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Building the economy of the country and management of the local economy from the perspective of industrial specialization

Anna Wiśniewska-Sałek

Faculty of Management, Czestochowa University of Technology, Poland

E-mail address: annaw@zim.pcz.pl

ABSTRACT

The global economy and, more precisely, the participation in it is the objective itself which most enterprises would like to achieve. Unfortunately, the requirements that need to be fulfilled in order to participate in it are very often insurmountable barriers for large enterprises of the national economy, being at the medium and low level of the economic growth. Therefore, it is important for the country to know its leading industries to make every effort to strengthen them. The local economy is a valuable source of information on the location of industries which constitute the whole of specializations of the country. The paper makes uses of clusters as an output variable for the assessment of the industrial direction of the region. The research process refers to verifying the selected economic factors and comparing them to the possibilities of clusters in order to determine the specialization of the region.

***Keywords*:** Economy; clusters; local development; specialization

1. INTRODUCTION

Building the economy based on innovation is associated with investment in modern solutions. The support from the State is essential in the field of industrial development, particularly, when discussing technological development. The companies of the SME sector are very often an important source of the economic growth, which is the result of relatively

low values of transactions as well as market shares with simultaneous limited unit market force. Such a situation can be clearly observed internationally. A small share of small and medium enterprises is the resultant of the barriers encountered by them in the internationalization of their activities. (Pietrasieński, Ślusarczyk 2015, p. 113) The phenomenon of local networks in the internationalization process is also widely described by Musso and Francioni (2015, p. 335), who concentrated on the wine industry, underlining a multitude of literature studies (e.g. Alfred Marshall (1890, 1919); Porter (1998, 2000); Beccatini (1990); Brusco (1986); Maillat (1991); Kirat, Lung (1999); Staber (1994); Steiner (1998); Feldman, Francis (2004), Phelps, Ozawa (2003)), referring to the significance of the concept of the local specialization through the prism of geographical concentration of companies of the same industry. A large share of the group of small and medium enterprises in the economy makes authorities to provide solutions at least in the form of clusters which, over years, have undergone the development revolution. There can be observed a positive trend, both among national government and local/regional ones, supporting the managerial staff in the cluster or just cluster organizations. The support, among others, refers to extending knowledge in the field of fulfillment of the requirements of regional customers and taking actions compatible with the strategy of the local development. (Păuna 2016, p. 177)

The prospect for social and economic development of the State is largely dependent on the cluster development. The most efficiently operating clusters function in the innovatively developed industry. The efficient cluster policy positively affects their competitiveness and innovativeness. Therefore, the State policy directed to clusters should be based on the industries that indicate innovative opportunities and are characterized by high growth potential. (Vertakova, Grechenyuk, Grechenyuk 2016, p. 147)

2. THE ANALYSIS OF THE LOCAL ECONOMY

The study of the economic situation of the regions was conducted for the year of 2015 on the basis of the data provided by Central Statistical Office (http://stat.gov.pl) in the publications referring to individual regions of Poland – Regional Statistical Offices (SO). For the purposes of discussing the general condition of the local market there was used the information concerning employment, remuneration, sold production and entities of the national economy.

In order to standardize the final conclusions, the first two components of the analysis refer to the business sector by the following sections (PKD 2007):

A. Total
B. Industry of which:
B1. Manufacturing
C. Construction
D. Trade; Repair of Motor Vehicles
E. Transportation and Storage
F. Information and Communication
G. Real Estate Activities
H. Administrative and Support Service Activities

In turn, sold production of industry, due to its range, was limited to the selected 12 divisions (a decisive factor was relatively high repeatability of divisions in individual surveyed areas) including (PKD 2007):

1. Manufacturing
2. Manufacture of food products
3. Manufacture of wearing apparel
4. Manufacture of products of wood, cork, straw and wicker
5. Manufacture of furniture
6. Manufacture of paper and paper products
7. Manufacture of chemicals and chemical products
8. Manufacture of rubber and plastic products
9. Manufacture of other non-metallic mineral products
10. Manufacture of metal products
11. Manufacture of machinery and equipment n.e.c.
12. Manufacture of computer, electronic and optical products

