# ATTRACTIVENESS OF THE SILESIAN VOIVODESHIP FOR THE OFFSHORING INVESTMENTS OF THE BSS SECTOR

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**Abstract:** *The purpose of the article is the assessment of attractiveness of the Silesian voivodeship for the foreign investments made in the business service sector with application of offshoring. For the analysis and assessment of the attractiveness of the Silesian region factors were grouped into slightly broader categories: human resources and market, transport and infrastructure and security and environment. The data from Polish research institution (Instytut Badań nad Gospodarką Rynkową) from 2006 to 2016 were collected. The notes were obtained with the application of the pseudo-one-feature classification procedure. All factors have been analysed and described and the Silesian voivodeship have been compared to the others voivodeships. Taking into account all factors discussed, the leader of the investment attractiveness is the Silesian one. Despite low level of common security, very strong advantages of the voivodeship are high availability of working resources, relatively low labor costs, abundant labor market and well developed economic and social infrastructure.*

**Key words:** *investment attractiveness, foreign investments, business services sector, offshoring*
**JEL codes:** *J00, L84, O52*

## 1. Introduction

The growing use of offshoring is becoming the dominant business practice in global economy (Budzyńska, 2016). Offshoring is the special category of foreign direct investments and can be defined conventionally as the geographical separation of production activities across two or more countries (Wolszczak-Derlacz, Parteka, 2018). However offshoring was used in production sector at the beginning, nowadays it concerns more on service sector as the transnational relocation or dispertion of service activities (Pisani, Ricart, 2016). The phenomenon of offshoring of services can be noticed especially in business services sector which development is highly dominated by this process.

Countries and regions, as locations of economic activity, compete with each other for investment through the ability to attract international capital flows (Jantoń-Drozdowska, Majewska, 2016). The essence of the investment attractiveness of the voivodeship or a given region is the ability to encourage for the investment, understood as a combination of factors of location (benefits) possible to be achieved during conducting business activity and those resulting from the specific features of the area in which the activity takes place. These areas which offer optimum connection of the location factors create best conditions for the functioning of the enterprises, with which they attract investors (Instytut Badań nad Gospodarką Rynkową, 2014).

The purpose of the article is the assessment of attractiveness of the Silesian voivodeship for the foreign investments made in the business services sector for the business with application of offshoring.

## 2. Methodology and Data

In the assessment of the investment attractiveness of particular voivodeships, one may distinguish the following factors which affect directly a level of attractiveness of a given region (factors were placed in the order from the most significant to the least important
Instytut Badań…, 2014):

- resources and labor costs,
- activity of the voivodeships towards the investors,
- transport accessibility,
- market absorption,
- economic infrastructure,
- social infrastructure,
- common security.

For the analysis and assessment of the attractiveness of the Silesian region these factors were grouped into slightly broader categories: human resources and market, transport and infrastructure and security and environment. The notes presented in tables 1 and 5-10 were obtained with the application of the pseudo-one-feature classification procedure. This is a research method used for the assessment of the attractiveness of the voivodeships and sub-regions, used since 2006 by the Institute of Research over Market Economy. The assessment of investment attractiveness was based on quantitative data from the public statistic system. Research is comprehensive as it applies to whole studied population (all the voivodeships). The method of the pseudo-one-feature classification was carried out in two stages. First synthetic partial indicators for individual factors of investment attractiveness were constructed. Then their weights were determined as per follow: 25% - resources and labor costs, 20% - activity of the voivodeships towards the investors and 5% - social infrastcuture and common security. All factors were analysed and for each of them the ranking of all voivodeships was prepared (from 1 to 16) and then value from -2 to +2 was given for each. The result and the final range of investment attractiveness of voivodeship is the resultant value of partial indices for individual voivodeships.

## 3. Assessment of factors affecting the attractiveness of the Silesian voivodeship for the offshoring investments in the BSS sector

### 3.1. Human capital and the market

From among the factors which decide about the investment attractiveness, a significant role is laced by resources and labor costs. A proper amount of labor resources decides about effective functioning of an enterprise, in turn the labor costs shape its profitability.

With reference to the available resources and labor costs (tab. 1) in the last decade, the most attractive region was the Silesian voivodeship. It was followed by the Małopolskie Region but which much lower rating. The largest advantage of both voivodeships is a high number of employees and job seekers. Also a large number of higher schools in both regions listed attract students from the whole country, contributing at the same time to creating highly qualified staff of these two regions.

**Tab. 1** Investment attractiveness of the voivodeships with reference to resources and labor costs in Poland between 2006-2016

| | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Silesian | 1,62 | 1,42 | 1,45 | 1,41 | 1,38 | 1,38 | 1,33 | 1,40 | 1,33 | 1,38 | 1,37 |
| Małopolskie | 0,52 | 0,5 | 0,47 | 0,47 | 0,53 | 0,62 | 0,59 | 0,60 | 0,58 | 0,59 | 0,55 |
| Wielkopolskie | 0,1 | 0,13 | 0,12 | 0,13 | 0,16 | 0,13 | 0,19 | 0,17 | 0,20 | 0,21 | 0,21 |
| Łódzkie | 0,25 | 0,25 | 0,21 | 0,22 | 0,06 | 0,10 | 0,12 | 0,05 | 0,07 | 0,08 | 0,07 |
| Lower Silesian | 0,11 | 0,00 | -0,03 | 0,04 | 0,03 | 0,03 | 0,09 | 0,07 | 0,05 | 0,01 | 0,04 |
| Kujawsko-Pomorskie | -0,03 | 0,00 | 0,02 | 0,04 | -0,01 | 0,00 | 0,01 | 0,04 | -0,03 | -0,09 | -0,02 |
| Podkarpackie | -0,18 | -0,14 | -0,01 | -0,02 | -0,01 | -0,03 | -0,07 | -0,04 | -0,07 | -0,04 | -0,02 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pomorskie | -0,07 | -0,18 | -0,17 | -0,19 | -0,17 | -0,03 | -0,07 | -0,10 | -0,13 | -0,12 | -0,08 |
| Świętokrzyskie | -0,18 | -0,11 | -0,11 | -0,1 | -0,11 | -0,17 | -0,18 | -0,12 | -0,10 | -0,09 | -0,14 |
| Mazowieckie | -0,26 | -0,17 | -0,26 | -0,26 | -0,28 | -0,32 | -0,24 | -0,25 | -0,22 | -0,19 | -0,15 |
| Lubuskie | -0,2 | -0,18 | -0,12 | -0,2 | -0,19 | -0,14 | -0,28 | -0,24 | -0,18 | -0,23 | -0,19 |
| West Pomeranian | -0,15 | -0,12 | -0,14 | -0,17 | -0,09 | -0,11 | -0,15 | -0,17 | -0,20 | -0,19 | -0,25 |
| Opolskie | -0,27 | -0,31 | -0,31 | -0,27 | -0,23 | -0,28 | -0,22 | -0,19 | -0,21 | -0,20 | -0,27 |
| Warmińsko-Mazurskie | -0,43 | -0,32 | -0,35 | -0,29 | -0,28 | -0,30 | -0,30 | -0,31 | -0,32 | -0,31 | -0,31 |
| Lubelskie | -0,4 | -0,32 | -0,31 | -0,34 | -0,33 | -0,38 | -0,39 | -0,39 | -0,35 | -0,36 | -0,35 |
| Podlaskie | -0,46 | -0,44 | -0,45 | -0,47 | -0,46 | -0,51 | -0,45 | -0,52 | -0,44 | -0,44 | -0,46 |

