

Local Labor Market in the Cross-Border Area

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Abstract

Romania's cross-border areas began to develop more actively after Romania joined the European Union. Therefore, the operational programs for cross-border cooperation within the European Union have been developed in the Romania-Hungary cross-border area. In this article there is a beginning in the study of the respective topic, in which we set out to reflect the evolution of the labor market in the counties and border regions between Romania and Hungary, the evolution of GDP in the border counties and to identify the most important priorities to continue. The topic with deeper researchers highlights the strengths and weaknesses, what indicators we need to calculate and how we can develop this cross-border cooperation with neighboring countries in the field of labor market.

Keywords: *Local labor markets, cross-border markets, cross-border area*

JEL classification: J01, C31

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1. Introduction

According to the European Parliament's Rules of Procedure (2018) in terms of coherence with the European Interconnection Mechanism (ENM), synergies and complementarity will be stronger if the MEI focuses on the "core network". While the ERDF and the Cohesion Fund will also provide support for the "global network", access to it will be provided at local and regional level, as well as transport links in urban areas (Balu et al., 2021). Given the success of previous Interreg programs, we estimate the following developments: Cross-border programs should play the role of exchange institutions, facilitate cross-border activity (Radulescu et al., 2020a), and become a strategic planning center and should no longer be used primarily for the management and distribution of funds (Profiroiu et al., 2020a). Regarding the

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inclusion of external cooperation, this development will take the form of a specific component for the outermost regions, the incorporation of the current IPA / ENI funding to support enlargement and cooperation with neighboring countries (Bodislav et al., 2020c).

We would like to mention that the local labor markets in the cross-border area, both in Romania and in Hungary, did not have a support in the evolution of the local development, nor any impact of the national strategies and policies. Cross-border cooperation programs have not been directly directed to the development of local labor markets in both Romania and Hungary.

In the next period of the 2021-2027 development strategy cycle, it is necessary to implement the objectives of smart development at the local level as well, by promoting an innovative and intelligent economic transformation (Jianu et al., 2019; Negescu Oancea, et al., 2020; Burlacu et al., 2021a). Application of localization digitization systems and automation of technological processes and public services at local level (public safety, public services and utilities, energy monitoring, environment, public lighting, GIS systems - smart-city interventions) (Burlacu et al., 2021b)

Digitization of the main activities in rural life to support both the active population in the labor field and the vulnerable population (Alpopi et al., 2018). Digitization of business support infrastructures, such as incubators, accelerators, hubs, science and technology parks, co-working spaces, beyond infrastructure investments, must offer new, more advanced services ((Radulescu et al., 2020; Bodislav et al., 2020a). Smart city - the smart city, by testing and developing technologies to promote and sustain sustainability, security, a healthy lifestyle for the population ((Burlacu et al., 2021c; Profiroiu et al., 2020a).

Digitization in education by increasing the degree of digitization in the field both in terms of related life events and in the use of digitization as a tool for learning and increasing the degree of culture (Radulescu et al., 2021). Improving the process of local public management in decision making through digital systems, digitalization of administration, digital transformation of companies by adopting technologies for the design of new business models, supporting the development of Digital Innovative Hubs (IHL) (Bodislav et al., 2020b).

According to our research, we estimate the following trend on the labor markets in Romania and Hungary, with which we also have the local cross-border labor market:

Table 1. Labor force participation rate (LF) and unemployment rate by gender (percentages)

		Male and female		Male		Female	
		Labor force participation rate	Unemployment rate	Labor force participation rate	Unemployment rate	Labor force participation rate	Unemployment rate
ROMANIA	2005	53.5	7.2	61.2	7.8	46.3	6.4
	2010	55	7	64.3	7.6	46.3	6.2
	2015	54.3	6.8	64.2	7.5	45.2	5.9

		Male and female		Male		Female	
HUNGAR	2019	54.1	5	63.8	5.7	45.2	4.1
	2005	50.1	7.2	58.4	7	42.9	7.4
	2010	50.5	11.2	58.2	11.6	43.8	10.7
	2015	54.8	6.8	63.4	6.6	47.3	7
	2019	56.1	3.5	64.8	3.2	48.3	3.8

Source: Statistical Yearbook 2019 edition Sixty- issue, United Nation, 2019 ISBN 978-92-1-259132-2

Following the accession of Romania, Hungary and Bulgaria to the European Union, various cross-border cooperation programs were developed between these countries. According to art. 178 of the Treaty on the Functioning of the European Union and Regulation (EU) no. 1299/2013 of 17.12.2013 [3] European territorial cooperation is a component of cohesion policy since 1990. Therefore European territorial cooperation is instrumental to cohesion policy, aiming at solving cross-border problems that require common solutions to develop potential and priority of various territories (Bran et al., 2020). The objectives of the cross-border and transnational programs focus primarily on bringing people, local communities, economic agents in the cross-border area closer together, promoting sustainable jobs (Profiroiu et al., 2020b).