In order to clearly illustrate the information included in Tables 1-6, there are used the above indications of sections and divisions as well as the national economy is divided into the following six areas (by indications): central (łódzkie - Ł, mazowieckie - MAZ), southern (małopolskie - MAŁ, śląskie - ŚL), eastern (podkarpackie - PDK, podlaskie - PDL, świętokrzyskie - ŚW, lubelskie - LBL), north-western (wielkopolskie – WLKP, zachodniopomorskie – ZP, lubuskie – LBU), south-western (dolnośląskie - DLN, opolskie - O), northern (kujawsko-pomorskie - KP, warmińsko-mazurskie - WM, pomorskie - POM).

Table 1. The economic characteristics of CENTRAL Poland.

	1	2	3	4	5	6	7	8	9	10	11	12
	Indices of sold production of industry (fixed prices) [%]											
Ł	104	99.5	96.8	105.7	104	96.4	109.9	104	97	94.2	90.6	-
MAZ	104.4	102.3	-	-	-	103.5	114.7	104.7	101.2	97.1	93.9	97.3
	A	B	B1	C	D	E	F	G	H			
	Average paid employment in the business sector in the voivodeship [in thous. people]											
Ł	322.5	169	142	19	56.4	19.9	6.9	6.6	25.4			
MAZ	1353.9	348.9	290.6	81	302.9	243.9	103.2	21.3	117.2			
	Average monthly gross salary in the business sector [PLN]											
Ł	3745.6	3986.5	3395.7	3480.6	3617.5	3217.6	5925.8	3821.1	2530.8			
MAZ	4991.8	4735.5	4508.1	5312.6	4937.7	4255.7	8064.2	5461.4	3252.4			

	Sold production of industry (current prices) in mln zl		
Ł	72706.6		
MAZ	237394.7		
	Entities of the national economy (including)	**trading companies**	**with foreign capital share**
Ł	241462	20084	3288
MAZ	766030	142530	33919

The analysis of the Łódzkie Voivodeship, in most cases, indicates the increases in employment and remuneration. The most significant increase, compared to the previous year, was recorded respectively in the section of information and communication (an increase by 24.6%) and administrative and support service activities (an increase by 8.6%). The decreases occurred only for employment, where the largest was recorded for the section of real estate activities (88.3%). The overall increase in sold production at the level of 104.1% translated into increases and slight decreases in its indices. While breaking down by divisions, there can be identified manufacture of chemicals and chemical products as well as manufacture of products of wood, cork, straw and wicker. There is also an improvement in the number of business entities as their number indicates an upward trend (+ 0.8%).

The Mazovian Voivodeship indicated slight decreases in employment in less than half of the sections. The smallest decrease was indicated by the section of real estate activities in spite of the largest increase in the area of an average monthly salary. The largest increase in the indices of sold production was indicated by the division of chemicals and chemical products and the largest decrease – by the division of manufacture of machinery and equipment. A general upward trend in the field of sold production and the number of entities of the national economy indicates an improvement in the situation in the discussed area.

Table 2. The economic characteristics of SOUTHERN Poland.

	1	2	3	4	5	6	7	8	9	10	11	12
	Indices of sold production of industry (fixed prices) [%]											
MAŁ	102.8	107.9	97	109.1	113.7	122.3	93.8	102.7	99.3	103.8	89.6	-
ŚL	106.9	101.9	110.5	109.7	111.9	101.3	-	115.2	103.2	107.1	93.9	106.5
	A	B	B1	C	D	E	F	G	H			
	Average paid employment in the business sector in the voivodeship [in thous. people]											
MAŁ	440.7	180	156.9	37.3	115.1	21.1	18.6	6	18.2			
ŚL	721.3	426.8	299.1	54.1	96.6	41.8	13	14.5	32.7			

	Average monthly gross salary in the business sector [PLN]								
MAŁ	3876.0	4017.3	3825.1	3701.1	3174.1	3125.1	6909.0	3756.5	3055.2
ŚL	4329,7	4819,8	4104,1	3742,6	3485,8	3594,2	5481,8	3992,5	2501,8
	Sold production of industry (current prices) in mln zl								
MAŁ	29220,0								
ŚL	194586,6								
	Entities of the national economy (including)				**trading companies**		**with foreign capital share**		
MAŁ	363883				36083		5112		
ŚL	465779				47907		6830		

