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THE POTENTIAL OF SELECTED POLISH CITIES FOR ATTRACTING ADVANCED BUSINESS PROCESSES

POTENCJAŁ WYBRANYCH POLSKICH MIAST DLA LOKALIZACJI ZAAWANSOWANYCH USŁUG BIZNESOWYCH

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ABSTRACT: Big cities of Poland have been chosen as investment locations by many companies operating in business sector services. The relatively low cost of skilled labour seems to be their main advantage in this field. However, Polish destinations do not have the absolute labour cost advantage over many other locations, especially those in Asia. Therefore, attracting more demanding advanced business processes becomes a challenge to Polish cities today. Thus, the aim of the paper is to assess the potential of these cities in attracting more advanced business processes, which include, among others, R&D. To attain this goal, synthetic measure based on Hellwig's development pattern was created. The variables used are rooted in the findings from the review of the literature. The results show that the biggest academic city areas of Poland offer the greatest potential to attract advanced business services.

KEY WORDS: Hellwig's measure of development, business sector services, location factors, spatial economics, BPO, SSC

ABSTRAKT: Wiele firm działających w sektorze usług biznesowych wybrało duże polskie miasta jako lokalizacje inwestycyjne. Relatywnie niski koszt wykwalifikowanej siły roboczej wydawał się ich główną zaletą w tym obszarze. Jednak polskie lokalizacje nie mają absolutnej przewagi w odniesieniu do kosztu pracy nad wieloma innymi lokalizacjami, zwłaszcza w Azji. Tym samym przyciąganie bardziej zaawansowanych procesów biznesowych staje się współcześnie szansą dla polskich miast. Dlatego celem artykułu jest ocena potencjału tych miast w przyciąganiu bardziej wymagających, zaawansowanych procesów biznesowych, w tym m.in. w zakresie badań i rozwoju. Aby osiągnąć ten cel, opracowano syntetyczny wskaźnik oceny potencjału analizowanych miast w oparciu o metodę wzorca rozwoju Hellwiga, a użyte zmienne zostały dobrane w oparciu o studia literatury. Wyniki wskazują na przewagę największych ośrodków akademickich w zakresie potencjału przyciągania zaawansowanych usług biznesowych.

SŁOWA KLUCZOWE: metoda wzorca rozwoju Hellwiga, usługi biznesowe, czynniki lokalizacji, ekonomia przestrzenna, BPO, SSC

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Introduction

Poland is one of the world's most dynamically growing markets for Business Process Outsourcing / Shared Service Centres / Information Technology / Research and Development centres.[1] The structure of business services provided by the centres located in Poland is characterised by considerable diversity. Most of the business processes offered by those centres are characterized by a high degree of maturity. However, Polish destinations do not have an absolute labour cost advantage over many other locations. Hence, an increase in the share of advanced, knowledge-intensive tasks (in the structure of services offered in the centres) should be the next stage of development of this sector in Poland. This should enable the comparative advantage of the location to be maintained. Thus, the primary goal of the paper is to assess the potential of selected Polish cities in attracting more advanced business processes. The hypothesis under investigation is as follows: the biggest academic city areas of Poland offer the greatest potential to attract advanced business services.

The decision about localisation of BPO/SSC/IT/R&D in a particular region depends on a set of determinants. Based on the literature review and industry reports, specific factors attracting a company to a particular region should be highlighted. They include (Klimek 2018): the presence of similar entities (information about favourable location conditions, potential competitors), the presence of other companies (information about business attractiveness) and the quality of education, as well as R&D infrastructure (information on the quality of human capital in the region). In this study, based on the relevant literature review, it was decided to consider the following conditions for the decision to start operating in a specific location: resource accessibility, presence of other companies (agglomeration effects and suppliers), cost reduction, the level of infrastructure, research capability, and the quality of life. Diagnostic variables were collected on the basis of ABSL reports and Local Data Bank data by Statistics Poland (GUS). The diagnosis was established on the determination of a taxonomic measure using Hellwig's multidimensional comparative analysis method.

The level of advancement of the services under investigation is understood relatively in this paper. By the advanced services, the authors mean those activities which demand highly educated and skilled human capital, and for which the basic labour cost is not a decisive factor. Those activities include a lot of IT and R&D tasks, but also business processes in the field of finance, management, administration, HR, etc. The key distinctive factor is that the advanced processes have only a little chance of undergoing automation or relocating to the lowest cost countries.