*Source: own study on the basis of the reports of Investment attractiveness of the regions and sub-regions of Poland, , Instytut Badań nad Gospodarką Rynkową years 2006-2016.*

The Silesian voivodeship is characterised by the highest labor resources, however with slightly lower labor costs, in comparison with the Małopolskie region, in which the labor resources are lower the same as labor costs.

### 3.1.1. Demographic potential

In table 2 the structure of population was presented in the Silesian voivodeship between 2004-2016. A number of population in the Silesian region successively drops. At the end of 2016 a number of population amounted to 4 559 thousand persons which means that it was by 110 thousand lower in comparison to 2006 and by 12 thousand lower than 2015. In 2016 in comparison with the year 2006 there was a drop of population in pre-productive age by 91 thousand with a simultaneous increase of a percent of population in post-productive age by 221 thousand. It means that in 2004 population in pre-productive age constituted about 18% of total population and the population in post-productive age – 16%. In 2016 this share was respectively: 17% of population are the persons in the pre-productive age and 21% are the persons in post-productive age. In Silesian voivodeship, a further, systematic drop of a number of population is till 2050 and progressive, unfavorable changes in the population structure. GUS forecasts that a number of the population will reduce to 4107,9 thousands till 2035 and to 3680,6 thousands till 2050 (www 1). The changes taking place in the number and structure of population are not favorable from the point of view of foreign investments in the sector of the modern services for business, in which young persons are employed, first of all. In accordance with the ABSL data, an average age of the employees of the BSS sector is 31 years for Poland, and 32 years for Katowicka Agglomeration.

**Tab. 2** Population of the Silesian voivodeship between 2006-2016

| Specification | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Increase/decrease 2016/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Number of population** | 4 669 137 | 4 654 115 | 4 645 665 | 4 640 725 | 4 634 935 | 4 626 357 | 4 615 870 | 4 599 447 | 4 585 924 | 4 570 849 | 4 559 164 | -2,36% |
| **Pre-productive age** | 858 774 | 835 711 | 819 083 | 806 093 | 799 933 | 790 680 | 782 781 | 776 393 | 771 201 | 767 533 | 767 290 | -10,65 % |
| **Productive age** | 3 058 286 | 3 051 575 | 3 043 430 | 3 034 503 | 3 021 163 | 2 998 142 | 2 970 023 | 2 934 496 | 2 898 050 | 2 858 648 | 2 818 424 | -7,84% |
| **Post-productive age** | 752 077 | 766 829 | 783 152 | 800 129 | 813 839 | 837 535 | 863 066 | 888 558 | 916 673 | 944 668 | 973 450 | 29,43 % |

*Source: own study on the basis of (www 2).*

Between 2006-2016 in the Silesian voivodeship, the birth depression took place, namely the repleacability of generations was not assured – the number of deaths was higher than that of births, namely there was a negative population growth (tab. 3). The exception was the year 2010, when the population growth although close to 0, was positive.

**Tab. 3** Population growth per 1000 people and child rate in Silesian voivodeship between 2006-2016

| Specification | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Number of births** | 9,08 | 9,41 | 10,11 | 10,30 | 10,31 | 9,68 | 9,64 | 9,30 | 9,30 | 9,09 | 9,36 |
| **Number of deaths** | 9,91 | 10,24 | 10,32 | 10,46 | 10,29 | 10,30 | 10,61 | 10,67 | 10,41 | 11,01 | 10,73 |
| **Population growth** | -0,83 | -0,83 | -0,22 | -0,15 | 0,02 | -0,63 | -0,97 | -1,37 | -1,11 | -1,92 | -1,36 |
| **Child rate** | 1,173 | 1,211 | 1,298 | 1,326 | 1,341 | 1,265 | 1,274 | 1,247 | 1,264 | 1,258 | 1,323 |

*Source: own study on the basis of (www 2).*

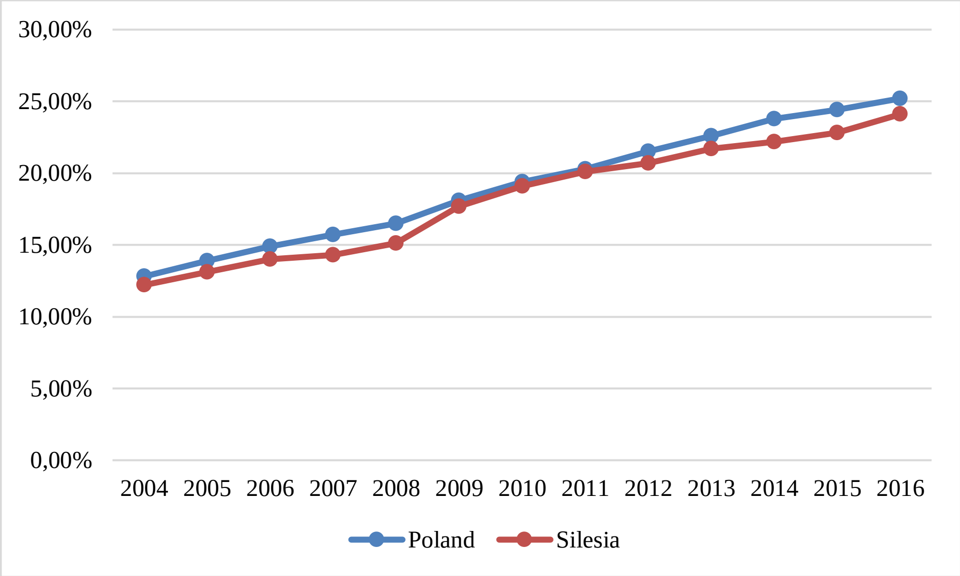
However, a number of child rate increases slowly – in 2016 it amounted to 1,323 which means that per 100 women aged 15-49 there were 132 children born. It was the highest since 2011. Despite that GUS forecasts further maintenance of the population growth. The forecast drop of a number of births in the whole period covered with the prognosis (up to 2050) causes a significant deterioration of a proportion between the youngest and oldest generations of people.

