Shift-Share Analysis of Local Economy's Competitiveness: Case Study of the Varaždin-Koprivnica Region, Croatia

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ABSTRACT

This study researches local economy's competitiveness in the Varaždin-Koprivnica Region (North-Western Croatia) in the period between 2009 and 2020. Shift-share method has been used which measures the deviation between the regional development and the development of total national area and tends to explain whether it is the result of exogenous or endogenous conditions. Data on the number of employed people and Gross Value Added were used as points of reference for the competitiveness. The results showed the above average regional development which is the result of the influence of endogenous or local conditions indicating that the region has competitive advantages. Manufacturing is the most competitive activity. The analysis revealed intra-regional disparities as well.

Introduction

One of the main goals of regional and local policies is to shape strategies for the improvement of local community's competitiveness (Krželj-Čolović, 2015). According to one of the definitions, regional competitiveness represents the capability of region to create high and raising income and improve the life of its inhabitants (Meyer-Stamer, 2016). Strengthening of regional competitiveness is one of the strategic goals of the National development strategy of the Republic of Croatia until the year 2030 (Croatian Parliament, 2021). The document emphasizes that the focus of spatial dimension of regional development policy is the strengthening of abilities of the cities which should be the carriers of development in their area of gravity.

The competitiveness of regions is closely connected to regional development (Bednáriková, 2022). While the economies of certain regions are declining, the others are managing to keep their competitiveness. The ability of regions to attract innovative and creative people and offer high-quality cultural programs are important characteristics of regional competitiveness advantage (Kitson et al., 2004). The basis of economic development and competitiveness in globalized world is the knowledge, skills and the ability to learn. In the economy based on knowledge, the organizations and regions that learn get the crucial role (Maskell, 2001; Matatkova & Stejskal, 2012). The emphasis is on local knowledge and creativity. Regional competitiveness depends on local processes of creating knowledge when individuals and companies learn about new technologies and how to exchange information (Malecki, 2004). Since human resources is the initiator of econom-

ic growth, the differences in the development of regions are significantly the consequence of uneven investments in human resources, knowledge and inovations (Huggins et al., 2013; Jagódka & Snarska, 2023).

Porter (1998) sees the improvement of knowledge and creativity through clusters as the key initiators of regional competitiveness. In the process he emphasizes the role of clusters oriented to export. Nowadays, industrial clusters are the instrument of regional policy, which means the tool to support the competitiveness of regional economy (Matatkova & Stejskal, 2012; Jagódka & Snarska, 2023).

There are several ways to approach measuring of regional competitiveness taking into consideration different models and methods of the analysis and competitiveness indicators (Tijanić, 2020). In Croatia, National competitiveness committee in cooperation with UNDP developed Regional competitiveness index of Croatia which was used to value the competitiveness of Croatian NUTS-2 and NUTS-3 regions between the years 2007 and 2013 (NCC, 2014). According to this index, the most competitive NUTS-3 regions are located along the west Croatian border: The City of Zagreb, County of Varaždin, County of Međimurje in central Croatia and County of Istria on the coast. Less competitive NUTS-3 regions are in the east part of Croatia (County of Požega-Slavonia, County of Vukovar-Sirmium, County of Virovitica-Podravina) and the mountain part of Croatia (County of Lika-Senj) and County of Sisak-Moslavina. European Committee developed EU Regional Competitiveness Index (RCI) which shows the strengths and weaknesses of European NUTS-2 regions, and since 2013 it has been calculated for Croatian regions as well (European Commission, 2013). Northern Croatia is the most competitive among Croatian NUTS-2 regions.

The aim of the study is to research local economy's competitiveness in the Varaždin-Koprivnica Region for the period between 2009 and 2020. The following hypothesis was established: the region has local competitive advantages and is above average national level of competitiveness. Besides the general goal, several more substantial research tasks have been set:

- measure the difference in development dynamics of the region and total national area,
- establish whether the difference in development dynamics is the result of exogenous (structural) or endogenous (local) conditions, and whether the region holds competitive advantages,
- identify competitive activities of the region,
- to examine possible existence of intra-regional disparities.

