

Outsourcing of Information Technology and Business Processes in Poland: Motivations and Environmental Factors

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The aim of the paper is to summarise the literature focused on Information Technology and Business Process Outsourcing in Poland and to contribute to understanding of motivations and environmental factors driving service relocations to Central and Eastern Europe. This exploratory study is based on academic literature and two data sources: government and industry reports, as well as small-scale exploratory survey. The findings confirm the cost reduction to be the main driver, followed by the willingness to improve processes and business performance. The substantial advantage of Poland is human resources – the availability of highly skilled, well-educated workforce at relatively low cost. Even though the salaries are often higher than in Asia, it is compensated by the number of graduates and knowledge of foreign languages. Membership of the European Union and political stability also plays an important role. This exploratory study, aside of relocation trends overview, enabled the views among service providers to be captured and compared with the commercial and governmental reports.

Key Words: information technology, outsourcing, offshoring, business process, transition economy, Poland, Central and Eastern Europe

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Introduction

International service transfers have been a vital part of global economic transitions and in the past decade its dynamic growth has been observed in the region of Central and Eastern Europe (CEE) (Rilla and Squicciarini 2011; Kedziora, Kraslawski, and Kärri 2016). Nevertheless, the majority of service offshoring studies have been focused on India and China (Gonzalez, Llopis, and Gasco 2013; Lacity, Khan, and Yan 2010). Focus

on Asian countries and limited research on CEE region does not reflect current trends.

Therefore, this paper focuses on Business Process Outsourcing (BPO), together with Information Technology Outsourcing (ITO) in the context of Poland and the wider Visegrad Group (V4) region. Although global Foreign Direct Investments (FDIs) in knowledge-intensive industries decreased since the late 2000s at the global level, this trend was not observed in CEE (Micek 2015), where we had observed an increase in service investments since 2000 (Hardy, Sass, and Fifekova 2011). Between 2001 and 2012, the export of ITO/BPO had increased from 17.5% to 34% of total service export (Myszkowska 2014) and the rapid increase in services' relocations was particularly visible after the V4 countries joined the European Union in 2004 (Gál 2014; Kedziora, Karri, Kraslawski, and Halasa 2017). While initially Western companies were transferring to CEE region mainly manufacturing tasks (Collins and Grimes 2011), it had quickly started to shift onto more advanced functions (Jacoby 2010; Jürgens and Krzywdzinski 2009), transitioning the country's position from the role of materials and low technology exporter onto the modern services delivery hub (Hardy 2007; Association of Business Services Leaders 2017). Foreign investments in Poland, and the entire region, together with emerging local companies, capable of selling services abroad, influence socio-economic development and economic convergence. While there are flows of capital and investments, equally or even more important are transfers of knowledge and managerial practices, which, in turn, allow CEE-located companies to participate in international business and supply chain networks. In the mid-term, this triggers changes in the country's perception as sourcing destination, attractiveness for further investments, climbing at the global value chain by delivering more advanced services.

The paper has been structured as follows: after the introduction, the definitions and literature on offshoring and ITO/BPO are briefly overviewed; the modern services in Poland are presented and some of the factors that influence their relocation are analysed. The research is exploring perceptions of outsourcing motivations in Poland, addressing two questions:

1. What are the key motivators driving service relocations to Poland?
2. Which environmental factors are influencing Polish outsourcing of business process (BPO) and information technology (ITO)?