The structure of this paper is organised as follows: the first section contains a literature review on the determinants of advanced business services location. The second section provides a description of the business services sector in Poland. In the third and

[1] Those centres will be referred to here as BPO/SSC/IT/R&D centres, or simply business service centres.

final sections, the procedure for the selection of diagnostic variables, the taxonomic method and the empirical results of the study are presented.

The determinants of advanced business services location in the literature

In the economic literature, location has been an important consideration for foreign investment activities (Kedia & Mukherjee 2008). The OLI paradigm, as proposed by (Dunning 1977), attempted to address the location decision of companies and offered a framework for determining the extent and pattern of FDI. Companies that establish operations abroad typically seek new market opportunities, competitive inputs suppliers, relatively low labour costs, information and skills (Caves 2007; Dunning & Lundan 2008). Hence, FDI can be seen as an activity that aims at satisfying different business needs. In general, companies are expected to choose one location over others because it possesses some optimum portfolio of assets and opportunities (Falck 2014).

Due to the multitude of FDI location concepts and changing conditions, they have undergone a significant evolution: from the analysis of aggregated factors to the comprehensive studies of the mechanism for FDI attraction on the micro level. They show how this mechanism operates in every special area, i.e. a region or a city (this direction includes investigation of such determinants as market-size of a region and its potential, agglomeration, road and railway density, border effects, etc.) (Ablov 2015, Dziemianowicz, Łukomska & Ambroziak 2018).

The concept of locating factors appeared in the literature thanks to A. Weber who defined it as one of the clearly outlined benefits associated with economic activity in a particular place. This benefit was understood as minimizing production costs, which was to be achieved by reducing transport costs (Chądzyński, Nowakowska, Przygodzki 2007). The convenient location, and thus the achievement of specific cost advantages in order to maximize profits, was the motive combining traditional location theories. Starting from J.H. von Thünen (the theory of the location of agriculture – distance from the market) and the above-mentioned A. Weber (the costs of raw materials, labour and transport) through W. Christaller (demand and economies of scale), T. Palander (location near the place of sale), A. Lösch (as demanding factor), W. Isard and H. Hotelling (location of competitive enterprises) and ending with the concept by E. Hoover (the economies of scale), the factor that determined the location of activities in space is reduction in production costs. (Piętak 2014; Gawlikowska-Hueckel 2003).

According to Wierzbicka (2015), location factors are generally divided into those determining the efficiency of enterprises (e.g. the availability and cost of acquiring basic production factors, the quality of management) and factors conditioning the use of benefits resulting from this efficiency (e.g. spatial diversification of sales volumes and prices). In the literature, there are a number of other classifications of location factors,

such as the division into the so-called hard and soft factors of investment attractiveness or the notorious Porter's diamond (see: Porter 1998; Gorzelak & Jałowiecki 2000; Budner 2007; Churski 2008).

Due to globalization, starting in the 1980s, there have been significant changes in the perception of what we call the location factors today. The changes that have taken place in the production process, international division of labour and global trade in services are defined as the transition from Fordism to Postfordism. The move from the economy of scale to the economy of quality, from mass and standard production to individualized and flexible production, from cost to qualitative competition, from relying on basic raw materials to knowledge as key capital, required a new look at the factors of business location (Wierzbicka 2015; Olejniczak 2005).

In the most general terms, it may be said that the change in location factors is reflected in the decline of the importance of *cost* factors (such as transport costs, labour costs, taxes) and in the reinforcement of qualitative elements of human capital, such as creativity and knowledge (codified and hidden), high qualifications, the ability to adapt to rapid changes, openness to new ideas, ability to cooperate (Stryjakiewicz 2009). A great deal of empirical analysis shows that besides wages, a well-educated workforce with language skills and low country risk play an important role in any offshore business services, not only the most demanding R&D (Doh et al. 2009). Besides these, geographic distance and previous BPO experience of a country play a part as well (Graf & Mudambi 2005). Moreover, geographic distance appears to be a greater obstacle, as generating organisation and control problem, than cultural distance (Handley & Benton 2013). What is also important is that R&D services demand high quality human capital and the location of investments in this sector is also worth taking into consideration. For some authors, the decisive location factor is a source of skilled scientists and engineers (Demirbag & Glaister 2010) because the companies use off-shoring of R&D primarily as a tool to augment their knowledge base.