Varaždin-Koprivnica Region is a part of NUTS-2 Northern Croatia region, which covers three NUTS-3 regions: County of Varaždin, County of Međimurje and County of Koprivnica-Križevci (Fig. 1). The river Drava is the skeleton of that region. The region is located near the Hungarian and Slovenian border, and at the same time in the vicinity of Austria. Good traffic connection with the listed countries and the capital city Zagreb as well as the tradition of entrepreneurship and manufacture (Savić et al., 2021) had a positive impact on its economic development. In 2021, the population of the region was 365,958 (9.5% of Croatian population) in the area of 3,732 km2 (6.6% area of Croatia). 9.2% of the employed people in Croatia are concentrated there (CBS, 2022).

Figure 1. Analysed area of research

Data and Methods

Shift-share analysis was used in order to answer the research questions. It is a technique used for measuring which tries to explain the difference in development dynamics between a smaller and a larger area (in this case the region and Croatia). Data of the number of employed people (in legal entities) and Gross Value Added (GVA) collected and published by Croatian Bureau of Statistics were used as the indicators of development dynamics.

Regional, structural and local factors were calculated in the shift-share analysis. Regional factor quantifies the difference between development dynamics of the region and Croatia, and is calculated according to the formula (adapted to Kosfeld, 2018):

$$RF = \frac{r^{t+1}}{r^t} \div \frac{c^{t+1}}{c^t} \tag{1}$$

- where r^{t+1} is the number of employed/GVA in the region in a newer year, r^t is the number of employed/GVA in the region in the earlier year, C^t+1 is the number of employed/GVA in Croatia in the newer year, C^t is the number of employed/GVA in Croatia in the earlier year. If RF is >1 development in the region is above average.

Structural and local factors provide the answer to the question whether the difference in development happened due to exogenous (structural) or endogenous (local) conditions (Wenjuan, 2006). If SF is >1, fast-growing activities in the country are extremely represented in the region while LF>1 indicates that the region has competitive advantages. To calculate the structural factor the following formula was used (adapted from Farhauer & Kröll, 2013; Kosfeld, 2018):

$$SF = \frac{\sum_{i=1}^{I} \left(r_i^t \cdot C_i^{t+1} / C_i^t \right) / r^t}{C^{t+1} / C^t} \tag{2}$$

- where r_i^t is the number of employed/GVA in the activity i in the region in the earlier year, C_i^t is the number of em-

ployed/GVA in activity i in Croatia in the earlier year, C_i^{t+1} is the number of employed/GVA in the activity i in Croatia in the newer year.

Local factor, or better yet, local competitiveness factor was calculated the following way (Farhauer & Kröll, 2013; Kosfeld, 2018):

$$LF = \frac{r^{t+1}}{\sum_{i=1}^{I} r_i^t \cdot C_i^{t+1} / C_i^t} \tag{3}$$

In order to identify the competitive activities in the region, change in the number of employed/GVA in every activity was decomposed on several components – national, structural and local (Dawson, 1987; Heijman & Heide, 1998; Çelebi Deniz, 2014). The last of the listed components is especially important since the activities with higher positive value of this component can be considered competitive. The component of local competitiveness is the difference between the real change of employment/GVA in a certain activity in the region and the expected change of employment/GVA if the same happened according to national growth rate of that activity.

The relations between structural (Proportional Shift) and local (Differential Shift) factors enable the determination of the type of region, which is the essence of Boudeville's classification (Tab. 1). For every type of region Christofakis et al. (2019) suggest the basic means of regional policy, emphasizing that regional flaws can be removed by general improvements of the infrastructure or injecting growing sectors in the region.

Besides the listed quantity analysis, a short written structural interview with the representatives of Croatian Chamber of Economy (CCE) and its county organizations[1] was conducted. The goal was to additionally interpret the acquired results.