Information and communication in both voivodeships indicated the largest increases both for employment and remuneration. The lowest indices of remuneration were in the section of administrative and support service activities (the Małopolskie Voivodeship – an increase by only 2.6%, the Śląskie Voivodeship – 0.8%). The decreases in employment at the level of 97.3% and 94.4% were recorded respectively by the sections of administrative and support service activities (małopolskie) and construction (śląskie). The Śląskie Voivodeship indicated an increase in sold production by 7% and the Małopolskie Voivodeship by 2.6%. Both voivodeships also indicated more business entities than in 2014.

Table 3. The economic characteristics of EASTERN Poland.

	1	2	3	4	5	6	7	8	9	10	11	12
	Indices of sold production of industry (fixed prices) [%]											
PDK	102.3	97.8	108.6	101.3	100.1	92.8	96.4	98.8	85.2	102.2	128.6	-
PDL	105.6	107.5	104.8	99.7	113.6	-	111.4	104.9	91.4	104.5	109.8	-
ŚW	103.1	100.5	82.7	97.8	89.4	48	106.4	-	105.8	115.4	99.2	-
LBL	113.5	110.8	113.8	101.7	106.4	107	85	103.2	-	120.8	128.8	-
	A	B	B1	C	D	E	F	G	H			
	Average paid employment in the business sector in the voivodeship [in thous. people]											
PDK	223.9	119.5	109.9	17.7	45.2	9.4	-	3.4	10.1			
PDL	97.9	47.4	43	9.2	22.9	5.8	1.2	2.2	2.6			

ŚW	109.8	57.9	51	9.8	22.3	6.1	1.3	1.9	3.4
LBL	178.1	90.9	66.8	14.9	40.7	13.4	2.2	4	-
	Average monthly gross salary in the business sector [PLN]								
PDK	3399.6	3557.2	3506.6	3276.7	2830	2948.5	-	3757.5	2093.6
PDL	3458.6	3486.2	3444.4	4174.2	3071.7	3187.5	4554.8	3750.5	2130.8
ŚW	3470.7	3684.7	3553.2	3455.3	3106.4	2994.5	4005.4	3735.1	2353.5
LBL	3525.4	3204.8	3173.7	2895.9	2539.3	2687.1	-	3510.8	-
	Sold production of industry (current prices) in mln zl								
PDK	37458.3								
PDL	20576.7								
ŚW	23350.6								
LBL	31762.6								

	Entities of the national economy (including)	**trading companies**	**with foreign capital share**
PDK	165155	11846	1687
PDL	99309	6490	805
ŚW	110574	6514	632
LBL	173184	12448	1562

The possessed data allow for the conclusion that the Podkarpackie Voivodeship indicated neither major negative nor positive changes. There are noticeable slight increases with slight decreases in relation to employment and remuneration.

A similar situation takes place in the case of the other two voivodeships of the area of Eastern Poland. Some disturbing trends are observed in the Świętokrzyskie Voivodeship, which, in the area of employment, indicates slight decreases but occurring in the vast number of sections. On the other hand, remuneration indicated increases on average by 3-9% everywhere.

The number of business entities and sold production of industry generally indicated a positive trend. However, there are noticeable very large increases, as at the level of 20-28%, in the Podkarpackie and Lubelskie Voivodeships. Manufacture of machinery and equipment indicated an increase by less than 30% in both regions. The highest indices can be observed in manufacture of metal products, which increased by 117.9% in the Lubelskie Voivodeship in 2015 compared to 2014.

Table 4. The economic characteristics of NORTH-WESTERN Poland.