TABLE 1 Academic Literature Review, Classification of Papers

Offshoring and Outsourcing in Business	Alsudairi and Dwivedi (2010), Bharadwaj, Saxena, and Halemane (2010), Busse et al. (2017), Dibbern, Goles, and Hirschheim (2004), Fjermestad and Saitta (2005), Gonzalez, Gasco, and Llopis (2006), Gonzalez, Llopis, and Gasco (2013), Jayaraman et al. (2012), Kamann and Van Nieulande (2010), Kedziora, Klamut, Karri, and Kraslawski (2017), Kern and Wilcocks (2002), Lacity, Khan, and Willcocks (2009), Lacity, Khan, and Yan (2010), Lacity, Solomon, and Yan (2011), Loebbecke and Huyskens (2006), Loebbecke and Huyskens (2006), Sudan, Ayers, and Dongier (2010), Wiener, Vogel, and Amberg (2010).
BPO/ITO in Poland and other transition economies	Alsudairi and Dwivedi (2010), Capik and Drahokoupil (2011), Dedrick, Carmel, and Kraemer (2011), Epstein (2014), Gál (2014), Guzik and Micek (2008), Hardy, Micek, and Capik (2011), Kedziora, Kraslawski, and Kärri (2016), Liu, Luo, and Liu (2009), Manning (2014), McNulty and Harper (2012), Micek (2015), Myszkowska (2014), Piotrowicz (2015a), Prasad and Babbar (2000), Roztocki and Weistroffer (2008), Roztocki and Weistroffer (2015), Sass and Fifekova (2011), Soja and Cunha (2015), Tambe and Hitt (2010), Vrhovec, Trkman, and Kumer (2015).
Motivations to outsource	Gál (2014), Juvonen (2009), Kedziora, Kraslawski, and Kärri (2017), Lacity, Khan, and Willcocks (2009), Lacity, Khan, and Yan (2010), Schwarz (2014), Wiener, Vogel, and Amberg (2010).
Environmental factors – selection criteria	Alsudairi and Dwivedi (2010), Capik and Drahokoupil (2011), Fjermestad and Saitta (2005), Juvonen (2009), Lacity, Khan, and Yan (2010), Lacity, Solomon, and Yan (2011), Sass and Fifekova (2011), Sudan, Ayers, and Dongier (2010), Wiener, Vogel, and Amberg (2010).

Literature Review

The literature review stems from information systems discipline, additionally incorporating papers from journals related to regional studies, international business and economic geography divided into four main streams (table 1).

Concepts of Offshoring and Outsourcing

Offshoring in business is to be understood as relocation of some operational task to another country (Gonzalez, Llopis, and Gasco 2013). Term *nearshoring* is often used when geographical and cultural distances between customer and provider are short, whereas *farshoring* when they are far-off (Kamann and Van Nieulande 2010; Busse et al. 2017). *Captive (in-house) offshoring* refers to all remote activities that are delivered within the boundaries of the same company, but in some different coun-

try (Baier, Rammer, and Schubert 2015). *Business Process Outsourcing* (BPO) is a practice of sourcing operational processes with some external service providers (Lacity, Solomon, and Yan 2011, 1), across diverse service lines, such as accounting and finance, customer management, procurement, human resources and training (Jayaraman et al. 2012). *Information Technology Outsourcing* (ITO) can be understood as a special form of process outsourcing, when operations shifted to an external provider are of Information Technology (IT) domain (e.g. assets, infrastructure, or coding activities) (Kern and Wilcocks 2002). Other associated concepts are *IT services* and *IT-enabled services* (Sudan, Ayers, and Dongier 2010) that include ITO, BPO and manufacturing engineering. More about outsourcing-related terms can be found in the work of Alsu-dairi and Dwivedi (2010), who identified 42 of its variations. Within *IT offshoring* it is possible to separate: *IT, Business Processes* and *Call Centres* and other customer care/contact centres (Bhalla, Sodhi, and Son 2008). All such offshore operations of various types and delivery models can be broadly referred to as *modern business services* (Kedziora, Klamut, Karri, and Kraslawski 2017).