Table 1. Boudeville's classification of region types and means of regional policy

Type		RF	SF	LF		Means of regional policy
1	Regions grow faster than average	>1	>1	>1	SF>LF	
2		>1	>1	>1	SF<LF	
3		>1	>1	<1		infrastructure strengthening
4		>1	<1	>1		sectoral restructuring
5	Regions grow below average	<1	<1	>1		sectoral restructuring
6		<1	>1	<1		infrastructure strengthening
7		<1	<1	<1	SF<LF	sectoral restructuring and infrastructure strengthening
8		<1	<1	<1	SF>LF	infrastructure strengthening and sectoral restructuring

Source: modified according to Christofakis et al., 2018; Frey, 2004; Tamayo, 1999.

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Results

Shift-share analysis of employment in the Varaždin-Koprivnica Region

Economic structure of the Varaždin-Koprivnica Region is significantly different from the structure of national economy. According to the data of the number of employed people in 2020 (CBS, 2021), manufacturing dominates in the economic structure of the region with the share of 40.5%. It is followed by retail (10.8%), education (9.5%), construction (7.3%) and health care (7.1%). While in the region the number of employed in the industry exceed many times over the number of those employed in retail, in Croatia those two activities have a similar number of the employed (Tab. 2). In spite of the national trend of tertiarization and deindustrialization of economy, the region was more successful in the transition period and continues to achieve a more dynamic industrial development.

The region represents one of the strongest industrial areas in Croatia which can legitimately be called the industrial region. In the literature it is known as the Upper-Drava and Međimurje industrial region which includes the industrial centres Varaždin, Čakovec, Koprivnica and Ludbreg (Feletar & Stiperski, 1992; Lončar & Stiperski, 2019). Counties in the North-West of Croatia are traditionally characterised with the highest level of industrialization in the country (Lončar & Braičić, 2016). The leading areas are the County of Varaždin and the County of Međimurje were the only counties in Croatia to have a degree of industrialization higher than 130 in 2020, which means there were more than 130 employees in manufacturing on

Table 2. Number and structure of the employed in the Varaždin-Koprivnica Region and Croatia according to economic activities

Activities*	Employment in 2020				Change 2009-2020 in %	
	Varaždin-Koprivnica Region		The Republic of Croatia		Varaždin-Koprivnica Region	The Republic of Croatia
	Number	%	Number	%		
A	1,148	1.0	22,108	1.9	-49.8	-10.7
B	625	0.6	4,190	0.4	-11.6	-51.1
C	44,285	40.5	207,303	17.5	8.3	-11.2
D	1,022	0.9	14,082	1.2	-35.4	-16.1
E	1,993	1.8	26,065	2.2	34.9	23.0
F	8,008	7.3	82,261	6.9	-18.0	-18.7
G	11,825	10.8	178,615	15.0	-6.3	-6.8
H	4,592	4.2	63,648	5.4	6.0	-0.9
I	2,436	2.2	56,548	4.8	49.0	48.2
J	1,559	1.4	39,540	3.3	69.1	29.7
K	1,972	1.8	35,147	3.0	-20.2	-6.5
L	173	0.2	7,279	0.6	35.2	42.1
M	2,899	2.7	50,148	4.2	11.8	4.5
N	1,235	1.1	39,395	3.3	-5.8	27.3
O	5,588	5.1	104,941	8.8	-7.1	-0.8
P	10,443	9.5	118,999	10.0	25.6	15.4
Q	7,767	7.1	99,865	8.4	27.2	25.2
R	1,057	1.0	23,550	2.0	40.6	19.3
S	728	0.7	14,040	1.2	7.1	18.5
Total	109,355	100.0	1,187,724	100.0	4.6	1.3

*A: Agriculture, forestry, and fishing; B: Mining and quarrying; C: Manufacturing; D: Electricity, gas, steam and air conditioning supply; E: Water supply; sewage, waste management activities; F: Construction; G: Wholesale and retail trade; H: Transportation and storage; I: Accommodation and food service; J: Information and communication; K: Financial and insurance; L: Real estate activities; M: Professional, scientific and technical activities; N: Administrative and support service activities; O: Public administration and defence; compulsory social security; P: Education; Q: Human health and social work; R: Arts, entertainment, and recreation; S: Other service activities.

Source: CBS, 2010; 2021.