### 3.1.2. Educational potential

The size of the educational potential of a given location informs the investors on the ability to obtain a demanded number of the qualified employees in an assumed period of time.

On the figure 1, the percent of the population of the Silesian voivodeship with higher education was presented. A share of the persons with higher education in Silesian voivodeshop increased significantly in the analysed period and in 2016 it amounted to 24,1%.

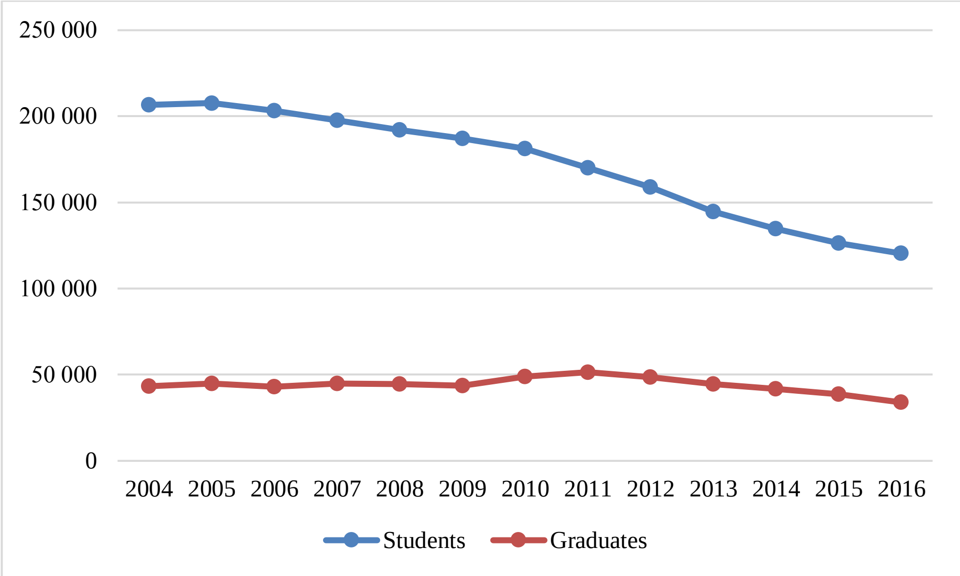
**Fig. 1** Percent of population of the Silesian voivodeship and Poland aged 15-64 years with a higher education between 2006-2016




*Source: own study on the basis of (www 2).*

The percent of a number of population possessing higher education is insignificantly lower than in case of an average for the whole country (which is 25,2%), however in the examined period a clear increase tendency was maintained therefore it may be assumed that a participation of persons with higher education will be systematically increasing in the future.

**Fig. 2** A number of students and graduates in the Silesian voivodeship between 2006-2016




*Source: own study on the basis of (www 2).*

On the figure 2 a number of students and graduates was presented of the Silesian voivodeship between 2006-2016. A number of students and graduates are the values extremely important for the investors of the sector of modern services for business, as the centers of services most often look for young people, graduates just after the studies, or very often – still students. The research shows that as many as 92% of employees of the centers of services of Katowicka Agglomeration has higher education (ABSL, 2017a). This ratio is almost the same for the whole country and amounts to 93% (ABSL, 2017b). In the Silesian voivodeship, a similar tendency is maintained as in case of the whole country – a drop takes place of a number of students and graduates. Both values however maintain in a high level– in 2016 in the Silesian voivodeship there were over 120 thousands of persons studying and the studies were completed by 34 thousands of graduates. It proves a high educational potential of the Silesian voivodeship and quite large accessibility of the resources of the qualified workforce. The reduction of a number of students and graduates results from the fact of unfavorable demographic changes – reducing the number of people in production age for the elderly persons. The scolarisation ratio net (relations of a number of persons studying – status as of the beginning of the school year – on a given level of education in a given age group to the number of population – status as of 31 XII – in the group age defined as the one corresponding to the level of education) in the 19-21 age group amounted in 2016 to 6,57% in the Silesian voivodeship and was higher than the ratio for whole country– 5,9%.

In the Silesian voivodeship there are many academic centers, especially in cities. In 2016 there were 24 higher schools. Above half of them are located in Katowicka Agglomeration. The largest higher schools (both located in Katowice) are University of Silesia and University of Economics.

### 3.1.3. Level of remunerations

Another factor which strongly affects the attractiveness of the voivodeships for foreign investors is the level of remunerations. It is quote high in Silesian voivodeship in comparison with other voivodeships –this is the third most expensive voivodeship in the country, preceded only by the mazowieckie and dolnośląskie once (tab. 4).