Within the Romania-Hungary cross-border region in 2007 the first program “Hungary - Romania, cross-border cooperation program 2007-2013” was launched, [4] in 2014 the Interreg VA Romania-Hungary program was implemented in the period 2014-2020 [5] financing the cross-border cooperation in the Romanian-Hungarian border area, through the European Regional Development Fund, and for the next strategic cycle follows the Interreg VA Romania 2021-2027 Program [5].

Based on data from the Labor Force Survey for the second quarter of 2020, [6] the economically active population aged 15 to 74 was 4,622,400, with a participation rate of 62.4%. . Of the active population, 4,408,200 were employed, while 214,200 were unemployed. In the second quarter of 2020, the employment rate for the population aged 15 to 74 was 59.5%, a decrease of 1.3 percentage points compared to the same quarter in 2019. Number of people in the group 15-74 years of age considered unemployed according to the IOM definition decreased continuously from January-March 2015. In the second quarter of 2020, the number of people considered unemployed in the IOM definition was 214,200, an increase of 58,700 compared to the same period last year and is well below the pre-crisis figures (second quarter of 2008: 315,500). We would like to mention that the average number of job seekers registered at the end of the month registered by the National Employment Service (NFSZ) was 356,800, representing a significant increase compared to previous quarters. At the same time, 6.8% of jobseekers were first-time applicants. The number of first-time jobseekers was about the same as in the second quarter of 2019, while their proportion was lower due to the increase in the total number of jobseekers. 37.7% of all job seekers have a primary education (8 years or less), 24.0% have completed vocational training as skilled workers, another 29.2%

have passed the drop-out exam of high school and 6.6% graduated from college or university. The proportion of people looking for a job for the first time with only primary education (8 years or less) was 44.6%, while another 36.3% passed the exam to leave high school, and others 4.4% obtained a college degree or a university degree.

The eligible area has a major contribution to the entire population of Hungary and Romania, representing 13.1% of the total population of the two countries. This is accompanied by a decline in the region's population in recent years, which is the result - among other things - of negative net migration.

Table 2. Population of Romanian counties in the cross-border area Romania - Hungary (2014-2019 and estimated for 2020-2021)

	2014	2015	2016	2017	2018	2019	2020*	2021*
Satu Mare	340,986	339,998	338,181	336,509	334,678	332,572	337,154	336,5153
Bihor	573,691	571,955	568,969	566,353	564,109	561,404	567,7468	566,7561
Arad	427,974	426,459	424,075	421,945	419,360	417,422	422,8725	422,0223
Timis	693,104	695,599	696,720	698,261	701,499	705,113	698,3827	699,2624

Source: Population on 1 January by age group, sex and NUTS 3 region [demo_r_pjangrp3]

Table 3. Population in the districts of Hungary in the cross-border area Romania Hungary (2014-2019)

	2014	2015	2016	2017	2018	2019	2020*	2021*
Hungary	9,877,365	9,855,571	9,830,485	9,797,561	9,778,371	9,772,756	9,818,685	9,808,905
Hajdú-Bihar	539,507	537,268	534,974	532,399	530,464	527,989	533,7668	532,8101
Szabolcs-Szatmár-Bereg	561,379	562,357	563,075	562,058	558,361	552,964	560,0323	559,8079
Békés	355,199	351,148	347,058	342,438	338,025	334,264	344,6887	342,9369
Csongrád	407,389	406,205	404,459	401,469	400,238	399,012	403,1287	402,4186

Source: Population on 1 January by age group, Population on 1 January by age group, sex and NUTS 3 region *estimate [demo_r_pjangrp3]

Evolution of the Gross Domestic Product in the districts / counties from the cross-border region in the period 2014 – 2019

Table 4. Evolution of GDP in the regions of Hungary (Mil. Euro)

	2014	2015	2016	2017	2018	2019	2020*	2021*
Ungaria	9,877,365	9,855,571	9,830,485	9,797,561	9,778,371	9,772,756	9818,685	9808,905
Hajdú-Bihar	539,507	537,268	534,974	532,399	530,464	527,989	533,7668	532,8101
Szabolcs-Szatmár-Bereg	561,379	562,357	563,075	562,058	558,361	552,964	560,0323	559,8079
Békés	355,199	351,148	347,058	342,438	338,025	334,264	344,6887	342,9369