1000 inhabitants. The County of Koprivnica-Križevci also has a relatively high percentage of industrialization (83.2) (according to CBS, 2021, 2022).

This industrial region is characterised by the export orientated industry which is mostly work-intensive and low accumulative. Food, textile, leather and shoemaking industry and metal processing industry are the most represented (Savić et al., 2020, 2021). According to total income (2022) the leading industrial companies in Varaždin are *Vindija*, *Koka* (food factory), *Ytres* (footwear, textile), *Kostwein* (machine factory) etc. In Koprivnica *Podravka* (food factory) and *Belupo* (pharmaceutical company) stand out, while the leading companies in Čakovec are *Perutnina Ptuj Pipo* (food factory), *Tubla* (textile industry) and *Muraplast* (rubber and plastic) (Internet 1).

The results of shift-share analysis (Tab. 3) indicate that the Varaždin-Koprivnica Region achieved the above average employment growth compared to the entire area of Croatia in the observed period. The value of regional factor (1.032) indicates that the employment in the region rose by 3.2% more than on national level. Since the local factor is higher and the structural factor lower than 1, the growth in the region is the result of endogenous conditions, which means that the region possesses local competitive advantages. According to the local competitive factor (1.08) the employment growth is higher by 8% than expected based on the local economy structure. According to Boudeville's classification, the region is type 4.

According to the statement of the connoisseurs in Chamber of Economy of analysed counties, local advantages of the researched area are: the tradition of the industrial production, the vicinity of Austria, Slovenia and Hungary as well as the good overall traffic position and the connection with the capital city. Despite the development and high employment rates, competitive drawbacks of the region are emphasised. They are visible in low salaries (for example in textile industry, but in other activities as well) and the lack of work force which is becoming a limiting factor of further development. Along with the increasing necessity for the foreign workers, they indicate the need for a better coordination of educational system and economy in order to generate domestic work force and pass the knowledge to younger generations to preserve the industrial base.

In order to establish the competitive economic sectors using the shift-share analysis the entire change in the number of the employed is decompose into components (tab. 3). The most important component is local competitiveness which shows how many work places in a certain activity are attributed to the competitiveness of that activity (Çelebi Deniz, 2014). It can be noticed that 12 activities have a positive value of the local competitiveness component, manufacturing standing out. In the region, the number of employed in manufacturing has increased by 3,404, while at the same time manufacturing in Croatia loses work force which causes an extremely negative structural component (-5,114). Structural component is a hypothetical value which indicates the change in the number of employees in manufacturing in the region if the shifts occur according to the national rate of change. Therefore, manufacturing is the most competitive sector in the Varaždin-Koprivnica Region.

Since the Varaždin-Koprivnica Region consists of three counties, the continuation of analysis had to research possible intra-regional disparities. As shown on figure 2, Counties of Varaždin and Međimurje have RF>1 which indicates the above average employment growth in comparison to the entire area of Croatia. The above average growth in these counties was achieved due to a favourable local competitiveness factor (LF>1) despite the 'unfavourable' structural characteristics of their economy (SF<1). Therefore, these two counties are also type 4 regions according to Boudenville's classification. Structural characteristics are conditionally unfavourable since the economic structures of these counties are significantly represented by the activities which stagnate or register regression on national level. The County of Koprivnica-Križevci has unfavourable trends because the change in the number of employed is below average. That means that the employment rate is decreasing. The below average development of employment in the County of Koprivnica-Križevci is the result of mutual activity of unfavourable structural (exogenous) and local (endogenous) circumstances, so this county belongs to type 7 regions. The unfavourable local competitiveness factor (LF<1) indicates a lower level of local economy's competitiveness in the County of Koprivnica-Križevci.