	1	2	3	4	5	6	7	8	9	10	11	12
	Indices of sold production of industry (fixed prices) [%]											
WLKP	104.7	106.3	104.7	104.9	103	116.3	110.7	101.1	97.6	113.5	108.6	151
ZP	116.3	97.1	115.8	110.1	-	108.7	-	119.1	107.4	98.5	125.5	114.1
LBU	100.3	98.7	111.8	101.6	108.6	104.1	99.2	109.5	95.5	104.9	97.1	-

	A	B	B1	C	D	E	F	G	H
	Average paid employment in the business sector in the voivodeship [in thous. people]								
WLKP	662.7	308.6	283.9	36.1	198.5	42.7	10.2	7.4	27.5
ZP	167.1	85.7	78.2	11.5	28.4	13.2	4.1	3	5.2
LBU	117.1	68.7	64.7	6.3	16	8.3	1.1	1.6	7.5
	Average monthly gross salary in the business sector [PLN]								
WLKP	3676.4	3929.4	3837.1	4000.0	3200.5	3345.6	5928.9	4368.1	2907.9
ZP	3738.9	3730.8	3658.5	3801.0	3217.9	3737.6	4385.5	4385.5	3448.1
LBU	3383.4	3541.7	3483.6	2485.2	2541.8	2649.8	5043.8	3407.0	2038.6

	Sold production of industry (current prices) in mln zl
WLKP	140100.8
ZP	37174.7
LBU	29717.4

	Entities of the national economy (including)	**trading companies**	**with foreign capital share**
WLKP	409865	45060	7127
ZP	220615	18686	4874
LBU	111272	10290	2846

The highest share in the formation of employment in the business sector in the area of north-western Poland belonged to: administrative and support service activities (+16.1%), information and communication (+3.8%) and manufacturing (3.2%) respectively for the Wielkopolskie, Zachodniopomorskie and Lubuskie Voivodeships. In turn, the highest indices for remuneration were in the section of information and communication in the Wielkopolskie

and Lubuskie Voivodeships (respectively 11.5% and 11.4%) and construction (7.8%) in the Zachodniopomorskie Voivodeship. The increases of 0.6-1.3% were indicated by the number of business entities in the discussed region, whereas sold production, subsequently in the Wielkopolskie, Zachodniopomorskie and Lubuskie Voivodeships, showed a 51% increase in manufacture of computer, electronic and optical products; a 25.5% increase in manufacture of machinery and equipment and an 11.8% increase in manufacture of wearing apparel.

Table 5. The economic characteristics of SOUTH-WESTERN Poland.

	1	2	3	4	5	6	7	8	9	10	11	12
	Indices of sold production of industry (fixed prices) [%]											
DLN	104.7	94	108.6	90.6	107.6	117.2	91.6	99.5	115.1	104.9	112.7	101.3
O	108.6	114.3	97	99.6	109.9	112.6	94.2	107.9	104.4	97.3	110.6	-

	A	B	B1	C	D	E	F	G	H
	Average paid employment in the business sector in the voivodeship [in thous. people]								
DLN	447.4	212.2	176.3	26	79.7	19.6	12.5	7.4	50.3
O	93.1	53.8	49.1	7.5	13.6	7.1	0.5	1.5	3.6
	Average monthly gross salary in the business sector [PLN]								
DLN	4189.2	4625.9	4130.2	4480.6	3381.5	3538.6	6707.2	4269.2	2994.9
O	3699.9	3882.5	3827.7	3662.1	3459.0	3126.3	4561.4	3549.9	2886.0

	Sold production of industry (current prices) in mln zl
DLN	110000.2
O	23388.9

	Entities of the national economy (including)	**trading companies**	**with foreign capital share**
DLN	357102	37463	7578
O	100432	7079	1482

The worst situation in terms of employment takes place in the case of the section of administrative and support service activities and real estate activities since they indicated an increase of 93.4% and 97.3% respectively in the Dolnośląskie and Opolskie Voivodeships. A decrease in the average monthly salary was recorded in the Opolskie Voivodeship and it occurred in the section of information and communication (- 1.2%). The smallest increase in the other discussed region referred to trade and repair of motor vehicles. In both voivodeships there can be observed a decrease in sold production of industry on average by 7% for the

division of chemicals and chemical products. The voivodeships also indicate positive trends in the field of entities of the national economy.

Table 6. The economic characteristics of NORTHERN Poland.