	2014	2015	2016	2017	2018	2019	2020*	2021*
Csongrád	407,389	406,205	404,459	401,469	400,238	399,012	403,1287	402,4186

Sursa: Eurostat, Gross domestic product (GDP) at current market prices by NUTS 3 regions [nama_10r_3gdp]

Table 5. Evolution of GDP in Romanian counties in the cross-border region

(Mil. Euro)	2014	2015	2016	2017	2018*	2019*	2020*	2021*
Satu Mare	182325	193292	206588	236988	204798,3	210416,6	214697,7	216725,1
Bihor	344395	364822	391375	436423	384253,8	394218,4	401567,5	404115,7
Arad	312531	345437	372286	412591	360711,3	372756,3	379586,1	381411,2
Timis	672376	756523	817303	853533	774933,8	800573,2	811585,7	810156,4

Source: Eurostat, Gross domestic product (GDP) at current market prices by NUTS 3 regions [nama_10r_3gdp]

From a geographical and regional perspective, Borsod-Abaúj-Zemplén and Szabolcs-Szatmár-Bereg counties had the highest number of jobseekers (44,100 and 33,400 respectively) in Hungary and In regions where the labor market situation is more severe, the composition of jobseekers by level of education also tends to be less favorable than the national average. The increase in the number of job seekers compared to the same period of the previous year was the largest in Győr-Moson-Sopron and Vas counties (325.0% and 195.1%, respectively). At the end of the second quarter of the current year (2020), the Hungarian Employment Agencies received notifications of collective redundancies affecting more than 7,300 people. The number of reported layoffs has tripled compared to the same period last year.

2. The economic activity of the population in the regions from the cross-border area Romania - Hungary

The economic activity of the population is characterized in the period 2006 - 2019 by the increase in the number of employees in 2006, from 3,928.4 to 4,512.1 in 2019, the unemployment rate is 7.5% in 2006, with an increase in years of crisis 2009-2013 between 10.0-1.0%, with a gradual decrease in 2014, from 7.7% to 3.4% in 2019. The activity rate is 55% in 2006, and in 2019 we have 63.0%. The employment rate increases from 50.9% in 2006 to 60.8% in 2019.

Table 6. Economic activity of the population aged 15–74 in the period 2006 – 2021*

	Angajati	Someri	Populatie activa	Populaie inactiva	Populatietotala	Rata somajului	Rata de ocupae	Rata de angajare
Anii	Mii personae					%		
2006	3,928.4	318.2	4,246.7	3,470.5	7,717.2	7.5	55.0	50.9
2007	3,902.0	312.1	4,214.1	3,489.4	7,703.5	7.4	54.7	50.7

	Angajati	Someri	Populatie activa	Populaie inactiva	Populatietotala	Rata somajului	Rata de ocupae	Rata de angajare
2008	3,848.3	326.3	4,174.6	3,515.2	7,689.9	7.8	54.3	50.0
2009	3,747.8	417.8	4,165.6	3,510.6	7,676.2	10.0	54.3	48.8
2010	3,732.4	469.4	4,201.8	3,460.9	7,662.7	11.2	54.8	48.7
2011	3,759.0	466.0	4,225.0	3,424.3	7,649.3	11.0	55.2	49.1
2012	3,827.2	473.2	4,300.4	3,335.4	7,635.8	11.0	56.3	50.1
2013	3,892.8	441.0	4,333.8	3,275.9	7,609.7	10.2	57.0	51.2
2014	4,100.8	343.3	4,444.2	3,129.1	7,573.2	7.7	58.7	54.1
2015	4,210.5	307.8	4,518.3	3,019.6	7,537.9	6.8	59.9	55.9
2016	4,351.6	234.6	4,586.2	2,921.3	7,507.5	5.1	61.1	58.0
2017	4,421.4	191.7	4,613.1	2,847.3	7,460.4	4.2	61.8	59.3
2018	4,469.5	172.1	4,641.6	2,790.6	7,432.2	3.7	62.5	60.1
2019	4,512.1	159.7	4,671.9	2,747.2	7,419.0	3.4	63.0	60.8

Source: https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qlf030.html

According to the definitions of the International Labor Organization (ILO) for the purpose of labor market statistics, people are classified as employed, unemployed and out of work (Sarbu et al., 2021). The active economic population is the sum of the employed and unemployed. People outside the workforce are those who were neither employed nor unemployed during the reference week. In 2017, overall employment growth slowed, reflecting a strong private sector workforce, and a decline in public employment (Belostecinic et al., 2022). The number of people enrolled in public employment schemes fell to just under 150,000, helped by the increased search for incentives for those enrolled as the ratio of their (unspecified) wages to the minimum wage increase was reduced from 77% to 59% between 2012 and 2018. The labor market situation has also benefited groups with weak attachments (including women, the elderly and low-skilled workers and long-term job seekers) partially helped by the widespread use of the public, work schemes, training grants and lower social security contributions (Burlacu et al., 2021). Labor supply has increased as the positive effects of the labor market outlook offset the age-related decline in the working age population (Popescu et al. 2021).