According to data in table 4, only four economic activities in County of Varaždin have a negative component of local competitiveness while manufacturing leads in positive values. However, in the County of Međimurje ten activities have negative local competitiveness. None the less, that loss is successfully compensated through manufacturing which has an extremely positive indicator of local competitiveness in that area as well, which makes the total component of local competitiveness of the County of Međimurje a positive one. On the other hand, manufacturing in the County of Koprivnica-Križevci as well as the other 11 activities have a negative indicator of local competitiveness. In the interview, the leading people of the County chamber in Koprivnica emphasise the fact that there are efforts to increase local competitiveness. They are also mentioning the upcoming completion of a number of large infrastructural projects like communal infrastructure of the leading city centres, as well as the sectors of traffic, sanitation departments and manufacturing, which, according to their opinion, should influence the economic growth of the County of Koprivnica-Križevci. The modernization of railway in-

Table 3. Shift-share analysis of employment development in the Varaždin-Koprivnica Region, 2009-2020

Activity*	Total change	„Share-Effect"	„Shift-Effect"		
		National growth component	Regional component (Total Shift)	Structural component (Proportionality Shift)	Local competitiveness component (Differential Shift)
A	-1,138	30	-1,168	-276	-893
B	-82	9	-91	-371	279
C	3,404	540	2,864	-5,114	7,978
D	-559	21	-580	-276	-304
E	516	20	496	320	176
F	-1,753	129	-1,882	-1,951	69
G	-795	167	-962	-1,022	61
H	258	57	201	-97	298
I	801	22	779	767	12
J	637	12	625	262	363
K	-499	33	-532	-192	-340
L	45	2	43	52	-9
M	306	34	272	83	189
N	-76	17	-93	340	-433
O	-428	79	-507	-125	-382
P	2,126	110	2,016	1,169	847
Q	1,662	81	1,581	1,455	126
R	305	10	295	135	160
S	48	9	39	117	-78
Total	4,778	1,381	3,397	-4,723	8,120
			Regional factor (RF) = 1.032		
			Structural factor (SF) = 0.955		
			Local competitiveness factor (LF) = 1.080		

*reading of letters for activities the same as in table 1

Source: Author's calculation based on data from CBS, 2010; 2021.
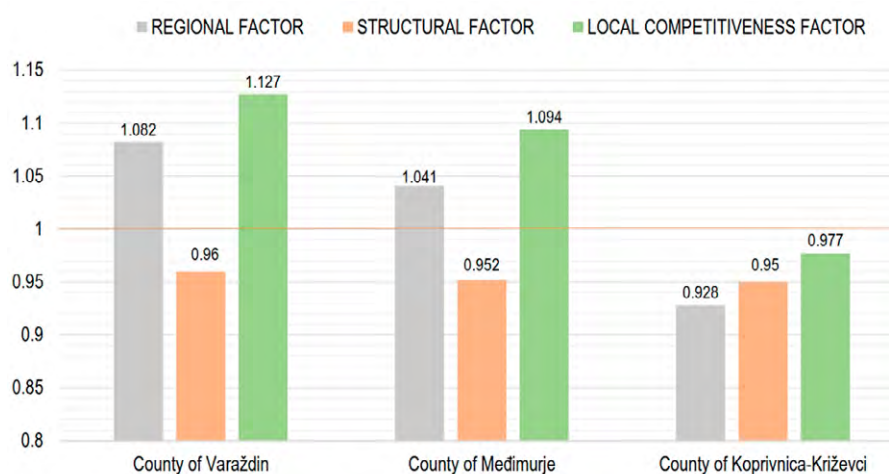
Figure 2. Regional, structural and local employment factor in the counties of the Varaždin-Koprivnica Region, 2009-2020.
Source: Author's calculation based on data from CBS, 2010; 2021.

Table 4. Shift analysis of employment development in the counties of the Varaždin-Koprivnica Region, 2009-2020.