**Tab. 4** Average month remuneration in PLN gross with a division into voivodeships between 2006-2016 (in PLN)

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| mazowieckie | 3381,13 | 3670,84 | 4036,26 | 4179,63 | 4279,55 | 4504,66 | 4637,58 | 4773,41 | 4927,34 | 5094,46 | 5240,86 |
| dolnośląskie | 2617,16 | 2860,66 | 3135,83 | 3295,44 | 3412,37 | 3587,25 | 3709,32 | 3868,86 | 4042,86 | 4204,24 | 4385,84 |
| **Silesian** | **2729,63** | **2933,32** | **3239,09** | **3405,18** | **3528,19** | **3794,62** | **3855,26** | **4022,80** | **4100,51** | **4221,45** | **4295,29** |
| pomorskie | 2650,20 | 2882,56 | 3167,70 | 3320,06 | 3383,58 | 3567,49 | 3696,89 | 3847,12 | 4011,59 | 4132,13 | 4274,73 |
| małopolskie | 2443,91 | 2666,24 | 2903,63 | 3057,71 | 3169,90 | 3332,98 | 3456,16 | 3574,22 | 3700,06 | 3906,96 | 4077,91 |
| zachodnio-pomorskie | 2406,98 | 2615,83 | 2881,00 | 3021,51 | 3120,15 | 3289,56 | 3417,76 | 3539,12 | 3649,27 | 3793,68 | 3946,28 |
| Opolskie | 2367,74 | 2607,45 | 2873,22 | 2987,87 | 3137,29 | 3249,58 | 3358,42 | 3473,40 | 3632,84 | 3793,28 | 3927,04 |
| Łódzkie | 2287,90 | 2470,86 | 2740,58 | 2884,60 | 3066,02 | 3245,97 | 3383,30 | 3510,20 | 3618,63 | 3790,76 | 3925,10 |
| Wielkopolskie | 2389,00 | 2610,82 | 2868,81 | 2976,28 | 3126,36 | 3284,41 | 3397,25 | 3515,31 | 3597,69 | 3728,52 | 3894,10 |
| Lubelskie | 2290,60 | 2486,22 | 2771,99 | 2891,30 | 3099,60 | 3257,14 | 3382,66 | 3488,61 | 3605,03 | 3699,48 | 3815,95 |
| Podlaskie | 2307,59 | 2524,95 | 2781,21 | 2884,68 | 3019,83 | 3178,15 | 3310,71 | 3432,71 | 3530,17 | 3647,08 | 3767,20 |
| Lubuskie | 2235,01 | 2429,97 | 2653,55 | 2802,77 | 2920,43 | 3073,95 | 3203,18 | 3282,07 | 3425,38 | 3567,60 | 3734,90 |
| kujawsko-pomorskie | 2268,87 | 2443,17 | 2691,69 | 2810,97 | 2910,82 | 3062,32 | 3182,31 | 3322,09 | 3439,06 | 3540,25 | 3672,98 |
| Świętokrzyskie | 2263,60 | 2467,07 | 2745,39 | 2868,09 | 2971,58 | 3137,91 | 3250,94 | 3349,81 | 3435,93 | 3580,62 | 3669,57 |
| Podkarpackie | 2179,57 | 2372,82 | 2614,12 | 2740,89 | 2877,43 | 3023,21 | 3152,36 | 3282,69 | 3412,30 | 3527,62 | 3653,67 |
| warmińsko-mazurskie | 2218,32 | 2398,00 | 2615,33 | 2752,41 | 2879,97 | 3019,37 | 3150,27 | 3264,63 | 3386,96 | 3495,02 | 3619,16 |

*Source: own study on the basis of (www 2).*

In the analysed period we observe quite a dynamic growth of remunerations. In 2016, an average month remuneration gross was the highest in the examined period and amounted to 4295.29 PLN gross which means that it increased by 57% in comparison with 2006. However, average month remuneration gross in 2016 in the Silesian voivodeship was barely higher in comparison with the average month remuneration gross national economy and in turn by as many as 20% lower than in mazowieckie province and only by 18% higher than in the warmińsko-mazurskie voivodeship where the remunerations were the lowest. It means that with reference to the remunerations, the Silesian voivodeship still remains competitive in relations to other regions and attractive for the foreign investors

### 3.1.4. Activity towards investors and absorptiveness of the market

The activity of the investors is based, to a large extent, on the degree of preparing the investment offers and their investment attractiveness, as well as information-promotional activity. Clearly the highest activity towards investors (tab. 5) was showed by the Lower Silesia voivodeship in the period analysed, mainly due to the broadest offer of the investment areas also due to a high information-promotional activity with the use of the Faculties of Promotion of Trade and Investment (WPHiI) of Polish embassies. The Silesian Voivodeship also was found it a group of voivodeships which were assessed high as far as the activity towards the investors is concerned, mainly due to high availability of the investment areas.

**Tab. 5** Investment attractiveness of voivodeships with reference of activity towards investors in Poland between 2006-2016

| | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dolnośląskie | 1,92 | 2,09 | 1,29 | 1,99 | 1,53 | 1,37 | 0,84 | 1,1 | 1,05 | 1,04 | 1,37 |
| Śląskie | 0,07 | 0,24 | 0,02 | 0,23 | 0,08 | 0,43 | 0,54 | 0,32 | 0,31 | 0,38 | 0,79 |
| Zachodniopomorskie | 0 | 0,23 | 0,24 | 0,42 | 1,4 | 1,04 | 0,97 | 0,91 | 0,61 | 0,83 | 0,76 |
| Pomorskie | 0,14 | 0,21 | 0,42 | 0,2 | -0,02 | 0,62 | 0,54 | 1,02 | 0,74 | 0,74 | 0,74 |
| Mazowieckie | 1,78 | 1,3 | 1,2 | 1,32 | 0,9 | 1,31 | 1,05 | 0,42 | 0,81 | 0,56 | 0,6 |
| Wielkopolskie | 0,98 | 0,84 | 1,3 | 1,42 | 0,89 | 0,85 | 0,78 | 0,59 | 0,58 | 0,46 | 0,52 |
| Łódzkie | -0,26 | 0,26 | 0,33 | -0,21 | -0,14 | -0,21 | 0,29 | 0,16 | 0,24 | 0,45 | 0,28 |
| Małopolskie | -0,24 | -0,45 | -0,44 | -0,13 | 0,34 | 0,05 | -0,17 | -0,13 | 0,1 | 0,16 | -0,07 |
| Opolskie | -0,11 | 0,12 | -0,11 | -0,38 | -0,31 | -0,67 | -0,89 | -0,45 | -0,1 | 0,05 | -0,22 |
| Kujawsko-Pomorskie | -0,71 | -0,65 | -0,69 | -0,64 | -0,73 | -0,37 | -0,05 | -0,2 | -0,22 | -0,2 | -0,35 |
| Warmińsko-Mazurskie | 0,2 | -0,26 | -0,17 | -0,32 | -0,54 | -0,54 | -0,45 | -0,25 | -0,35 | -0,28 | -0,35 |
| Lubelskie | -0,95 | -0,9 | -1 | -0,88 | -0,59 | -0,73 | -0,21 | -0,51 | -0,8 | -0,83 | -0,68 |
| Podkarpackie | -0,8 | -0,57 | -0,45 | -0,56 | -0,63 | -0,74 | -0,67 | -0,57 | -0,49 | -0,62 | -0,69 |
| Lubuskie | -0,07 | -0,15 | 0,18 | -0,53 | -0,31 | -0,53 | -0,41 | -0,54 | -0,73 | -0,82 | -0,82 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Podlaskie | -0,91 | -1,23 | -1,08 | -0,77 | -0,73 | -1,01 | -1,03 | -0,99 | -0,84 | -0,9 | -0,85 |
| Świętokrzyskie | -1,04 | -1,08 | -1,06 | -1,18 | -1,13 | -0,87 | -1,15 | -0,88 | -0,91 | -1,01 | -1,01 |