	1	2	3	4	5	6	7	8	9	10	11	12
	Indices of sold production of industry (fixed prices) [%]											
KP	107.8	95	109.3	106.5	106.4	101.7	118	113.6	96.2	107.1	105.8	-
WM	104.4	104.6	106.9	110.7	105.9	118.3	-	-	107.6	104.9	87.4	-
POM	105.3	109.9	125	104.2	116.9	100	-	110.1	101.2	105	99.9	109.9
	A	B	B1	C	D	E	F	G	H			
	Average paid employment in the business sector in the voivodeship [in thous. people]											
KP	243	126.4	117.5	18.8	49	14.4	2	4.2	13.5			
WM	135.8	79.5	72.5	11	19.9	5.1	1.4	2.2	-			
POM	287.4	135.6	122.8	25.7	47.2	22.7	9.8	6.5	16.5			
	Average monthly gross salary in the business sector [PLN]											
KP	3459.5	3582.0	3554.4	3599.2	3317.2	2910.6	5104.1	3827.6	2500.1			
WM	345.9	436.0	397.2	361.4	862.6	871.8	427.5	113.1	-			
POM	4171.8	4174.1	4039.2	3947.1	3811.0	4561.3	7297.3	4484.4	2881.7			
	Sold production of industry (current prices) in mln zl											
KP	52450.0											
WM	28 616.9											
POM	76715.3											
	Entities of the national economy (including)					**trading companies**			**with foreign capital share**			
KP	193470					15485			1832			
WM	123 876					8 133			1 044			
POM	281861					30281			4734			

The highest values referring to changes in the structure of employment in the Kujawsko-Pomorskie, Warmińsko-Mazurskie and Pomorskie Voivodeships can be observed

respectively in the section of transportation and storage (9.1%) and information and communication (35.4% and 4.7%). The structure of remuneration recorded the smallest increases in information and communication (1.1%) and industry (3.5% and 3.1%) respectively for the subsequent voivodeships. Increase added values are indicated by sold production of chemicals and chemical products (18% - KP), paper and paper products (18.3% - WM) and 25% in manufacture of wearing apparel of the Pomorskie Voivodeship. Entities of the national economy, as in the case of the previously discussed regions, indicate slight upward trends.

3. THE ANALYSIS OF THE POTENTIAL OF INDUSTRIAL SPECIALIZATION

Deteremining the specialization of the region requires the knowledge of the development potential of industries in the surveyed area. The paper makes uses of the resources which clusters have in order to determine the same industry. The characterization of clusters in Poland requires referring to a few sources of information (www.mapaklastrów.pl; Polish Agency for Enterprise Development (PARP): standards for cluster management and the Report on cluster inventory) since the data (fro 2015) in the field of clusters do not always correspond with each other, as shown in Tables (7-12). The classification of the regions is unified, presenting the voivodeships of the country by the division of Poland into central, southern, eastern, north-western, south-western and north.

Table 7. The characteristics of the industrial specialization of CENTRAL Poland.

www.mapaklastrow.pl		PARP by standards of cluster management	PARP by Report on cluster inventory		
Number of cluster members	Cluster name	Cluster name	Number of clusters	Number of entities / estimated number of employees in cluster entities	Economic specializations of clusters
ŁÓDZKIE VOIVODESHIP					
10	Bioenergia dla Regionu		3	120 / 18 425	– production technologies – energy, heating, OZE – ICT
84	Klaster Innowacyjnych Nawierzchni Sportowych i Rekreacyjnych VERDE				
MAZOWIECKIE VOIVODESHIP					
23	Klaster innowacji w agrobiznesie		13	608 / 21 527	– energy, heating, OZE – construction, architecture – ICT – biotechnologies – geodesy – photonics,
23	Polski Klaster Edukacyjny				
56	Mazowiecki Klaster BioTechMed				

					optoelectronics – chemicals, fertilizers, plastics – pharmacy, cosmetics – business services, education

The region of central Poland, in the perspective of a leading specialization, can be defined as the region of the high level of use of computerization and energy industry. The number of clusters in the case of the Łódzkie Voivodeship indicates the domination of the energy and manufacturing industries in the field of technologies while associating about 100 entities. The Mazowieckie Voivodeship, taking into account the above data, should be identified with the business and educational service industries and biotechnologies.