In the Hajdú-Bihar district, the number of employees in 2006 was 177.4 thousand, in 2019 it will reach 233.6 thousand. The number of unemployed from 23, 4 in 2006 was maintained during the years 2006-2012, in 2013 it registered the figure of 34.3 thousand unemployed, registering a gradual fall from 21.2 thousand in 2016, 2017 - 16.0 thousands, and in 2019 to 11.2. The Hajdu-Bihar district, which is in the area eligible to partner in cooperation with Romania, reflects the following picture of the evolution of the labor force. In 2006 there were 177.4 thousand employees in the district, and in 2019 they reached 233.4 thousand employees, with a population of 415.2 I 2006, and in 2019 the population decreased to 399 thousand.

Table 7. Economic activity of the population aged 15–74 in the period 2006-2019 in Hajdú-Bihar district

	Employees	Unemployed	Active population	Inactive population	Population	Unemployment rate	Activity rate	Employment rate
	thousands of people					%		
2006	177.4	23.4	200.8	214.4	415.2	11.7	48.4	42.7
2007	190.5	16.1	206.7	208.1	414.7	7.8	49.8	45.9
2008	186.0	19.2	205.2	209.8	415.0	9.3	49.4	44.8
2009	177.4	23.4	200.8	214.4	415.2	11.7	48.4	42.7
2010	182.3	27.8	210.1	205.3	415.4	13.2	50.6	43.9
2011	190.3	29.4	219.8	195.8	415.6	13.4	52.9	45.8
2012	190.8	29.3	220.0	194.8	414.8	13.3	53.0	46.0
2013	196.4	34.3	230.7	182.8	413.5	14.9	55.8	47.5
2014	207.0	30.7	237.7	173.8	411.5	12.9	57.8	50.3
2015	213.0	27.1	240.0	169.0	409.0	11.3	58.7	52.1
2016	224.2	21.2	245.3	161.5	406.9	8.6	60.3	55.1
2017	228.8	16.0	244.8	159.1	403.9	6.5	60.6	56.6
2018	232.9	13.9	246.8	154.4	401.2	5.6	61.5	58.0
2019	233.6	11.2	244.9	154.2	399.1	4.6	61.4	58.5

Sursa: https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qlf030.html

In the district of Szabolcs-Szatmár-Bereg, the economic activity of the population for the age groups 15–74 during the years 2006–2019 is characterized, in 2006 with a number of 186.8 thousand employees, 28.8 thousand unemployed 28.8. In 2008, the number of employees decreased to 176.5 thousand people, and in 2014 there was an increase to 212.0 thousand people.

Table 8. Economic activity of the population aged 15–74 in the period 2006–2021 in the district of Szabolcs-Szatmár-Bereg

	Employees	Unemployed	Active population	Inactive population	Population	Unemployment rate	Activity rate	Employment rate
	thousands of people					%		
2006	186.8	28.8	215.5	217.9	433.4	13.3	49.7	43.1
2007	182.6	31.5	214.1	218.4	432.5	14.7	49.5	42.2
2008	176.5	37.7	214.1	217.4	431.5	17.6	49.6	40.9
2009	175.6	39.8	215.5	215.1	430.5	18.5	50.0	40.8
2010	180.5	39.9	220.4	209.1	429.5	18.1	51.3	42.0
2011	180.6	40.1	220.7	207.9	428.6	18.2	51.5	42.1
2012	194.0	37.7	231.6	196.8	428.4	16.3	54.1	45.3

	Employees	Unemployed	Active population	Inactive population	Population	Unemployment rate	Activity rate	Employment rate
2013	199.2	37.0	236.2	192.4	428.6	15.7	55.1	46.5
2014	212.0	33.4	245.5	182.1	427.5	13.6	57.4	49.6
2015	219.4	32.7	252.1	177.7	429.8	13.0	58.7	51.1
2016	230.0	30.1	260.1	171.4	431.6	11.6	60.3	53.3
2017	244.0	22.7	266.6	163.9	430.6	8.5	61.9	56.7
2018	245.6	23.7	269.3	157.4	426.7	8.8	63.1	57.6
2019	242.4	21.6	264.0	157.8	421.8	8.2	62.6	57.5