Activity*	Total change in the number of employed			Local competitiveness component (Differential Shift)		
	County of Varaždin	County of Međimurje	County of Koprivnica-Križevci	County of Varaždin	County of Međimurje	County of Koprivnica-Križevci
A	-645	-283	-210	-553	-232	-108
B	-31	2	-53	95	4	181
C	2,792	1,888	-1,276	4,923	3,246	-192
D	-53	-35	-471	36	17	-357
E	79	72	365	-132	-14	323
F	-571	-749	-433	208	-75	-63
G	-17	-776	-2	386	-527	201
H	469	79	-290	489	87	-278
I	460	245	96	169	-71	-86
J	478	99	60	337	7	19
K	-44	-220	-235	24	-179	-185
L	41	8	-4	14	-13	-10
M	280	52	-26	230	14	-55
N	151	-139	-88	4	-253	-184
O	-194	-202	-32	-171	-192	-20
P	947	624	555	382	249	217
Q	419	802	441	-452	508	70
R	93	170	42	15	142	3
S	46	1	1	7	-37	-48
Total	4,700	1,638	-1,560	6,012	2,681	-573

*reading of letters for activities the same as in table 1

Source: Author's calculation based on data from CBS, 2010; 2021.

frastructure in the corridor stretching from the Hungarian border, across Koprivnica and Zagreb to Rijeka is one of the most important projects.

Shift-share analysis of Gross Value Added (GVA) in the Varaždin-Koprivnica Region[2]

The Varaždin-Koprivnica Region effectuated 3.5 billion euros of GVA in 2020. The highest GVA was effectuated in manufacturing and it made 35.7% of total GVA in the region (tab. 5). The same year manufacturing in Croatia made only 14.4% of total GVA in the country (CBS, 2023). The development of the Varaždin-Koprivnica Region can be characterised as above average due to a stronger GVA growth than that on national level. Even though a growth of GVA was recorded in most activities in the period between 2009 and 2020, the most prominent was the one in manufacturing activity. Gross Value Added made in manufacturing in the region grew many times compared to Croatia.

According to regional factor value (1.049) GVA in the Varaždin-Koprivnica Region rose by 4.9% more than on national level (tab. 6). Just like with shift-share analysis of the employment development, the local factor is higher and the structural lower than 1. That indicates that the above average growth of GVA in the region is the result of endogenous factor, and proves that the region has local competitive advantages. According to local competitiveness factor (1.072) the growth of GVA is higher by 7.2% than expected based on the structure of local economy. The weaknesses of branch structure have been successfully compensated by local forces – the region is type 4 according to Boudeville.

The enclosed table presents the total change in GVA decomposed to components and groups of activities. Man-

Table 5. Structure of Gross Value Added (GVA) in the Varaždin-Koprivnica Region and Croatia according to economic activities (current prices)

Activity*	GVA in 2020				Change 2009-2020 in %	
	Varaždin-Koprivnica Region		The Republic of Croatia		Varaždin-Koprivnica Region	The Republlic of Croatia
	in thous. euros	%	in thous. euros	%		
A	242,782	7.0	1,555,672	3.7	-15.4	-12.4
B, D, E	130,288	3.8	1,825,307	4.3	-1.6	23.7
C	1,233,960	35.7	6,086,541	14.4	51.7	3.6
F	194,827	5.6	2,536,736	6.0	4.0	-6.4
G, H, I	428,748	12.4	8,385,600	19.9	-5.1	9.5
J	77,641	2.2	2,529,075	6.0	7.0	35.6
K	101,265	2.9	2,176,323	5.2	-26.7	-10.9
L	279,506	8.1	4,157,864	9.9	9.2	18.6
M, N	131,728	3.8	3,192,672	7.6	1.5	5.4
O, P, Q	552,416	16.0	8,239,842	19.5	24.9	25.8
R, S, T, U	79,521	2.3	1,509,970	3.6	46.6	34.6
Total	3,452,682	100.0	42,195,602	100.0	16.5	11.0

*reading of letters for activities the same as in table 1

Source: CBS, 2023.

ufacturing is standing out with the highest values of regional and local components; manufacturing is the most competitive activity in the Varaždin-Koprivnica Region according to GVA. However, unlike manufacturing, it should be noted that a substantial number of activities has a negative regional component or the component of regional competitiveness. Activities of retail, transport and storage of furniture and food preparation (G, H, I) as well

Table 6. Shift-share analysis of Gross Value Added (GVA) in the Varaždin-Koprivnica Region, 2009-2020. (in current prices in thous. euros)