Table 8. The characteristics of the industrial specialization of SOUTHERN Poland.

www.mapaklastrow.pl		PARP by standards of cluster management	PARP by Report on cluster inventory		
Number of cluster members	Cluster name	Cluster name	Number of clusters	Number of entities / estimated number of employees in cluster entities	Economic specializations of clusters
MAŁOPOLSKIE VOIVODESHIP					
14	Małopolski Klaster Turystyczny Beskid		10	354 / 94 270	– medicine, biomedicine, medical tourism – metal industry – construction and architecture – biotechnologies – creative industries – printing and publishing – business services, education – tourism, entertainment, leisure, culture
16	Klaster Innowacyjne Odlewnictwo				
76	Klaster LifeScience Kraków				
79	Klaster Zrównoważona Infrastruktura				
33	Małopolski Klaster Poligraficzny				
44	South Poland Cleantech Cluster Sp. z o.o.				

ŚLĄSKIE VOIVODESHIP					
55	Śląski Klaster Lotniczy		28	1190 / 39 623	– medicine, biomedicine, medical tourism – metal industry – production technologies – energy, heating, OZE – construction and architecture – ICT – municipal economy, waste economy – environmental protection – creative industries – nanotechnologies – mechanical and electromechanical industry – rescue, civil protection, State security – civil protection, State security – transport and logistics – aviation – wood industry – tourism, entertainment, leisure, culture
61	Klaster Technologii Human Cloud				
80	Śląski Klaster Wodny				
58	Klaster Kolejowy (Południowy Klaster Kolejowy)				
68	MedSilesia-Śląska Sieć Wyrobów Medycznych				
64	Silesia Automotive & Advanced Manufacturing				
46	Śląski Klaster ICT				
61	Klaster E-Południe				
20	Utworzenie Centrum Pomiarowo-Rozliczeniowego dla Niektórych Sektorów Infrastrukturalnych Oraz Działalności Prosumenckiej				
86	Polski Innowacyjny Klaster Medyczny PIKMED				
20	Klaster Maszyn Górniczych				

The leading specializations of the southern region may, among others, include the medical, metal, tourism industries as well as construction and the industry dealing with modern, post-industrial, innovative economy.

The listed clusters in the Małopolskie Voivodeship mostly associate the entities dealing with biotechnology and construction. In turn, the Śląskie Voivodeships engages the entities associated with the medical, biomedical industry as well as information and communication technologies.

Table 9. The characteristics of the industrial specialization of EASTERN Poland.

www.mapaklastrow.pl		PARP by standards of cluster management	PARP by Report on cluster inventory		
Number of cluster members	Cluster name	Cluster name	Number of clusters	Number of entities / estimated number of employees in cluster entities	Economic specializations of clusters
PODKARPACKIE VOIVODESHIP					
22	Klaster Fotoniki i Światłowodów	Klaster Firm Informatycznych Polski Wschodniej	12	488 / 40 813	– metal industry – energy, heating, OZE – ICT – environmental protection – food industry – photonics, optoelectronics – aviation – chemicals, fertilizers, plastics – tourism, entertainment, leisure, culture
94	Klaster Dolina Lotnicza				
17	Wschodni Sojusz Motoryzacyjny				
24	Klaster Spawalniczy KLASTAL				
PODLASKIE VOIVODESHIP					
56	Ogólnopolskie Centrum Badania, Edukacji i Monitorowania Problemów Płodności	Klaster Instytucji Otoczenia Biznesu	8	272 / 21 724	– medicine, biomedicine, medical tourism – metal industry – energy, heating, OZE – construction and architecture – clothing industry – business services, education – tourism, entertainment, leisure, culture
33	Klaster Marek Turystycznych Polski Wschodniej				
77	Klaster Obróbki Metali	Podlaski Klaster Bielizny			
150	Wschodni Klaster Budowlany				
ŚWIĘTOKRZYSKIE VOIVODESHIP					
77	Świętokrzysko-Podkarpacki Klaster Budowlany INNOWATOR		4	190 / 12 743	– medicine , biomedicine, medical tourism, – energy, heating, OZE – construction and architecture – business services, education
80	Klaster Gospodarki				