ITO can be 'full' when all functions are transferred or selectively focused on certain activities or processes (Loebbecke and Huyskens 2006). Unlike project-based ITO, which mainly allows for testing and adjustment, BPO tends to be run from day one in real-time settings (Bharadwaj, Saxena, and Halemane 2010). The transaction costs of offshoring are higher compared to local outsourcing (Dibbern, Goles, and Hirschheim 2004). Nevertheless, there is an increase of IT providers from India and South-East Asia, that competes with Western companies (Gonzalez, Gasco, and Llopis 2006) taking advantage of wage differences (Fjermestad and Saitta, 2005). It is important to stress that not all outsourcing initiatives are successful and may end up in *IT back-sourcing* (bringing IT functions back to the incumbent organisation), or *IT insourcing* (keeping IT in-house) (Qu, Oh, and Pinsonneault 2010). ITO is a well-established business phenomenon, experiencing its first wave as early as the 1960s (Loebbecke and Huyskens 2006), followed by the emergence of service offshoring in the 1980s (Wiener, Vogel, and Amberg 2010) and finally, BPO as of the 1990s (Lacity, Solomon, and Yan 2011).

Motivations to Outsource

Reviews (Lacity, Khan, and Yan 2010; Lacity, Khan, and Willcocks 2009) have synthesised academic literature focused on ITO/BPO. The authors

analysed independent variables which influenced motivations to outsource, for both ITO (20 variables) and BPO (19 variables), as well as compared differences and similarities. In case of ITO, several motivating factors were identified, including: *cost reduction, focus on core capabilities, access to skills/expertise, business/process improvements, technical and political reasons, concerns for security/intellectual property, and fear of losing control*. For BPO there was not much difference, as the top four motivating factors were repeated with a small change in order. A similar study, by Juvonen (2009), identified *cost reduction, access to skills and technologies* as top driving factors, followed by *quality improvements, pressure to cut costs and debt reduction*. In many cases, after the transition project transferring tasks to a new location is over, the operational effort is put on optimization and continuous improvement of the service resulting in financial benefits (Kedziora, Kraslawski, and Kärri 2017). Wiener, Vogel, and Amberg (2010) has also identified *cost reduction* as a top financial benefit, emphasising the *quality of IT workers at low cost, and the maximisation of short-term profits*. Among strategic benefits, *access to skills* was listed as number one, followed by *quality standards and certifications, access to IT workers, focus on core competences, lack of time zones, tax breaks, global capabilities and proximity to markets*. While there are differences between cited papers, there is clear agreement that the leading motivating factors are: *cost reduction, access to skills and expertise, improvements in business processes (including financial performance) and focus on core capabilities*. Different results were reported by Schwarz (2014) who listed the ability to *access additional capabilities, skills and knowledge* as the leading IT outsourcing success factors, with financial benefits listed as the third factor. Some of the criteria (such as time zone differences) are specific to offshore sourcing (Lacity, Khan, and Willcocks 2009). Local CEE advantages were also discussed by Gál (2014). Motivating factors were extracted from the above literature to be included in the questionnaire used for data collection part of the present study.

Environmental Factors – Selection Criteria

Environmental variables hardly appeared in ITO studies (Lacity, Khan, and Yan 2010). Alsudairi and Dwivedi (2010) noted that social, economic, political and legal issues are not well explored in the context of ITO. A greater focus on the environment can be found in the BPO studies (Lacity, Solomon, and Yan 2011), where it was possible to distinguish county-level characteristics such as:

- cultural distance,
- financial attractiveness (including factors such as labour costs, taxes, regulations),
- human resources (HR) attractiveness (quality of education and availability of workforce),
- legal and political uncertainties and time zone differences.

Another literature-based analysis listed language, culture and trust as potentially problematic factors (Juvonen 2009). Cultural differences, language, legal and political uncertainty, geographical distance, workforce, infrastructure and government initiatives were also included in the analysis of IT offshoring by Wiener, Vogel, and Amberg (2010). Comprehensive work focusing on country-level competitiveness was completed by Sudan, Ayers, and Dongier (2010), who overviewed and combined several commercial frameworks used to analyse countries as outsourcing destinations, including elements such as infrastructure, labour pool, or cost-related issues. Infrastructure and technology, culture, political climate, taxes and policies were also incorporated in the framework designed by Fjermestad and Saitta (2005). Outsourcing decisions in e-banking context were also explored by Hanafizadeh and Zare Ravasan (2018).