Activity	Total change	„Share-Effect"	„Shift-Effect"		
		National growth component	Regional component (Total Shift)	Structural component (Proportionality Shift)	Local competitiveness component (Differential Shift)
A	-44,278	31,651	-75,929	-67,097	-8,832
B, D, E	-2,148	14,602	-16,750	16,770	-33,520
C	420,679	89,672	331,007	-60,429	391,436
F	7,417	20,664	-13,247	-32,565	19,318
G, H, I	-23,015	49,811	-72,826	-6,847	-65,980
J	5,110	7,997	-2,887	17,798	-20,685
K	-36,825	15,226	-52,051	-30,215	-21,836
L	23,452	28,232	-4,780	19,367	-24,148
M, N	1,983	14,306	-12,323	-7,318	-5,005
O, P, Q	110,253	48,753	61,500	65,393	-3,893
R, S, T, U	25,284	5,980	19,304	12,802	6,501
Total	487,912	326,894	161,018	-72,339	233,357
			Regional factor (RF) = 1.049		
			Structural factor (SF) = 0.978		
			Local competitiveness factor (LF) = 1.072		

Source: Author's calculation based on data from CBS, 2023.

as mining and extraction, and activities of electric power distribution, water and gas distribution (B, D, E), real estate business (L), financial activities (K), information and communications (J) etc. stand out due to negative value of local competitiveness. Despite that, total component of local competitiveness is positive because the competitive drawbacks and weaknesses noticed in these activities, are successfully compensated with the competitive advantages in manufacturing.

Data on GVA has also indicated the existence of intra-regional disparities in the Varaždin-Koprivnica Region (Fig. 3). In Counties of Varaždin and Međimurje, RF>1, which indicates the above average growth of GVA in comparison to Croatia. The same as with the growth of employed, the above average growth of GVA in those Counties was achieved due to a favourable local competitiveness factor (LF>1) in spite of less favourable structural characteristics of their economy (SF<1). Therefore County of Varaždin and County of Međimurje belong to type 4 regions. According to this indicator County of Koprivnica-Križevci also shows unfavourable shifts. Below average growth of GVA in County of Koprivnica-Križevci is the result of unfavourable structural and local conditions (according to Boudeville regional type 8). Local competitiveness factor is low
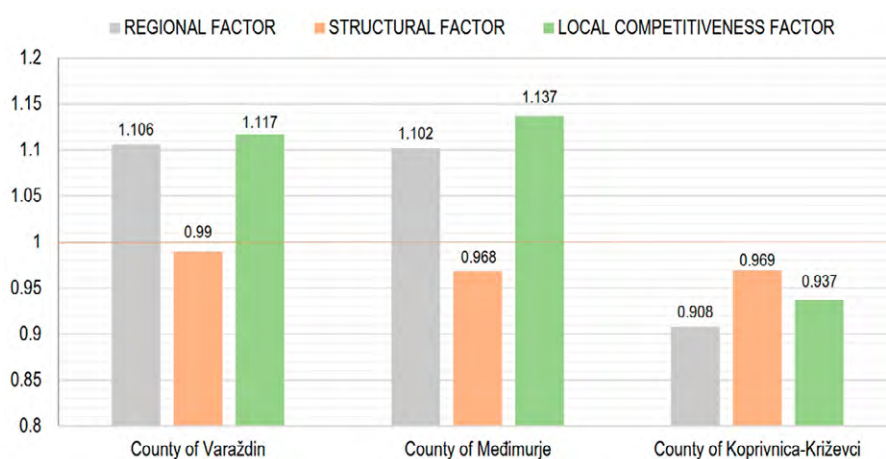

Figure 3. Regional, structural and local factor of Gross Value Added in the counties of the Varaždin-Koprivnica Region, 2009-2020.
Source: Author's calculation based on data from CBS, 2023.