	Odpadowej i Recyklingu				
58	Świętokrzysko - Podkarpacki Klaster Energetyczny				
LUBELSKIE VOIVODESHIP					
45	Lubelski Klaster Ekoenergetyczny	-	11	443 / 28 217	– medicine, biomedicine, medical tourism – metal industry – food industry – energy, heating, OZE – ICT – environmental protection – business services, education
86	Lubelska Medycyna- Klaster Usług Medycznych i Prozdrowotnych				
15	Lubelski Klaster Przedsiębiorstw				
20	Lubelski Klaster Instytucji Otoczenia Biznesu				
106	Wschodni Klaster ICT				

The Podkarpackie Voivodeship, in the cluster perspective, can be identified with the aerospace industry, the Podlaskie and Świętokrzyskie Voivodeships with the building industry and, additionally, with the metal and energy industries. In turn, medicine and ICT refers to the most numerous group of entities in the Lubelskie Voivodeship. The whole region provides the development potential in the field of the energy, medical, metal industries as well as business services and education.

Table 10. The characteristics of the industrial specialization of NORTH_WESTERN Poland.

www.mapaklastrow.pl		PARP by standards of cluster management	PARP by Report on cluster inventory		
Number of cluster members	Cluster name	Cluster name	Number of clusters	Number of entities / estimated number of employees in cluster entities	Economic specializations o f clusters
WIELKOPOLSKIE VOIVODESHIP					
39	Klaster Przetwórstwa Szkła Budowlanego	Swarzędzki Klaster Producentów Mebli	12	499 / 12 075	– energy, heating, OZE – construction and architecture

39	Polski Klaster Innowacyjnych Technologii Kuźniczych HEFAJSTOS	Klaster Poligraficzno-Reklamowy w Lesznie			– ICT – municipal economy, waste economy – printing and publishing – furniture industry – food industry – aviation
74	Wielkopolski Klaster Teleinformatyczny				
46	Klaster Spożywczy Południowej Wielkopolski				
ZACHODNIOPOMORSKIE VOIVODESHIP					
97	Zachodniopomorski Klaster Morski	Klaster Budowlany	6	359 / 19 896	– medicine, biomedicine, medical tourism – metal industry – construction and architecture – creative industries – chemicals, fertilizers, plastics – maritime economy
84	Klaster ICT Pomorze Zachodnie	Klaster Przemysłów Kreatywnych			
31	Klaster Morski Pomorza Zachodniego				
71	Zachodniopomorski Klaster Chemiczny Zielona Chemia				
LUBUSKIE VOIVODESHIP					
37	Lubuski Klaster Metalowy		4	82 / 4 353	– metal industry – ICT – tourism, entertainment, leisure, culture

The metal industry, information and communication technologies as well as construction constitute the main specializations of the region of north-western Poland. ICT entities constitute a large group of cluster members both in the Wielkopolskie and Zachodniopomorskie Voivodeships. Additionally, the leading sectors are also respectively for the voivodeships the furniture and maritime industries. In turn, the Lubuskie Voivodeship specializes only in the metal industry.

Table 11. The characteristics of the industrial specialization of SOUTH-WESTERN Poland.

www.mapaklastrów.pl		PARP by standards of cluster management	PARP by Report on cluster inventory		
Number of cluster members	Cluster name	Cluster name	Number of clusters	Number of entities / estimated number of employees in cluster entities	Economic specializations of clusters

DOLNOŚLĄSKIE VOIVODESHIP					
78	NUTRIBIOMED Klaster		11	554 / 25 787	– medicine, biomedicine, medical tourism – metal industry – production technologies – energy, heating, OZE – construction and architecture – ICT – environmental protection – raw material industry
109	Klaster Badań i Rozwoju oraz Innowacji	Innowacyjna Medycyna			
OPOLSKIE VOIVODESHIP					
20	Klaster Chemii Specjalistycznej Chem-Ster		1	20 / 3 031	– chemicals, fertilizers, plastics,

The region of south-western Poland should be identified with the specialization in the field of the medical and chemical industries. Both voivodeships possess corresponding development potentials in terms of the industry, both in relation to the involved entities and the economic specialization.