The motivations for the service FDIS were investigated by Capik and Drahokoupil (2011) who concluded that the main drivers are: *low labour costs, proximity to Western markets and availability of skilled workforce*. They also listed cost effectiveness, quality of infrastructure, access to new markets, culture, previous experience in the country and investment incentives. It should be noted that these drivers were identified for the whole v4 group, not individual countries, and no ranking was calculated. Thirty interviews among v4 region managers (Sass and Fifekova 2011) indicated that market access is a leading issue in the horizontal FDIS, while for verticals: cost reduction, availability and cost of labour, followed by strategic location, infrastructure, political and business environment and cultural affinity.

BPO/ITO Research in Poland and Other Transition Economies

Transitional (or transition) economies include former communist bloc countries, such as Poland, Czech Republic and Russia. Post-communist European countries are characterised by a high level of industrialisation and education, but their political and legal systems are still not at the level characterised by developed nations (Prasad and Babbar 2000). The

emergence of market economies in CEE region was a notable event in the world economy (McNulty and Harper 2012), and they are still undergoing multidimensional and intensive transitions in the economic, legal and social environment (Liu, Luo, and Liu 2009). Research focused on ITO/BPO in transition economies, including v4 (Czech Republic, Hungary, Poland, and Slovakia), is very limited (Roztocki and Weistroffer 2015; Piotrowicz 2015a), despite differences in IT implementation and uses between transition and developed countries (Soja and Cunha 2015). This is not surprising, as the main role of universities in many developing countries is teaching, not research (Roztocki and Weistroffer 2008).

Research focused on ITO/BPO in Poland is scarce, despite the rapid growth of the sector (Gál 2014; Myszkowska 2014). Sass and Fifekova (2011), Gál (2014), Hardy, Micek, and Capik (2011), Micek (2015) and Myszkowska (2014) focused on BPO and services offshoring in the v4 and CEE region. Poland was also included in the study of software industry delocalisation (Guzik and Micek 2008; Kedziora, Kraslawski, and Kärri 2016; Kedziora, Karri, Kraslawski, and Halasa 2017). The process of services relocation to Visegrad countries was overviewed by Myszkowska (2014) using secondary data. However, as Myszkowska herself pointed out, there was a lack of statistics focused directly on offshoring activities. As a result, other indicators, such as balance of payments, were analysed in the context of size and structure of the service sector. Findings indicate the sharp growth of service exports since 2002, with Poland being the regional leader in the value of such exports (Myszkowska 2014). FDIS in business services in v4 countries were analysed by Capik and Drahokoupil (2011) who overviewed policies and practices towards a knowledge-based economy, including FDIS in the service sector in each country. Capik concludes that investments in services are mainly utilising existing resources, which allows for the development of individual workers rather than increasing and transforming local knowledge creation. Moreover, Capik and Drahokoupil (2011) offered an overview of services offered by v4 countries: back office, customer contact, common corporate functions, knowledge services and decision analysis, and Research and Development (R&D). The presence of FDIS in BPO was also investigated by Micek (2015). The studies on the Kraków region as a location for software development (Micek 2008), and offshoring destination (Micek, Dziątek, and Górecki 2011) were also conducted. The research utilises multiple data sources, including interviews, and is focused on the links between offshoring and impact on local markets, such as job creation and

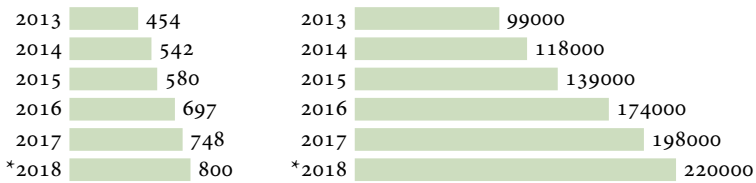


FIGURE 1 Growth of the Polish Service Offshoring Sector in 2013–2017 (left – number of centres, right – headcount of employees, * estimate; adapted from Association of Business Services Leaders 2017)

various taxes paid by individuals and organisations (Micek, Działek, and Górecki 2011). There is also an interview with a BPO expert focused on the nature of Polish BPO/ITO sector (Piotrowicz 2015b), as well as a study of personal development and leadership perception among employees of this industry (Kedziora et al. 2018).