Table 7. Shift analysis of Gross Value Added (GVA) development in counties of the Varaždin-Koprivnica Region, 2009-2020. (in current prices in thous. euros)

Activity*	Total GVA change			Local competitiveness component (Differential Shift)		
	County of Varaždin	County of Međimurje	County of Koprivnica-Križevci	County of Varaždin	County of Međimurje	County of Koprivnica-Križevci
A	-28,033	-10,474	-5,771	-18,262	-120	9,549
B, D, E	15,174	14,477	-31,799	3,838	8,703	-46,061
C	241,200	155,601	23,878	228,207	146,780	16,449
F	22,653	-3,924	-11,312	27,201	25	-7,907
G, H, I	-13,975	-14,628	5,588	-35,273	-26,024	-4,683
J	15,813	-2,261	-8,442	3,010	-9,513	-14,183
K	-7,527	-14,571	-14,727	-1,236	-10,556	-10,045
L	10,221	13,646	-415	-9,244	-435	-14,469
M, N	-8,288	4,698	5,573	-12,093	2,781	4,307
O, P, Q	36,152	36,011	38,090	-23,010	9,554	9,563
R, S, T, U	14,796	4,089	6,399	5,647	-166	1,021
Total	298,186	182,664	7,062	168,786	121,030	-56,459

*reading of letters for activities the same as in table 1

Source: Author's calculation based on data from CBS, 2023.

(0.937) which indicates a lower level of economy's competitiveness in this County.

Despite the fact that Counties of Varaždin and Međimurje have a favourable local competitiveness factor, the analysis of activities reveals that in all three counties there are activities with negative indicators of local competitiveness (tab. 7). In Counties of Varaždin and Međimurje this shortfall is compensated through manufacturing which generates an extremely positive indicator of local competitiveness which results in positive total component of local competitiveness. In County of Koprivnica-Križevci the compensation effect of manufacturing is absent, which makes its overall local competitiveness negative.

Discussion and conclusion

The Varaždin-Koprivnica Region is one of the main industrial cores in Croatia. Shift-share analysis has shown similar results regardless of the use of number of employed or Gross Value Added as indicators. In comparison with the Republic of Croatia this region registered the above average development which is the result of endogenous or local conditions. Therefore, it can be concluded that the region possesses competitive advantages. Geographical location in the vicinity of Hungary, Slovenia and Austria, good traffic connections with the capital city and tradition of manufacturing had a positive effect on its development and competitiveness.

Results similar to those presented in this case study can be noticed in other research papers, such as the already mentioned *Regional competitiveness index of Croatia* (NCC, 2014). Analysing *Regional competitiveness index*, Čučković et al. (2013) conclude that the counties in the North-West of Croatia have good performances regarding the development of infrastructure, entrepreneurship and investments, with somewhat lower educational indicators. Čavrak (2012) conducted a shift-share analysis of Croatian counties for the earlier period (1997-2008) and claimed that Counties of Zagreb and Varaždin have the highest growth of local competitiveness in the country. The County of Međimurje was also amongst the few counties with the growth in competitiveness, while the competitiveness of the County of Koprivnica-Križevci was already decreasing.

Besides its enormous importance in the economic structure of the area, manufacturing is the most competitive economic activity of the analysed region. It is mainly true for Counties of Varaždin and Međimurje. In the County Koprivnica-Križevci manufacturing is slightly less competitive but it is still one of the most industrialised in Croatia. The analysis indicated the presence of intra-regional disparities where Counties Varaždin and Međimurje note an above average growth compared to Croatia, whilst the development of the County of Koprivnica-Križevci has a below average development rate. Since nationally stagnating activities are significantly represented in the economic structure of Counties of Varaždin and Međimurje, their above average development is first and foremost the result of a favourable local competitiveness factor. The economic structure of County of Koprivnica-Križevci is also dominated by nationally stagnating activities but with the lower level of local competitiveness.

The obtained results can serve as a basis for rethinking economic policies. Although the region has local competitive advantages, due to its less favourable structural economic characteristics, the strengthening of nationally growing sectors is recommended (sectoral restructuring). For the County of Koprivnica-Križevci, along with the already mentioned restructuring, general improvement of the infrastructure is suggested, which should contribute to the competitiveness growth of its economy. Problems with the work force are one of the limiting factors in the further development of the region. It is suggested to work on a better coordination between education system and economy in order to generate a domestic work force with the skills necessary for the work market and adaptable to technological and other changes.

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