*Source: own study on the basis of the reports Investment attractiveness of voivodeships and sub-regions of Poland, Instytut Badań nad Gospodarką Rynkową years 2006-2016.*

An additional factor affecting the attractiveness of the region and the market connected therewith is its absorptiveness which also directly affects the location decisions of foreign investors.

**Tab. 6** Investment attractiveness of the voivodeships due to size of the sale market in Poland between 2006-2016

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mazowieckie | 2,12 | 1,82 | 1,73 | 1,67 | 1,72 | 1,96 | 2,06 | 1,81 | 1,82 | 1,98 | 2,02 |
| Silesian | 1,57 | 1,57 | 1,31 | 1,35 | 1,34 | 1,32 | 1,2 | 1,35 | 1,42 | 1,34 | 1,38 |
| Lower Silesian | 0,51 | 0,47 | 0,44 | 0,62 | 0,5 | 0,45 | 0,4 | 0,4 | 0,28 | 0,26 | 0,59 |
| Małopolskie | 0,77 | 0,69 | 0,5 | 0,56 | 0,44 | 0,29 | 0,19 | 0,38 | 0,56 | 0,52 | 0,47 |
| Pomorskie | 0,78 | 0,56 | 1,05 | 0,8 | 0,67 | 0,86 | 0,85 | 0,77 | 1,07 | 0,78 | 0,43 |
| Lubuskie | -0,83 | -0,18 | -0,15 | -0,38 | 0,08 | -0,05 | -0,27 | -0,36 | -0,34 | -0,15 | 0,19 |
| Łódzkie | -0,03 | 0,04 | -0,04 | -0,11 | -0,19 | -0,25 | -0,26 | -0,11 | -0,05 | -0,11 | 0,09 |
| Zachodniopomorskie | 0,04 | -0,15 | -0,12 | 0,03 | 0,2 | -0,17 | -0,08 | -0,11 | -0,31 | -0,09 | -0,02 |
| Wielkopolskie | -0,16 | -0,04 | 0,02 | -0,1 | -0,05 | -0,07 | 0,03 | 0,1 | 0,14 | 0,08 | -0,04 |
| Opolskie | -0,31 | 0,03 | -0,13 | 0,06 | -0,15 | -0,25 | 0,06 | 0,2 | -0,37 | -0,54 | -0,47 |
| Kujawsko-Pomorskie | -0,56 | -0,8 | -0,19 | -0,38 | -0,19 | 0,02 | -0,28 | -0,6 | -0,53 | -0,38 | -0,51 |
| Podkarpackie | -0,77 | -0,67 | -1,04 | -1 | -1,01 | -0,74 | -0,73 | -0,72 | -0,67 | -0,62 | -0,58 |
| Lubelskie | -0,62 | -0,92 | -0,97 | -1,1 | -1,17 | -1,19 | -1,02 | -0,89 | -0,72 | -0,62 | -0,76 |
| Podlaskie | -0,52 | -0,43 | -0,36 | -0,53 | -0,51 | -0,79 | -0,41 | -0,5 | -0,69 | -0,74 | -0,83 |
| Warmińsko-Mazurskie | -0,83 | -0,68 | -0,78 | -0,65 | -0,49 | -0,56 | -0,72 | -0,89 | -1,02 | -0,86 | -0,90 |
| Świętokrzyskie | -1,14 | -1,3 | -1,26 | -1,25 | -1,17 | -0,83 | -1,02 | -0,83 | -0,58 | -0,86 | -1,05 |

*Source: Ibid.*

The sale market (tab. 6) is the largest in the mazowieckie, Silesian, Lower Silesian, małopolskie and pomorskie regions due to the richest households on average. Rich households are characterized by high purchase force and at the same time, high investment demand.

### 3.2. Transport and infrastructure

A very important factor deciding about the investment attractiveness of a given area is transport availability, the level of which is proved to a main extent by the geographic location and equipment with the components of the transport infrastructure. As far as the investment with service nature are concerned, the key role plays travelling time, conditioned by the quality of the railway, distance from the international airport, transport offer (railway and airplane) and, to a smaller extent, quality and network of roads.

**Tab. 7** Investment attractiveness of the voivodeships with reference to the transport availability in Poland between 2006-2016