Sursa: https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qlf030.html

For a population of 433.4 thousand in 2006 there is a number of employees of 186.8 thousand, a number of unemployed of 28.8 thousand, of which economic assets constitute 215.5 thousand. Unemployment rate is 13.3% in 2006 with an increase in the period 2007-2013 between 14.7-18.2 in 2011, with a gradual decrease to 8.2 in 2019. With a number of employees of 242.4 thousands of the region's total population of 421.8 In 2019 it will reach 242.4 thousand employees.

Table 9. Economic activity of the population aged 15–74 (2006–2019) in Bekes County

	Employees	Unemployed	Active population	Inactive population	Population	Unemployment rate	Activity rate	Employment rate
	thousands of people					%		
2006	131.5	11.7	143.2	150.1	293.2	8.1	48.8	44.9
2007	133.7	12.2	145.9	144.7	290.6	8.4	50.2	46.0
2008	176.5	37.7	214.1	217.4	431.5	17.6	49.6	40.9
2009	125.9	19.9	145.8	139.4	285.2	13.6	51.1	44.2
2010	129.2	18.3	147.5	135.0	282.6	12.4	52.2	45.7
2011	127.6	17.8	145.4	134.4	279.9	12.3	52.0	45.6
2012	131.3	17.7	149.0	128.2	277.2	11.9	53.8	47.4
2013	132.8	16.4	149.1	125.3	274.4	11.0	54.3	48.4
2014	133.7	15.5	149.2	121.8	271.0	10.4	55.1	49.3
2015	139.3	13.2	152.5	115.0	267.5	8.7	57.0	52.1
2016	144.7	9.4	154.1	110.0	264.1	6.1	58.4	54.8
2017	147.4	7.7	155.1	104.9	260.0	5.0	59.7	56.7
2018	150.8	7.3	158.1	98.3	256.4	4.6	61.7	58.8

	Employees	Unemployed	Active population	Inactive population	Population	Unemployment rate	Activity rate	Employment rate
	thousands of people					%		
2019	149.1	9.0	158.1	94.9	252.9	5.7	62.5	58.9

Source: https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qlf030.html

Csongr ad-Csan ad County, with a population of 324.0 thousand in 2006. With 162.8 employees. Unemployment of 6.1% in 2006, activity rate of 53.5%, employment rate of 50.2% in 2006.

Table 10. Economic activity of the population aged 15–74 in the period 2006–2019 in the Csongr ad-Csan ad region

	Employee	Unemployed	Active population	Inactive population	Total population per district	Unemployment rate	Employment rate	Unemployment rate
	mii personae					%		
2006	162.8	10.6	173.4	150.7	324.0	6.1	53.5	50.2
2007	161.0	10.4	171.4	151.4	322.7	6.1	53.1	49.9
2008	157.4	12.8	170.3	151.1	321.4	7.5	53.0	49.0
2009	156.4	13.1	169.5	150.6	320.1	7.7	52.9	48.9
2010	158.1	15.3	173.4	145.4	318.8	8.8	54.4	49.6
2011	155.1	15.8	170.8	146.8	317.6	9.2	53.8	48.8
2012	153.1	17.5	170.7	145.9	316.6	10.3	53.9	48.4
2013	154.3	21.3	175.6	139.2	314.8	12.1	55.8	49.0
2014	169.8	12.7	182.5	130.1	312.6	7.0	58.4	54.3
2015	170.7	13.5	184.2	126.9	311.1	7.3	59.2	54.9
2016	180.4	8.3	188.7	120.7	309.4	4.4	61.0	58.3
2017	179.6	6.5	186.1	119.6	305.7	3.5	60.9	58.8
2018	179.5	5.4	184.9	119.3	304.2	2.9	60.8	59.0
2019	180.3	4.1	184.4	118.5	302.9	2.2	60.9	59.5

Source: https://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_qlf030.html

The highest number of employees in the respective period is registered in 2016 of 180.4 thousand employees, at a population of 309.4 thousand, respectively with an unemployment rate of 4.4%, an activity rate of 61.0%, and employment rate of 58.3%. In 2019 there is an employed result of 180.3 thousand, unemployed of 4.1 thousand, economically active 184.4 thousand, inactive 118.5 thousand, respectively with an unemployment rate of 2.2, activity rate of 60, 9 and employment rate of 59.5.