The growth of the so-called soft location factors affect the importance of creativity and the concept of creative class (Florida 2005), especially in the area of services and new technologies that generate high added value, and is characterized by high profitability (Marcinkowska 2015). Nowadays, cities try to be attractive for the creative class by cultural heritage, ethnic diversity, openness and tolerance, attractiveness of places of residence and public space, quality of education and the level of security (Romanowski, Walkowiak-Markiewicz 2015). For these reasons, new concepts like *intelligent cities* appear in the literature (Komninos 2008). In such cities, the function of generating innovations dominates traditional functions such as work, leisure, housing and mobility. If a city manages to become "intelligent", it contributes to its economic success (Kwaśny, Mroczek 2013). Thus, it is important to attract students to stay in a particular city after graduation because of their further positive impact on the development of the urban economy and labour market (Sokolowicz 2019). What is crucial for advanced business services, is the so-called *innovative environment* – an

access to relatively immobile tacit knowledge and knowledge spillovers. (Hansen & Winther 2010; Rubalcuba et al. 2013)

It should be highlighted that advanced service centres are located in cities, usually relatively large – at least on the scale of a given country, due to the availability of qualified workforce. Rich human resources of this type are available in large urban centres as a result of the fact that they are also most commonly academic centres, and also because of the attractiveness of their labour markets (Krugman 1995). However, as is usual in the largest centres, the costs of employing qualified personnel are the highest. Therefore, slightly smaller cities have some chances in competition for investments from the sphere of higher-level services (Mroczek 2010) provided that they offer enough supply of high-quality office space (Wdowicka 2009). This supply is one of the most important factors for the location of business services.

According to Grycuk (2014), each company has its own set of criteria which it takes into consideration when selecting the location for its new investment. The most important factors taken into account by advanced business service centres are:

– the supply of employees with the required qualifications,
– labour costs,
– the availability and cost of telecommunications infrastructure,
– the availability and cost of office space infrastructure,
– geographical location (time zone, proximity of the international airport),
– legal conditions (including flexibility of labour law and protection of intellectual property),
– investment incentives offered by the government and local authorities (grants for creating new jobs, tax exemptions),
– cultural similarity of the country,
– general attractiveness of locations for foreign employees (expatriates).

Other researchers, in relation to Krakow, noticed that the combination of global factors with local features led to the creation of a new development trajectory, which gave impetus to the dynamic development of the new sector of economy. In their opinion, these were: the benefits of diversification, the benefits of agglomeration, the image of the city, and external connections – multiculturalism and multi ethnicity – cosmopolitanism, internal connections – networking, clustering (Micek, Gwosdz, Kwiatkowski, Panecka-Niepsuj 2017). On the other hand, a report by A.T. Kearney The *Global Services Location Index* (GSLI) is based on three main factors determining the attractiveness of locating service activities in individual countries: 1) financial attractiveness (obtainable financial results); 2) employees' competences and their availability; 3) business environment (Kerney 2011).

According to a survey of Polish BPO representatives conducted by Budner & Resmer (2015), the key factors attracting investment in this field are employees' qualifications and the supply of them. Thus, the availability of human capital surpasses, among others, the labour cost, infrastructure and governmental factors.

The structure of the business services sector in Poland

The branch of modern business services has become one of the fastest developing areas of service activity in Poland (Mroczek 2016), employing in 2018 a total of 279 000 people (in 2009 it was 47 000). More than 95% out of all employees of the centres are employed in the eleven largest business services locations (Krakow, Warsaw, Wrocław, the Tricity, Katowice Agglomeration,[2] Łódź, Poznań, Bydgoszcz, Lublin and Szczecin). In terms of the number of service centres, Warsaw is ranked first in Poland (210 centres). Among the cities with over 100 centres, there are also: Krakow (195), Wrocław (154) and the The Tricity (135). In total, there are already 1 236 service centres on the Polish market, 840 of which are foreign investments (68%) (ABSL 2018).

Krakow is characterized by the largest number of employees among all of the analysed locations (64 000 people, which accounts for 24% of employees in the business services sector in Poland). At the same time, it is worth noting that the share of employees of the business service centres in the population of people between 18 to 44 years old in the city is the highest in Poland (18%). The analysed sector is also important for the regional labour market in Wrocław, which provides work for 15.4% of the population aged 18-44.