As pointed out by Micek (2008), initially the development of companies was not balanced spatially, with majority of them being located in major agglomerations (Micek 2008), but later secondary locations were chosen and spatial deconcentration was observed. In such comparison, Poland holds a position of a regional leader in CEE region, in the same time being the second largest remote services delivery hub in Europe. Despite the rapid growth of the offshoring sector, it is important to remember that the share of knowledge intensive services and R&D expenditure is rather low in relation to other, developed EU countries (Capik and Drahekoupil 2011). Moreover, low R&D expenditure results in underutilisation of available, well-qualified labour (Hardy 2007). Initially, manufacturers which moved to Poland relocated merely basic, simple operations, keeping R&D in the West (Jürgens and Krzywdzinski 2009). As a result, multinational corporations are largely controlling R&D and innovation (Epstein 2014). The Visegrad group, including Poland, still have low FDI in the service sector compared to Asian countries (Myszkowska 2014).

State of the ITO and BPO in Poland

The sector of modern business services in Poland has been rapidly growing for the past few years (Kedziora, Kraslawski, and Kärri 2016), and currently employs nearly 200 000 workers in over 700 delivery centres (Association of Business Services Leaders 2017), as presented in figure 1.

The offshored delivery centres are owned by global brands, from variety of sectors. Their key types processes executed in those centres are: IT:

User Support/Service Desk, Finance & Accounting (F&A), BFSI: Banking, Financial and Insurance specific services, Customer Operations, Research & Development, HR (incl. Payroll), Supply Chain Management & Logistics and Procurement (Association of Business Services Leaders 2017). In general, the years 2000–2016 were associated with the sustained economic growth in Poland, with increasing income and quality of life (OECD 2016b), which has changed the overall position of the country. In 2016, Poland moved up the list of the *AT Kearney Global Service Location Index*, achieving 10th place in the world; being the highest rank of any European country (AT Kearney 2016). The latest Tholons ranking listed Kraków as number 8 for ‘top outsourcing destinations’ and two other Polish cities appear among the top 100; Warsaw at 23 and Wrocław at 78 (see <http://www.tholons.com>).

This trend is likely to continue as Deloitte (2016) anticipates that the market will continue to merge services from the perspective of technology, process and capability-based models. A global increase in ITO/BPO migrations is not surprising as already in 2010, Poland was expected to become one of the emerging Knowledge Process Outsourcing (KPO) economies due to low entry barriers and the availability of a highly skilled workforce (Jones Lang LeSalle 2010). Documents which target investors have been used, listing the advantages of Poland such as a large labour pool, a highly educated workforce, language skills, availability of office space and close proximity to West European markets (JP Weber/PAIIZ, 2014). Documents prepared by the Polish Investment and Trade Agency stress issues such as: scale of economic growth, stability, large number of graduates, highly qualified staff at relatively low cost and existing R&D units, as well as improvement in institutional and legal environment (PAIIZ 2014).

Research Design

The research had three main stages: (1) review of academic research, (2) analysis of the reports, (3) pilot study, and small scale. The issues identified in the previous ITO/BPO research were incorporated into the questionnaire, secondary data sources, such as reports and statistics, were also analysed. The survey was developed in electronic format and its distribution has been supported by the Outsourcing Portal, the leading web-portal dedicated to the growing ITO/BPO industry in Poland. A link to the survey was emailed in a newsletter to the subscribers of the Outsourcing Portal and advertised on its website. From the 70 collected responses,

