be the basis for comparisons with other research in the field or for more in-depth future research.

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