The partner counties in Romania present the following evolution

Partners from Romania Satu Mare County with a population of 331,948, Bihor County 560,799 thousand, Arad 416685 thousand, Timis 705534 thousand, Bihor County with 560799, Arad County with 416685 thousand, And the largest County, Timis with a population of 705534 thousand.

Table 11. Civilian active population by development regions and counties (thousands of people) 2006-2019

	Romania	Satu Mare	Bihor	Arad	Timis
2006	8929,8	153	280,9	211,6	331,3
2007	9093,7	154,7	284,8	216,5	341
2008	9150,4	155,5	284,2	214,7	340
2009	9120,1	156,5	285,8	214,3	332,4
2010	8998,3	154,6	282,7	211,5	331
2011	8826,5	152,6	274,6	208,5	331,4
2012	9063,4	158,1	280	214	340,9
2013	9042,9	158,5	276,7	217,3	340,9
2014	8910	156,2	274,8	218,2	340,9
2015	8776,8	151,3	272,4	215,9	345,5
2016	8735,8	147	267,8	216,2	348
2017	8717,9	147,7	266,9	213,4	349,8
2018	8696,4	146,5	265,6	214,2	351,6
2019	8750,5	146,3	264,2	211,9	350,6

Source: www.insse.ro/ The active civilian population by development regions and counties (thousands of people) 2006-2019 and our estimates for 2020 and 2021

Table 12. Employed civilian population by activities of the national economy in the cross-border counties in Romania

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*	2021*
TOTAL	8747	8410,7	8371,3	8365,5	8569,6	8530,6	8431,7	8340,6	8317,6	8366,8	8407,5	8492,6	8445,958	8420,872
Bihor	275,6	269,1	266	263	268,3	266,4	264,8	262,8	259,6	260,4	261,5	260,5	264,8333	263,9361
Satu Mare	150,9	146,4	145,2	145,6	150,4	151,2	149,4	145,3	140,9	143	142,6	142,7	146,1333	145,7361
Arad	208,2	199,7	200,4	201,3	206,2	210,4	212,1	210,8	211,3	210,2	211,3	209,3	207,6	207,55
Timis	334,4	317,3	318,6	325,1	334,2	334,4	336,2	341,2	344,1	346,3	348,9	347,8	335,7083	335,8174

Source: www.insse.ro/ Civilian employed population by activities of the national economy at CANE Rev.2 section level, gender, macro-regions, development regions and counties (* estimated by the authors)

Table 13. Unemployed registered by categories of unemployed, gender, macro-regions, development regions and counties (number of persons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*	2021*
Total	403441	709383	626960	461013	493775	512333	478338	436242	418237	351105	288896	257865	453132,3	457273,3
Bihor	8596	16679	16666	11633	11743	10288	10030	9601	8155	6497	4074	3690	9804,333	9905,028
Satu Mare	4600	10135	9370	7039	7662	7300	6816	6037	6095	4727	3842	3631	6437,833	6590,986
Arad	6549	14591	11068	7241	7810	6864	6071	5104	4937	3245	2901	2610	6582,583	6585,382
Timis	5568	15114	12367	6280	6696	6463	5433	4329	3944	3540	2742	2775	6270,917	6329,493

Source: www.insse.ro/ (* estimated by the authors)

Table 14. Employment rate by gender, macro-regions, development regions and counties (%)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*	2021*
Romania	63,6	60,6	59,6	59,6	61,1	60,9	66,9	66,8	66,2	67,3	68,7	69,6	64,2	64,3
Bihor	76,7	73,8	71,4	70,1	71,4	70,9	73,8	73,5	71,6	72	73,1	72,9	72,6	72,3
Satu Mare	64,5	61,7	60,1	60,1	62	62,5	68,6	67,3	64,9	66,6	67,3	67,9	64,5	64,5
Arat	71,1	67,6	67	67,3	69,1	70,8	78,4	78,6	78	78,2	79,7	79,4	73,8	74,0
Timis	74,3	69,8	69,3	70,3	72,3	72,4	71	72,3	71,8	72,3	73,3	73,5	71,9	71,7