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mazowieckie | 0,47 | 0,46 | 0,39 | 0,47 | 0,41 | 0,37 | 0,61 | 0,6 | 0,62 | 0,61 | 0,67 |
| Wielkopolskie | 0,56 | 0,57 | 0,51 | 0,52 | 0,43 | 0,41 | 0,6 | 0,59 | 0,56 | 0,55 | 0,56 |
| Zachodniopomorskie | 0,54 | 0,54 | 0,45 | 0,43 | 0,34 | 0,39 | 0,42 | 0,45 | 0,53 | 0,51 | 0,47 |
| Lubuskie | 0,54 | 0,53 | 0,53 | 0,49 | 0,37 | 0,37 | 0,43 | 0,44 | 0,45 | 0,46 | 0,46 |
| Lower Silesian | 0,54 | 0,61 | 0,49 | 0,45 | 0,43 | 0,43 | 0,4 | 0,4 | 0,36 | 0,41 | 0,44 |
| Łódzkie | 0,25 | 0,17 | 0,24 | 0,23 | 0,21 | 0,22 | 0,35 | 0,33 | 0,36 | 0,28 | 0,35 |
| Silesian | 0,47 | 0,39 | 0,46 | 0,37 | 0,38 | 0,46 | 0,37 | 0,35 | 0,34 | 0,32 | 0,22 |
| Kujawsko-Pomorskie | -0,01 | -0,01 | 0,04 | 0,08 | 0,03 | 0,01 | 0,12 | 0,1 | 0,12 | 0,14 | 0,15 |
| Opolskie | 0,31 | 0,29 | 0,3 | 0,27 | 0,25 | 0,23 | 0,12 | 0,12 | 0,12 | 0,11 | 0,13 |
| Małopolskie | 0,24 | 0,29 | 0,26 | 0,24 | 0,28 | 0,23 | 0,09 | 0,07 | 0,12 | 0,03 | 0,04 |
| Pomorskie | -0,13 | -0,04 | -0,21 | -0,15 | -0,1 | -0,08 | -0,22 | -0,23 | -0,27 | -0,26 | -0,22 |
| Świętokrzyskie | -0,33 | -0,34 | -0,34 | -0,26 | -0,23 | -0,22 | -0,33 | -0,36 | -0,34 | -0,29 | -0,23 |
| Lubelskie | -0,86 | -0,86 | -0,72 | -0,78 | -0,72 | -0,71 | -0,65 | -0,66 | -0,68 | -0,66 | -0,64 |
| Podkarpackie | -0,79 | -0,79 | -0,68 | -0,67 | -0,57 | -0,63 | -0,84 | -0,84 | -0,74 | -0,7 | -0,71 |
| Warmińsko-Mazurskie | -0,57 | -0,58 | -0,59 | -0,5 | -0,54 | -0,58 | -0,75 | -0,62 | -0,79 | -0,73 | -0,81 |
| Podlaskie | -1,23 | -1,23 | -1,11 | -1,18 | -0,96 | -0,9 | -0,72 | -0,73 | -0,77 | -0,79 | -0,88 |

*Source: Ibid.*

In accordance with the availability analysis of transport of particular voivodeships (tab. 7), Silesian voivodeship was placed in 2016 on the seventh place. Advantages of the Silesian region in this area is, first of all, intensiveness of passenger of plane transport above the average, a high level of development of the transport and Logistics sector and high density of road network. The defect may be a small possibility to use marine transport due to large distance to the Baltic Sea from the Silesian voivodeship.

The resources of the economic infrastructure thus broadly developed business-related services, allow for the investors to use the support of the external suppliers which significantly raises the effectiveness of the investment. In Poland, a key element of the economic infrastructure is also the existence of Special Economic Zones offering to new investors many benefits (first of all, tax reliefs). An important factor affecting the attractiveness of the voivodeships in this area is also the activity connected with organizing fair-exhibition events which allow to win new clients, maintain relations with current clients, introduce new products and services onto the market and create and strengthen the image of the company or increase the interest of the media.

**Tab. 8** Investment attractiveness of the voivodeships with reference to economic infrastructure between 2006-2016

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lower Silesian | 1,06 | 1 | 0,91 | 1,01 | 1,39 | 1,43 | 1,43 | 1,4 | 1,39 | 1,5 | 1,45 |
| Silesian | 1,23 | 0,91 | 1,41 | 1,45 | 1,15 | 1,19 | 1,1 | 1,02 | 1,02 | 0,93 | 0,79 |
| Mazowieckie | 0,68 | 0,62 | 0,72 | 0,69 | 0,71 | 0,71 | 0,75 | 0,57 | 0,6 | 0,55 | 0,56 |
| Małopolskie | 0,28 | 0,44 | 0,16 | 0,17 | 0,19 | 0,15 | 0,17 | 0,54 | 0,49 | 0,49 | 0,39 |
| Wielkopolskie | 0,11 | 0,03 | 0,24 | 0,35 | 0,18 | 0,21 | 0,11 | 0,21 | 0,21 | 0,31 | 0,15 |
| Opolskie | -0,18 | -0,03 | -0,01 | -0,15 | 0,28 | 0,33 | 0,31 | 0,32 | 0,24 | 0,15 | 0,08 |
| Łódzkie | -0,17 | -0,26 | -0,35 | 0,01 | -0,16 | -0,12 | -0,13 | -0,06 | -0,11 | -0,01 | -0,09 |
| Zachodniopomorskie | -0,38 | -0,39 | -0,36 | -0,34 | -0,3 | -0,33 | -0,13 | -0,08 | 0,06 | 0,06 | -0,11 |
| Podkarpackie | -0,31 | 0,09 | -0,08 | -0,26 | -0,28 | -0,32 | -0,3 | -0,34 | -0,37 | -0,22 | -0,18 |
| Pomorskie | 0,47 | 0,06 | 0,07 | -0,14 | -0,35 | -0,35 | -0,25 | -0,16 | -0,2 | -0,24 | -0,27 |
| Lubuskie | -0,26 | -0,24 | -0,32 | -0,21 | -0,45 | -0,4 | -0,43 | -0,37 | -0,39 | -0,38 | -0,30 |
| Lubelskie | -0,55 | -0,73 | -0,41 | -0,52 | -0,32 | -0,33 | -0,36 | -0,5 | -0,51 | -0,48 | -0,37 |
| Warmińsko-Mazurskie | -0,23 | -0,21 | -0,38 | -0,43 | -0,61 | -0,57 | -0,53 | -0,47 | -0,45 | -0,46 | -0,39 |
| Świętokrzyskie | -0,66 | -0,52 | -0,54 | -0,69 | -0,49 | -0,52 | -0,53 | -0,72 | -0,64 | -0,87 | -0,51 |
| Podlaskie | -0,72 | -0,41 | -0,54 | -0,41 | -0,47 | -0,5 | -0,59 | -0,78 | -0,77 | -0,75 | -0,55 |
| Kujawsko-Pomorskie | -0,38 | -0,34 | -0,51 | -0,51 | -0,48 | -0,58 | -0,64 | -0,59 | -0,57 | -0,58 | -0,64 |

*Source: Ibid.*

Economic infrastructure (tab. 8) is most developed in four voivodeships: małopolskie, mazowieckie, Silesian and Lower Silesian – the research-development sector is developed there above the average as well as there is large accessibility of free investment areas as well as Special Economic Zones. The Silesian province is placed in the category on the second place, behind the Lower Silesian province. One of the advantages of the Silesian province is in this area European Economic Congress on a cyclic basis organized in Katowice – the largest event in this part of Europe.