It is also important to identify location's focus in terms of employment at BPO, SSC, IT/R&D centres. Table 1 presents location quotient (LQ), which in the analysed

Table 1

The location quotient for selected location

Territorial unit	BPO	SSC	IT/R&D
Aglomeracja Katowicka	0.7	0.8	1.3
Bydgoszcz	0.2	0.3	1.9
Krakow	1.0	1.3	0.8
Lublin	0.9	0.8	1.2
Łódź	1.7	0.6	1.0
Poznań	1.4	1.1	0.8
Rzeszów	0.8	0.2	1.7
Szczecin	1.0	1.1	0.9
The Tricity	0.7	0.8	1.3
Warsaw	1.1	1.3	0.7
Wrocław	0.6	0.9	1.2

Source: ABSL 2018.

[2] The Katowice Agglomeration takes into account the centres operating in Katowice, Gliwice, Dąbrowa Górnicza, Sosnowiec, Ruda Śląska, Tychy and Bytom.

example is the ratio of the structure of employment in the sector at a given location to the structure of the business services nationwide (ABSL 2018). The LQ enables to determine the locations where business services employment (by centre type) is "over-represented" (LQ > 1) and relatively "underrepresented" (LQ < 1).

In other words, the higher the value of the indicator, the bigger the regional focus on a specific type of services. The results collected in Table 3 indicate that IT/R&D activities are highly represented in Bydgoszcz and Rzeszów. This can be explained by the fact that the overall employment in the service sector is not significant in those cities, so even a few existing centres can make the case. Amongst the largest business services locations, IT/R&D centres play the most important role in the Katowice Agglomeration, the Tricity and Wrocław.

Methods

As the business services sector tends to locate in big cities, eleven Polish metropolitan areas have been chosen for the study. These are the biggest cities in Poland (in three instances, they are agglomerations made of several cities). Almost all of those cities are inhabited by more than 300 thousand, except for Rzeszów which is still the biggest city in its region. After choosing the objects, a comparison of them was planned to be performed. Hellwig's synthetic measure of development pattern method was used. It is a taxonomic procedure that allows ranking the objects according to a set of different factors, which neither need to be of the same kind nor expressed in the same unit. After the literature review had been done, nine indicators were chosen for which the data could be found in the Local Database run by the Statistics Poland (GUS). Those indicators will be referred to here as the features of the objects under consideration, or simply diagnostic variables. In the case of each variable, the most up-to-date available data were used. Therefore the set includes data ranging from 2015 to 2018. As all the values undergo a normalization procedure, this has little influence on the final results. The variables are presented in Table 2.

Table 2

The initial diagnostic variables

Symbol	Description	Unit, year
X1	Total number of university students	No. of persons, 2017
X2	Students of ICT and technical engineering	No. of persons, 2017
X3	Students of economics, business administration and modern languages	No. of persons, 2017
X4	Agglomeration effects	No. of companies, 2018
X5	Cost of salaries	PLN / month, 2017
X6	Rental cost	m^2/month (EUR), 2018

Table 2 contd.

Symbol	Description	Unit, year
X7	Office space supply	m^2, 2015
X8	Higher education	No. of institutions, 2017
X9	GDP per capita	PLN, 2016

Source: authors' own elaboration

The X1 variable describes the overall talent pool for each city, and X2 shows the potential for IT and R&D activities. X3, on the other hand, illustrates the potential to deal with financial and other business processes. X4 is used to grasp the agglomeration effects; it shows the number of companies classified in statistical sections that can be potential suppliers or co-operators. The sections are: J 58, 62, 63 (IT industry), L (for the real estate market), M 69, 70, 71, 73, 74 (consulting, headquarters, engineering, R&D, advertising and other professional activities), N 78, 80, 81, 82 (HR, security and office supply). In case of X5, the cost factor is represented by the average salaries in the M section of statistical section, which includes broadly understood professional, scientific, R&D and technical activities. The lower the wages in this sector, the bigger the potential cost reduction for business sector investors, so this factor is a damper here. X6 – the cost of renting office space – is also a damper as it is one of the basic cost generators for the industry. X7 – the total supply of the office space – is a booster. X8 shows the number of higher education institutions, which is used as a proxy for R&D capability of the cities as it was not possible to acquire the direct data in this field. Finally, for X9, GDP per capita is used to indicate the quality of living in each city, which is also a proxy measure. The justification for this is that it shows the tax income base for the local authorities, which allows them to provide public services for the inhabitants.

After the data had been collected, a procedure of elimination of unnecessary variables was executed. Then, normalisation of the lasting values was performed in order to make them comparable. Finally, it was possible to calculate the synthetic measure for each object of the study.