after removal of incomplete questionnaires or those with suspicious data, as well as those completed by non-ITO/BPO organisations and individuals, 15 completed questionnaires remained. This represents 3.2% of organisations operating at the data collection time (2015). The survey was conducted in English. The questionnaire included Likert-scale answers and a section requesting information about respondents and their companies (single, multiple answers and open text). The limitations of this exploratory study are reflected in a non-random and non-representative sample, but it presents the main structure of ITO/BPO. As for the size of companies examined, the majority (9) of 15 organisations surveyed employed up to 250 people, two employed between 251 and 1,000 and four over 2,501. Seven of 15 respondents held managerial positions, while the rest were employees/specialists. Among them, seven were from Finances and Accounting Departments, three from Operations, three from IT, two from Marketing and a single respondent from HR and from Manufacturing. In terms of the location of company headquarters, there were four from the UK, four from the USA, three from Germany, two from France and one each from Ireland and Poland. Most of the companies offered services related to transaction processing (13 of 15), query management, invoice (12), accounts, data and customer administration processing (11). Most of the surveyed companies operate for the EU market. This is in line with service exports statistics, which indicate that 70% of exports is to the EU market (Myszkowska 2014). The majority of respondents were from the financial sector.

Findings of the Pilot Survey

This section presents the findings. Firstly, motivations to outsource are listed; then the role of environmental factors in the selection of ITO/BPO destination is presented.

MOTIVATIONS TO OUTSOURCE

The first set of questions addressed the motivation; why, according to respondents, organisations made the decision to use companies located in Poland. Respondents were asked to rank 'motivating factors for the outsourcing of ITO/BPO in Poland' on a five-point Likert scale, from 'not important' via 'neutral/not applicable' to 'very important.' Results (table 2) indicate that the top four reasons are related to efficiency related drivers: cost reduction, followed by performance improvement, better cost con-

TABLE 2 Motivation for outsourcing in Poland

Motivating factor	Rank
Cost reduction	1
Improve business/process performance	2
Increase cost control and predictability	2
Ability to focus on core capabilities	3
Access to suppliers' expertise/skills	4
Eliminate a burdensome function or process from organisation	5
Drive innovation	6
Increase ability to adapt to change	7
Previous positive experience on the Polish market	8
Access new technology offered by suppliers	9
Reduce the number of own employees	10
Access to the European market	11
Answer to the IT skills shortage	12
Demonstrate success required for promotion	13
Access to the Polish market	14
Change organisational structure of a company	15

trol and focus on core capabilities. The fifth element was 'access to suppliers' expertise/skills.'

OUTSOURCING IN POLAND – SELECTION CRITERIA

The second set of questions is related to the selection criteria – why organisations decided to use Poland as an outsourcing destination. Respondents were asked to 'rank the importance of the following factors in selecting Poland as an ITO/BPO location,' and again the five-point Likert scale was used (from 'not important,' via 'neutral/not applicable' to 'very important'). Among the top five aspects, four are related to workforce: foreign languages, number of graduates, system of education, and, in second place, the 'labour cost' was listed. The fifth criterion was the level of ITO/BPO maturity (table 3).

Discussion

This section analyses and discusses key motivations for moving to Poland, comparing them against relevant ITO/BPO literature, public sector reports, statistics, as well as commercial publications.

TABLE 3 Main Criteria Considered during the Selection Process

Criteria for selection	Rank
Foreign languages spoken in a country	1
Labour costs	2
Number of graduates available per year	2
System of education	3
Level of maturity in IT/BP outsourcing	4
Number of IT and engineering graduates available per year	5
Work ethics and motivation among employees	6
EU membership	7
Political stability	8
Location	9
Property prices	10
Quality of IT and telecommunication infrastructure	11
Language barrier	12
Easy travel (by land or air)	13
Lack of time-zone differences	14
Cultural similarity	15
Transport infrastructure	16
Local work regulations	17
Government support (tax breaks)	18
Special economic zones	19
Crime and security	20
Availability of information about the country	21
Level of taxation	22
Level of corruption	23
Existing commercial relationships (trade, investments)	24

MOTIVATION FOR OFFSHORE OUTSOURCING IN POLAND

Firstly, the collation of ranks and weights given to key motivators identified in the empirical part of this study, compared to the two broad reviews of outsourcing literature on ITO (Lacity, Khan, and Willcocks 2009) and BPO (Lacity, Solomon, and Yan 2011) shall be presented in table 4.