Table 12. The characteristics of the industrial specialization of NORTHERN Poland.

www.mapaklastrow.pl		PARP by standards of cluster management	PARP by Report on cluster inventory		
Number of cluster members	Cluster name	Cluster name	Number of clusters	Number of entities / estimated number of employees in cluster entities	Economic specializations of clusters
KUJAWSKO-POMORSKIE VOIVODESHIP					
23	Bydgoski Klaster Informatyczny		4	125 / 17 969	– medicine, biomedicine, medical tourism – production technologies – ICT – food industry
32	Agro Klaster Kujawy-Stowarzyszenia na Rzecz Innowacji i Rozwoju				
68	Bydgoski Klaster Przemysłowy				
WARMIŃSKO-MAZURSKIE VOIVODESHIP					
-	-	Elbląski Klaster Turystyczny	2	137 / 34	– tourism, entertainment, leisure, culture

POMORSKIE VOIVODESHIP					
25	Pomorska Dolina Medyczna	Bałtycki Klaster Ekonergetyczny	5	427 / 30 736	– medicine, biomedicine, medical tourism – energy, heating, OZE – ICT – transport and logistics
138	INTERIZON – Pomorski Klaster ICT				
52	Klaster Logistyczno-Transportowy Północ-Południe				

ICT is a strong industry characterizing the region associating the entities from the Kujawsko-Pomorskie, Warmińsko-Mazurskie and Pomorskie Voivodeships. At the same time, the subsequent regions possess strong background of cluster members in the field of the manufacturing industry, transportation and logistics.

4. CONCLUSIONS

While analyzing the presented data, one may make an attempt to determine the economic direction of individual regions of the country. The position of central Poland, due to its striking specialization in the field of computerization is confirmed by the economic growth in the field of an increase in remuneration and employment, which may translate into the number of entities participating in the cluster. The southern part of Poland, specializing in construction and the metal industry may indicate increasing indices of sold production, whereas an increase in remuneration did not bring about an increase in employment in the building sector. Such a situation may take place in the case of an increase in production orders due to the actions taken (e.g. by acquiring new foreign customers) in clusters. The eastern region, in terms of the energy market, indicated a decrease while referring to the indices of sold production. The same criterion illustrates high growth in the case of the medical industry. In business and educational services there is a noticeable improvement in employment and remuneration. In turn, manufacture of metals in all four voivodeships is characterized by high indices of sold production. Therefore, it can be acknowledged that, from the point of view of both discussed categories, the metal industry can be recognized as developmental for the region. The north-western part of the country belongs to the sector specializing in ICT in terms of overwhelming positive economic factors. Both remuneration and employment along with sold production indicate positive values in terms of indices. Both the metal and building industries recorded slight increases of sold production whereas construction did not increase employment in spite of increased remuneration. The south-western region specializes in the medical and chemical industries, however, the first one recorded very large increases in the case of sold production. The production of chemicals in both voivodeships decreased by about 8% of sold production compared to the previous year. The last of the regions specializing in information and communication technologies records increasing indices in employment and remuneration. At the same time, with reference to sold production, it indicated slight decreases.

Creating the national network of industries, which may constitute the potential economic specializations of the regions, requires further studies. The author used clusters as one of many sources of industrial information and their specification is the basis determining

the direction of actions supporting the selected industry. It is important in the case of clusters to specify clear and unambiguous criteria for cluster classification. The sources referred to did not correspond with each other and sometimes even excluded each other. The economic potential resulting from the activity of entities in the cluster provides an opportunity for the local economic development and, at the same time, gives a clear signal to the local authorities which direction the regional strategy should follow. Building the national economy from the inside, therefore, from the cooperation of small enterprises with the large ones in the framework of the industry, is a way for a slow but accurate method of cognition of the industrial potential. The information supported with the quantitative and qualitative analysis provides the opportunity for efficient management of the economy in each of its dimensions, which may lead only to a favorable economic situation of the specific region.

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