When using a synthetic measure, it is important to construct it on the basis of several variables, each of which should have a high informational value. To control it, the variability coefficient for each variable was calculated first. If a variable is not differentiated, it brings little information value. As it turned out, each of the coefficients was above 20%, therefore, all of the variables qualified at this step (Murawska 2010). Another step is to check if any variables are strongly correlated with each other – whether they provide almost the same information. Such cases should be eliminated and if they happen to appear, one of such correlated variables ought to be omitted. To correct this fact, Table 3 presents the correlation coefficients of all the pairs of the variables.

Table 3

Coefficients of correlation for the initial diagnostic variables

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9
X1	—	0.96	0.99	0.92	0.95	0.91	0.89	0.92	0.94
X2	0.96	—	0.94	0.85	0.98	0.87	0.93	0.85	0.88
X3	0.99	0.94	—	0.92	0.93	0.92	0.90	0.94	0.98
X4	0.92	0.85	0.92	—	0.87	0.96	0.87	0.98	0.92
X5	0.95	0.98	0.93	0.87	—	0.89	0.92	0.85	0.87
X6	0.91	0.87	0.92	0.96	0.89	—	0.87	0.96	0.95
X7	0.89	0.93	0.90	0.87	0.92	0.87	—	0.87	0.87
X8	0.92	0.85	0.94	0.98	0.85	0.96	0.87	—	0.95
X9	0.94	0.88	0.98	0.92	0.87	0.95	0.87	0.95	—

Source: authors' own elaboration

All the diagnostic variables turned out to be highly correlated. So it was decided to eliminate just the extremely highly correlated ones – that is to say those for which the coefficient was 0.98 and more. The first of these cases was X2 related to X5; in which case, it was decided to eliminate X2 as important only for a part of the industry. Also X3 was eliminated due to the same reason as it was related to X1. The latter was kept as it describes the general factor – important for all the industry under consideration. X3 was also highly related to X9, which was another argument for elimination. The last eliminated variable was X8, highly related to X4. X4 was kept as it also seems to be more important for all of the industry, not just R&D. Commenting on the extreme correlation of the variables, it is worth noting that because of the above, the final results will depend on the overall potential of the cities, and not particular results in one or two criteria.

In the case of most of the variables, except X5 and X6, higher levels are desirable, which makes them boosters. X5 and X6 are variables of a different kind and lower levels are desirable – thus, they can be described as de-stimulants. To make them useful, they were transformed in such a way that their higher levels may also be desirable. It was achieved by deducting the rate of each object from the highest level noted. In this way, the greatest difference indicated the biggest number, meaning the highest cost efficiency for investors. In order to make the influence of all the features equal, it was necessary to normalise the data. It was made by using the equation:

$$z_{ij} = \frac{x_{ij} - \min x_{ij}}{\max x_{ij} - \min x_{ij}}, \quad i = 1,2\ldots n, \quad j = 1,2\ldots 6 \tag{1}$$

where:
z_{ij} – value of j-feature for i-object, after normalisation,
x_{ij} – value of j-feature for i-object, before normalisation.

The normalised values range from 0 to 1, where 0 is the worst score and 1 is the best.

Next, a synthetic measure for each object was calculated. This factor can be described as the sum of the distances of the object under consideration to the best object for each variable, in a formal way (Krakowiak-Bal 2005):

$$d_i = 1 - \frac{c_{i0}}{c_0}, \quad i = 1,2 \ldots n \tag{2}$$

where:

$$c_{i0} = \left(\sum_{j=1}^{n} (z_{ij} - z_{0j})^2 \right)^{\frac{1}{2}} \tag{3}$$

$$c_0 = \overline{c}_0 + 2SD, \quad \overline{c}_0 = \frac{1}{n} \sum_{j=1}^{n} c_{i0} \tag{4}$$

and:

d_i – Hellwig's development pattern synthetic measure,
c_{i0} – Euclidean distance of each z_{ij} from z_{0j} (from the best object in the category),
SD – standard deviation.

The results that can be obtained range basically from 0 to 1 and 1 is the highest possible score, i.e. the benchmark. Only the extremely bad results can be lower than 0.

Results and discussion

The basic input data and the final synthetic score for each object are presented in Table 4.