Table 15. Unemployment rate in Romanian cross-border counties in the region of ROMANIA HUNGARY (2008-2019)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*	2021*
Romania	4,4	7,8	7	5,2	5,4	5,7	5,4	5	4,8	4	3,3	2,9	5,1	5,1
Bihor	3	5,8	5,9	4,2	4,2	3,7	3,7	3,5	3,1	2,4	1,5	1,4	3,5	3,6
Satu Mare	3	6,5	6,1	4,6	4,8	4,6	4,4	4	4,2	3,2	2,6	2,5	4,2	4,3
Arat	3,1	6,8	5,2	3,5	3,6	3,2	2,8	2,4	2,3	1,5	1,4	1,2	3,1	3,1
Timis	1,6	4,5	3,7	1,9	2	1,9	1,6	1,3	1,1	1	0,8	0,8	1,9	1,9

Source: www.insse.ro (* estimated by the authors)

3. Conclusions

Lastly, we would like to point out that local labor markets in the cross-border area, in both Romania and Hungary, did not receive any support in the evolution of local development, nor did the national strategies and policies have any impact on the local labor markets. In both Romania and Hungary, cross-border cooperation projects have not been specifically targeted towards the development of local labor markets. It is vital to implement the objectives of smart development at the local

level as well as at the national level over the next term of the 2021-2027 development strategy cycle, by encouraging an innovative and intelligent economic transformation. Automating technology processes and public services at the local level, through the use of localization digitization systems and automation of public services (public safety, public services and utilities, energy monitoring, environment, public lighting, GIS systems - smart-city interventions)

It is necessary to digitize the primary activities of rural life in order to sustain both the active population in the labor force and the vulnerable population.

Beyond infrastructure expenditures, the digitization of business support infrastructures, such as incubators, accelerators, hubs, science and technology parks, and co-working spaces, must provide new and more advanced services to entrepreneurs and startups. It is possible to promote and sustain sustainability, security, and a healthy lifestyle in the smart city through testing and creating technologies that are beneficial to the inhabitants.

Digitization in education is being achieved by raising the degree of digitization in the field, both in terms of associated life events and in the use of digitization as a learning aid, as well as by increasing the degree of culture in the area. Digital systems and digitalization of administration (digital transformation of enterprises by adopting technologies for building new business models, assisting in the establishment of Digital Innovative Hubs) are being used to improve the process of local public management in decision making (IHL).

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in the context of smart and innovative economy] PN 19130101, coordinator Dr. Speranța Pîrciog.

References

1. Alpopi, C.; Burlacu, S.; Iovițu, M. (2018) Procesul de globalizare și politicile ecologice. In: *Competitivitatea și Inovarea în Economia Cunoașterii*. Vol. 2, 28-29 septembrie 2018, Chișinău, Republica Moldova: Departamentul Editorial-Poligrafic al ASEM, 2018, pp. 317-324. ISBN 978-9975-75-931-1.
2. Balu, F. O., Radulescu, C. V., Bodislav, D. A., Gole, I., Buzoianu, O. C. A., Burlacu, S., & Balu, P. E. (2021). Cost modeling and computation in the healthcare industry. case study on a Swiss medical care organization. *Economic Computation & Economic Cybernetics Studies & Research*, 55(1). DOI: 10.24818/18423264/55.1.21.05
3. Belostecinic, G., Mogoș, R. I., Popescu, M. L., Burlacu, S., Rădulescu, C. V., Bodislav, D. A., & Oancea-Negescu, M. D. (2022). Teleworking—An Economic and Social Impact during COVID-19 Pandemic: A Data Mining Analysis. *International Journal of Environmental Research and Public Health*, 19(1), 298.
4. Bodislav, D. A., Buzoianu, O. A. C., Burlacu, S., & Rădulescu, C. V. (2020a). Analysis of companies in Romania from the perspective of risk perception and the management needs thereof. *Economic Convergence in European Union*, 341-349.
5. Bodislav, D. A., Buzoianu, O. A. C., Burlacu, S., & Rădulescu, C. V. (2020b). Analysis of companies in Romania from the perspective of risk perception and the management needs thereof. *Economic Convergence in European Union*, 341.
6. Bodislav, D.A., Radulescu, C.V., Bran, F. and Burlacu, S., (2020c) Public Policy in the Areas of Environment and Energy. 6th BASIQ International Conference on New Trends in Sustainable Business and Consumption. Messina, Italy, 4-6 June 2020. Bucharest: ASE, pp. 228-235
7. Bran, F., Rădulescu, C. V., Bodislav, D. A., & Burlacu, S. (2020). Environmental risks in the context of globalization. *Economic Convergence in European Union*, 350.
8. Burlacu, S., Angheluță, S.P., Oancea Negescu, M.D. and Platagea Gombos, S., (2021a). Level of Adult Education in the European Union. In: R. Pamfilie, V. Dinu, L. Tăchiciu, D. Pleșea, C. Vasiliu eds. 2021. 7th BASIQ International Conference on New Trends in Sustainable Business and Consumption. Foggia, Italy, 3-5 June 2021. Bucharest: ASE, pp. 43-51 DOI: 10.24818/BASIQ/2021/07/005
9. Burlacu, S., Diaconu, A., Balu, E. P., & Gole, I. (2021b). The Economic and Social Effects of Unemployment in Romania. *Revista de Management Comparat International*, 22(1), 21-27. DOI: 10.24818/RMCI.2021.1.21
10. Burlacu, S., Negescu, M. D. O., Patarlageanu, S. R., & Vasilescu, R. A. (2021c). Digital globalization and its impact on economic and social life. In *SHS Web of Conferences* (Vol. 129, p. 06003). EDP Sciences.
11. Burlacu, S., Ciobanu, G., Troaca, V. & Gombos, C. (2021d). The Digital Finance – opportunity of development in the new economy. Proceedings of the International Conference on Business Excellence, 15(1) 392-405. <https://doi.org/10.2478/picbe-2021-0036>
12. <https://eur-lex.europa.eu/>
13. Jianu, I., Dobre, I., Bodislav, D. A., Radulescu, C. V., & Burlacu, S. (2019). The implications of institutional specificities on the income inequalities drivers in