Across nearly 30 years of academic research, as of the early 1990s, the offshoring decision-making process had mainly been based on cost-saving (Mihalache and Mihalache 2016). The top motivator for outsourc-

TABLE 4 Top Five Motivating Factors Driving IT and BP Outsourcing, Findings vs. Literature

Motivating factor	(1)	(2)	(3)	(4)	(3)
Cost reduction	1	1	0	1	0
Improve business/process performance	2	4	+2	4	+2
Increase cost control and predictability	3	13	+10	**	-
Ability to focus on core capabilities	4	2	+2	2	0
Access to suppliers' expertise/skills	5	3	-2	3	-2

NOTES Column headings are as follows: (1) ranked by respondents, (2) ITO literature (Lacity, Khan, and Willcocks 2009), (3) difference – factor ranked by respondents, (4) BPO literature (Lacity, Solomon, and Yan 2011). ** Not listed.

ing in Poland was listed as ‘cost reduction.’ Previous papers (Lacity, Khan, and Yan 2010; Lacity, Khan, and Willcocks 2009) concluded that cost reduction is a number one motivator in both ITO and BPO, and its importance was also confirmed in other studies (Juvonen 2009; Wiener, Vogel, and Amberg 2010). There have been instances of global sourcing activities transferring some operations to more developed and expensive countries, e.g. internet traffic exchange, but only in case of services with a high amount of automation or complexity (Alpar 2016). Most frequently though, the researchers tend to use the outsourcing concept to reflect the low-cost dimension of (re)location activities (Maskell et al. 2007).

The other two top motivating factors were also identified in the work by Lacity, Khan, and Willcocks (2009) although there was a difference in the order. ‘Increase cost control and predictability’ listed as 13th, here was listed much higher (3rd). ‘Access to suppliers’ expertise/skills’ was ranked lower (5th) than in other researchers’ reviews (Juvonen 2009; Lacity, Khan, and Willcocks 2009). Many times, companies decide to move processes offshore to access specialized skillset unavailable at home-location (Nachum and Zaheer 2005), because partners based in foreign locations can be particularly knowledgeable in certain activities (Jensen 2009). When the incumbent country environment becomes a pushing element, for instance when talents in science and engineering (S&E) are in short or expensive supply, the host country can act as a pull force, providing innovative solutions to challenges that firms face in home countries (UNCTAD 2005). In the context of this study, we can argue that although the Digital Economy and Society Index (DESI) of Poland is relatively low, as it currently holds the 23rd place, out of the 28 EU countries

(see <https://ec.europa.eu/digital-single-market/en/desi>), it assumes high scores for STEM graduates (Science, Technology, Engineering, Mathematics) and number of enrolled students (OECD 2015). Therefore, size and quality of Polish tech graduate's market is still attractive for investors.

Motivation to drive innovation was ranked surprisingly high (7th), considering the low position of Poland as a place for innovation. Even though there was constant growth in R&D (a 122.5% increase between 2002 and 2010), this level is below the EU average (2% for EU, 0.74% for Poland (PAIIZ 2014)). Likely, the real driver could be the availability of a highly skilled workforce, which can then create innovation, driven by foreign companies. It could be related to the fact that outsourcing in Poland is in the relatively early stages, so there is a limited number of established organisations which work in this area. This confirms the observations of Capik and Drahokoupil (2011) who pointed out that in overall, investors tend to utilise human resources rather than change innovation systems. At this point of the industry's development, this is probably not a key motivator for some firms, as they may be afraid of losing innovation capability through unprepared offshoring of high level, knowledge-intensive activities, acting under pressure of managerial attention (Mihalache et al. 2012). Moreover, R&D offshoring contracts are often more strategic in their aims and longer in duration, which applies more to the partner with whom a company has been cooperating already for many years (Stauss and Jedrassczyk 2008). Therefore, the offshore investments in CEE region may be shifting onto some more knowledge-intensive and innovation driven in the closer destinations.