**Tab. 9** Investment attractiveness of voivodeships due to the level of the social infrastructural development in Poland between 2006-2016

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Silesian | 1,95 | 2,12 | 2,18 | 2,18 | 2,22 | 2,3 | 2,23 | 2,14 | 2,16 | 2,08 | 2,13 |
| Małopolskie | 2,06 | 1,94 | 1,81 | 1,74 | 1,78 | 1,74 | 1,89 | 1,91 | 1,8 | 2,13 | 1,99 |
| Lower Silesian | 1,05 | 0,88 | 0,79 | 0,93 | 0,96 | 0,82 | 0,73 | 0,82 | 0,82 | 0,84 | 0,84 |
| Mazowieckie | 0,43 | 0,4 | 0,33 | 0,32 | 0,27 | 0,38 | 0,47 | 0,41 | 0,5 | 0,39 | 0,38 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pomorskie | 0,22 | 0,25 | 0,22 | 0,1 | 0,13 | 0,08 | 0,07 | 0,13 | 0,1 | 0,1 | 0,20 |
| Zachodniopomorskie | -0,04 | 0,06 | -0,05 | 0,01 | -0,11 | -0,05 | -0,04 | -0,06 | -0,07 | -0,09 | -0,02 |
| Kujawsko-Pomorskie | -0,32 | -0,29 | -0,19 | -0,24 | -0,26 | -0,21 | -0,19 | -0,17 | -0,22 | -0,23 | -0,23 |
| Świętokrzyskie | -0,51 | -0,51 | -0,53 | -0,61 | -0,6 | -0,51 | -0,46 | -0,47 | -0,41 | -0,35 | -0,29 |
| Łódzkie | -0,14 | -0,18 | -0,19 | -0,24 | -0,18 | -0,19 | -0,16 | -0,07 | -0,09 | -0,33 | -0,36 |
| Podkarpackie | -0,67 | -0,68 | -0,56 | -0,62 | -0,58 | -0,61 | -0,54 | -0,51 | -0,49 | -0,46 | -0,45 |
| Wielkopolskie | -0,42 | -0,46 | -0,51 | -0,51 | -0,45 | -0,39 | -0,49 | -0,47 | -0,47 | -0,43 | -0,50 |
| Warmińsko-Mazurskie | -0,55 | -0,5 | -0,45 | -0,52 | -0,55 | -0,57 | -0,5 | -0,53 | -0,53 | -0,53 | -0,57 |
| Opolskie | -0,64 | -0,63 | -0,59 | -0,64 | -0,7 | -0,73 | -0,63 | -0,73 | -0,7 | -0,71 | -0,70 |
| Lubuskie | -0,74 | -0,74 | -0,7 | -0,25 | -0,23 | -0,32 | -0,71 | -0,65 | -0,67 | -0,69 | -0,72 |
| Podlaskie | -0,73 | -0,73 | -0,63 | -0,69 | -0,7 | -0,72 | -0,73 | -0,8 | -0,77 | -0,79 | -0,79 |
| Lubelskie | -0,94 | -0,93 | -0,93 | -0,98 | -1 | -1,03 | -0,94 | -0,94 | -0,97 | -0,92 | -0,91 |

*Source: Ibid.*

In an indirect manner, the investment attractiveness of the voivodeships is affected by the social infrastructure – it does not affect the costs of conducting activity in any way, but a high level of education, health protection, institutions of culture, entertainment or leisure having impact on the improvement of living conditions which is followed by – settlement attractiveness. The inflow of population in turn contributes to positive tendencies in the area of working resources, which is of special meaning for the investors conducting service and technically advanced activity. In the area of the social infrastructure (tab. 9.) the Silesian voivodeship occupies the first position (just before the małopolskie province) mainly due to a broad cultural offer (high activity of cultural institution) and also well-developed tourist, hotel and gastronomic infrastructure.

### 3.3. Safety and condition of environment

A completely different result was obtained by the Silesian voivodeship in terms of security (tab. 10). Although the level of common security has no influence, as a rule, on the costs of the enterprise's functioning, increased expenses connected with the security of the property and current functioning may be at stake due to which this factor may effectively discourage from undertaking investments in a given location. Low level of common security is also a signal on deficits of social capital occurring which may make the realization process of the investment difficult as well as its further functioning.

**Tab. 10** Investment attractiveness of the voivodeships due to the social security level in Poland between 2006-2016

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Podkarpackie | 1,85 | 1,75 | 1,61 | 1,48 | 1,31 | 1,38 | 1,37 | 1,29 | 1,27 | 1,42 | 1,47 |
| Lubelskie | 0,96 | 0,91 | 0,83 | 0,72 | 0,76 | 0,89 | 0,85 | 0,9 | 0,8 | 1,08 | 1,05 |
| Świętokrzyskie | 0,75 | 0,72 | 0,52 | 0,79 | 0,91 | 1,01 | 1,02 | 1,01 | 1,03 | 0,69 | 0,79 |
| Podlaskie | 0,95 | 1,1 | 0,46 | 0,85 | 0,72 | 0,73 | 0,8 | 0,82 | 0,9 | 0,78 | 0,78 |
| Wielkopolskie | 0,35 | 0,28 | 0,45 | 0,4 | 0,21 | 0,38 | 0,4 | 0,51 | 0,47 | 0,4 | 0,35 |
| Kujawsko-Pomorskie | -0,25 | -0,11 | -0,02 | -0,06 | -0,07 | -0,09 | 0,12 | -0,04 | 0,14 | 0,35 | 0,25 |
| Warmińsko-Mazurskie | 0,29 | 0,43 | 0,4 | 0,47 | 0,4 | 0,43 | 0,39 | 0,47 | 0,26 | 0,27 | 0,13 |
| Małopolskie | -0,48 | -0,44 | -0,15 | -0,13 | -0,16 | -0,24 | -0,17 | -0,15 | -0,34 | -0,19 | 0,02 |
| Opolskie | 0,61 | 0,51 | 0,25 | 0,3 | 0,45 | 0,23 | 0,12 | 0,03 | 0,04 | 0,05 | 0,01 |
| Zachodniopomorskie | -0,63 | -0,69 | -0,5 | -0,5 | -0,54 | -0,53 | -0,6 | -0,47 | -0,23 | -0,38 | -0,19 |
| Łódzkie | -0,52 | -0,57 | -0,39 | -0,29 | -0,15 | -0,36 | -0,32 | -0,39 | -0,4 | -0,44 | -0,37 |
| Lubuskie | -0,03 | 0,04 | -0,35 | -0,5 | -0,22 | -0,33 | -0,46 | -0,5 | -0,57 | -0,53 | -0,58 |
| Pomorskie | -1,38 | -1,22 | -0,64 | -0,98 | -0,94 | -0,6 | -0,7 | -0,64 | -0,63 | -0,58 | -0,63 |
| Silesian | -1 | -1,06 | -1,04 | -1,11 | -1,1 | -1,16 | -1,22 | -1,02 | -0,78 | -0,7 | -0,65 |
| Mazowieckie | -0,91 | -1,05 | -0,48 | -0,45 | -0,63 | -0,59 | -0,49 | -0,55 | -0,76 | -0,95 | -0,96 |
| Lower Silesian | -0,56 | -0,6 | -0,95 | -0,99 | -0,96 | -1,12 | -1,09 | -1,27 | -1,18 | -1,27 | -1,46 |