- European Union. *Economic Computation and Economic Cybernetics Studies and Research*, 53(2), 59-76. Bran, F., Rădulescu, C. V., Bodislav, D. A., & Burlacu, S. (2020). Environmental risks in the context of globalization. *Economic Convergence in European Union*, 350-356.
14. National Institute of Statistics www.insse.ro
 15. Negescu, M D; Burlacu, S; Mitriță, M; Buzoianu, O C A. Managerial Analysis of Factoring at the International Level *Challenges of the Contemporary Society*. Proceedings; Cluj-Napoca Vol. 13, Iss. 1: 99-102. Cluj-Napoca: Babes Bolyai University. (2020)
 16. Popescu, M. L., Gombos, S. P., Burlacu, S., & Mair, A. (2021). The impact of the COVID-19 pandemic on digital globalization. In *SHS Web of Conferences* (Vol. 129, p. 06008). EDP Sciences.
 17. Profiroiu, C. M., Bodislav, D. A., Burlacu, S., & Rădulescu, C. V. (2020a). Challenges of Sustainable Urban Development in the Context of Population Growth. *European Journal of Sustainable Development*, 9(3), 51-51.
 18. Profiroiu, C. M., Rădulescu, C. V., & Burlacu, S. (2020b). The Challenges of Smart City in The Context of Globalization And The Health Crisis. In *Proceedings of Administration and Public Management International Conference* (Vol. 16, No. 1, pp. 4-11). Research Centre in Public Administration and Public Services, Bucharest, Romania.
 19. Program cross-border cooperation program 2007-2013 Hungary - Romania "http://www.huro-cbc.eu/ro/
 20. Rădulescu, C. V., Bodislav, D. A., Bran, F., & Burlacu, S. (2020a). The Impact of Cross-Border Cooperation Between the Republic of Moldova And Romania on Socio-Economic Development. *EURINT*, 7, 63-79.
 21. Rădulescu, C. V., Burlacu, S., Bodislav, D. A., & Bran, F. (2020b). Entrepreneurial Education in the Context of the Imperative Development of Sustainable Business. *European Journal of Sustainable Development*, 9(4), 93-93.
 22. Radulescu, C.V.; Ladaru, G.-R.; Burlacu, S.; Constantin, F.; Ioanăș, C.; Petre, I.L. (2021) Impact of the COVID-19 Pandemic on the Romanian Labor Market. *Sustainability 2021*, 13, 271. <https://doi.org/10.3390/su13010271>
 23. Regulation of the European Parliament and of the Council 29.5.2018 SWD (2018) 283 final
 24. Sarbu, R., Alpopi, C., Burlacu, S., & Diaconu, S. (2021). Sustainable urban development in the context of globalization and the health crisis caused by the covid-19 pandemic. *Les Ulis: EDP Sciences*. DOI: <http://dx.doi.org/10.1051/shsconf/20219201043>
 25. Statistical Yearbook 2019 edition Sixty- issue, United Nation, ISBN 978-92-1-259132-2
 26. The Interreg V-A Romania - Hungary program was implemented in the period 2014-2020
 27. The Interreg V-A Romania program for the next strategic cycle 2021-2027 will <https://interreg-rohu.eu/ro/home/>
 28. The Treaty on the Functioning of the European Union and Regulation (EU) no. 1299/2013 from 17.12.2013