Table 4

The input data and the synthetic measure

Metropolitan area	Diagnostic variable						Hellwig's synthetic measure
	X1	X4	X5	X6	X7	X9	
	Total number of students	Agglomeration effects	Cost of salaries	Rental cost	Office space supply	GDP per capita	
The Katowice Agglomeration	84 611	35 914	4 391.60	13.0	46 116	61 565	0.21
Bydgoszcz and Toruń	55 939	20 542	3 757.35	9.5	14 871	50 343	0.11
Krakow	143 613	43 686	5 761.77	13.6	84 200	80 353	0.30
Lublin	62 977	15 007	3 607.04	10.0	25 103	44 591	0.11
Łódź	72 019	22 827	4 227.05	12.2	25 359	59 347	0.16
Poznań	110 346	35 404	4 385.31	13.5	52 508	96 138	0.30
Rzeszów	40 016	12 709	3 886.39	10.5	8 661	42 429	0.05
Szczecin	35 043	18 151	3 600.81	12.0	17 845	57 054	0.09

Table 4 contd.

Metropolitan area	Diagnostic variable						Hellwig's synthetic measure
	X1	X4	X5	X6	X7	X9	
	Total number of students	Agglomeration effects	Cost of salaries	Rental cost	Office space supply	GDP per capita	
The Tricity	81 338	39 242	4 904.36	13.2	100 052	70 306	0.28
Warsaw	230 268	157 327	6 671.91	21.0	193 769	141 941	0.33
Wrocław	114 825	42 484	5 028.51	13.0	131 628	79 838	0.36

Source: GUS, Vademecum samorządowca, ABSL, GUS – Baza Danych Lokalnych, JLL, PORF, own calculations.

The focus of this paper is on the potential of Polish cities to attract advanced business services, which by definition, demand greater potential than more basic activities. The results clearly show that the biggest metropolitan areas of Poland possess a distinctive advantage over the smaller ones. The most attractive places to locate demanding business services are: Wrocław, Warsaw, Krakow, Poznań and the Tricity, all of them being big metropolitan areas in terms of the number of inhabitants. The only exceptions here are the Katowice Agglomeration and Łódź. Both these areas hold a strong industrial heritage and are much less academic in their character, which, at least partly, explains their weaker results. The rest of the areas – Bydgoszcz and Toruń as well as Lublin, Rzeszów and Szczecin are much smaller in terms of the number of inhabitants and obtain the smallest values of the synthetic measure. Therefore, it can be stated that the hypothesis stating that the biggest academic city areas of Poland offer the greatest potential to attract advanced business services has been positively verified.

It is worth noting that two out of the total six variables (X5 and X6) are de-stimulants, and their values are usually high for big cities. This lowers the final score for these cities. And this seems to be the reason why the values of the synthetic measure for them are only about 0.3. Nevertheless, it is a fact that the strongest academic centres, and also generally the biggest cities, occupy the leading places. This can be intuitively accepted and goes along with the theoretical background.

The results can be a voice in the discussion on the spatial development and the role of big metropolises in contemporary economy. It seems that a notion that the Polish economy needs some new sources of competitiveness, due to increasing domestic labour costs, is generally accepted. This study shows that big academic cities can be one of the sources of such a competitive advantage. It also suggests that, in general, opportunities for smaller cities in this field are limited, although not negligible. In some cases, especially in connection with production facilities, mainly IT and R&D activities can find preferable environments there. In fact, the ABSL (2018) report shows that this kind of activity is highly represented in Bydgoszcz and Rzeszów, in terms of share of IT and R&D in total business service investments. This effect is based on the

simple fact that investments in financial and other non-technical businesses are small in those two cities. So those cases do not prove that the smaller cities have any general high potential in attracting a wide range of advanced services. What they show is only that particular investments, mostly in technical fields, can be attracted by some cities. From the policy's point of view, any state-run policy promoting a more dispersed allocation of investments, like encouraging companies to locate in smaller cities, would not be easy to succeed.

Conclusions

The results of this study show that the best conditions for advanced business services in Poland are offered by the biggest cities – with some exceptions. Even though the cost factors are less favourable than in smaller cities, their advantage is based on better access to resources, mainly the rich source of human capital. This indicates the important role of big metropolitan areas in the contemporary economy of Poland, at least in terms of the advanced services.

The obvious limitation of this study is its focus on hard data based objective indicators, which do not exhaust the total pattern of factors taken into consideration by investors choosing their destinations. This kind of study should also include a kind of qualitative analysis, as well as the role of factors like city image, in attracting investors. Nevertheless, the current study may be, in the opinion of the authors, a starting point of a deeper discussion on advanced business services sector in Poland.

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