*Source: Ibid.*

For the assessment of the investment attractiveness due to the security level the information is taken into account concerning level and structure of crime rate as well as its detection rate. The leaders in this area are four voivodeships of the eastern Poland – lubelskie, podlaskie, świętokrzyskie and podkarpackie. The rating of the regions with reference to the common security is closed with three voivodeships: mazowieckie, Silesian and Lower Silesian.

The condition of the environment and especially air pollution remains on a high, unsatisfactory level. In accordance with World Health Organization (WHO) it is the Silesian voivodeship which is one of the most polluted regions of the whole Europe. The situation definitely deteriorates each year in autumn and winter.

## 4. Conclusions

Foreign investments, especially with the use of offshoring, can create wealth for both the countries and companies involved (Farell, 2005). It is crucial for regional authorities to be aware that raising investment attractiveness of region or voivodeship can bring many tangible benefits and influence the dynamization of the socio-economic development to a given territory (Raszkowski, 2011). Knowledge and innovations are brought, modern management solutions are implemented, new workplaces are created, work efficiency is increased and GDP is growing. Finally, the process of offshoring investments inflow improve the standard of living of the regional community and the functioning of business entities.

Taking into account all factors discussed, the leader of the investment attractiveness is the Silesian one and it was in the whole analyzed period. In the table 11 below there is the ranking as the resultant of all factors of investment attractiveness prepared.

**Tab. 11** Total investment attractiveness of the voivodeships in Poland between 2006-2016

| | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Śląskie | 0,92 | 0,86 | 0,85 | 0,87 | 0,81 | 0,9 | 0,86 | 0,85 | 0,85 | 0,85 | 0,90 |
| Dolnośląskie | 0,73 | 0,73 | 0,5 | 0,69 | 0,61 | 0,56 | 0,46 | 0,5 | 0,46 | 0,46 | 0,57 |
| Mazowieckie | 0,75 | 0,61 | 0,58 | 0,6 | 0,5 | 0,61 | 0,66 | 0,46 | 0,55 | 0,51 | 0,54 |
| Małopolskie | 0,35 | 0,31 | 0,25 | 0,32 | 0,42 | 0,34 | 0,26 | 0,34 | 0,39 | 0,41 | 0,34 |
| Wielkopolskie | 0,32 | 0,3 | 0,41 | 0,43 | 0,3 | 0,29 | 0,33 | 0,32 | 0,32 | 0,3 | 0,27 |
| Zachodniopomorskie | 0,006 | 0,03 | 0,02 | 0,07 | 0,29 | 0,17 | 0,18 | 0,18 | 0,12 | 0,19 | 0,16 |
| Łódzkie | 0,007 | 0,3 | 0,1 | 0,02 | -0,03 | -0,05 | 0,08 | 0,07 | 0,1 | 0,11 | 0,11 |
| Pomorskie | 0,09 | 0,03 | 0,14 | 0,02 | -0,04 | 0,17 | 0,12 | 0,21 | 0,18 | 0,14 | 0,10 |
| Opolskie | -0,09 | 0 | -0,08 | -0,11 | -0,08 | -0,19 | -0,19 | -0,09 | -0,11 | -0,12 | -0,18 |
| Kujawsko-pomorskie | -0,3 | -0,31 | -0,21 | -0,22 | -0,23 | -0,14 | -0,09 | -0,17 | -0,17 | -0,14 | -0,18 |
| Lubuskie | -0,14 | -0,06 | 0,01 | -0,11 | -0,09 | -0,15 | -0,21 | -0,23 | -0,25 | -0,25 | -0,19 |
| Podkarpackie | -0,45 | -0,35 | -0,34 | -0,38 | -0,39 | -0,39 | -0,42 | -0,4 | -0,36 | -0,34 | -0,34 |
| Świętokrzyskie | -0,54 | -0,55 | -0,55 | -0,56 | -0,51 | -0,41 | -0,52 | -0,45 | -0,39 | -0,48 | -0,47 |
| Lubelskie | -0,61 | -0,64 | -0,61 | -0,65 | -0,57 | -0,6 | -0,46 | -0,52 | -0,55 | -0,52 | -0,50 |
| Warmińskomazurskie | -0,34 | -0,38 | -0,4 | -0,38 | -0,43 | -0,44 | -0,48 | -0,44 | -0,52 | -0,47 | -0,51 |
| Podlaskie | -0,68 | -0,69 | -0,67 | -0,62 | -0,58 | -0,68 | -0,58 | -0,63 | -0,61 | -0,63 | -0,64 |

*Source: Ibid.*

Despite low level of common security, very strong advantages of the voivodeship are high availability of working resources, relatively low labor costs, abundant labor market and well developed economic and social infrastructure. Especially Silesian voivodeship has become the center of IT services in BSS sector and also the number of SSC and BPO units is constantly growing.

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