Selection Criteria and Environmental Factors of Polish BPO/ITO Industry

This section discusses the importance of the role played by selection criteria and environmental factors in the relocation of ITO/BPO services. The following aspects are critically discussed workforce and its quality, labour costs, political and business environment, location, IT infrastructure, tax incentives and special economic zones (table 5), compared to the two significant reviews of outsourcing literature on BPO (Lacity, Solomon, and Yan 2011) and ITO (Lacity, Khan, and Willcocks 2009).

Top selection criteria and environmental factors influencing IT and BP Outsourcing, findings vs. literature (Lacity, Khan, and Willcocks 2009; Lacity, Solomon, and Yan 2011)

Workforce – the quality of workforce available in Poland was listed as

TABLE 5 Top Five Motivating Factors Driving IT and BP Outsourcing, Findings vs. Literature

Selection criteria	(1)	(2)	(3)	(4)	(3)
Workforce quality	*	3	-	2	-
Labour costs	2	1	-1	1	-1
Political and business environment	9	7	-2	9	0
Location	10	**	-	31	+21
IT infrastructure	12	**	-	29	+17
Tax and other government incentives	19	**	-	**	-

NOTES Column headings are as follows: (1) ranked by respondents, (2) ITO literature (Lacity, Khan, and Willcocks 2009), (3) difference – factor ranked by respondents, (4) BPO literature (Lacity, Solomon, and Yan 2011). * 1, 3, 4, 6, 7 (related aspects), ** not listed.

a driving factor for the majority of respondents. Those included issues in six of the top ten criteria, namely:

- Foreign languages spoken in a country (1st)
- Number of graduates available per year (3rd)
- System of education (4th)
- Number of IT and engineering graduates available per year (6th)
- Work ethics and motivation among employees (7th)

The quality of workforce has also been highly valued in the literature review of ITO: 3rd position, and BPO: 2nd position (Lacity, Khan, and Willcocks 2009; Lacity, Solomon, and Yan 2011). This also partly confirms the work of Micek (2015) who listed the availability of a well-educated workforce as a leading factor, as well as Capik and Drahoukupil (2011), who listed them as the third leading motivator. The importance of education and its role in attracting investments is also in line with other works, pointing out that human capital is a strong advantage of the entire CEE region (Association of Business Services Leaders 2017). As pointed out by Sass and Fifekova (2011), the region has *knowledge advantage* when compared to other, lower cost, destinations. The role of education goes beyond practical skills; it also allows transfer of knowledge, habits and shared values (Assar, Amrani, and Watson 2010). However, it should also be noted that IT and codification of knowledge enables the transfer of knowledge between organisations and regions (Maskell and Malmberg 1999), providing Poland with the knowledge which was not present in local companies. Moreover, there are already cases where

knowledge is created locally (Filippov 2014). However, to attract higher value and more advanced services, there is a constant need for a highly skilled workforce (Hardy, Micek, and Capik 2011). This indicates an important role of IT-related and language education as the driver of country level and regional development. The availability of graduates from the engineering sciences, such as mathematics and IT was listed as an advantage (6th) together with language skills (1st). As we can see from the responses, languages, numbers of graduates, including graduates in engineering, were all ranked high in the Polish context. Such drivers are confirmed as leading factors by reports such as those prepared by the Association of Business Service Leaders (2017). However, Manning (2014) indicated that there were communication problems between US and Polish companies. As Gál (2014) pointed out, the CEE region attracts organisations offering talented and skilled labour, so the low wages are not the main driver. Competition based on a skilled workforce was made possible due to changes in the education system. OECD (2016a) report indicated, the strong growth in the number of adults who attained a tertiary degree, from 17% in 2005 to 28% in 2015 (OECD 2016). Polish university sector is also growing, with around 1 665 300 students in 2015, which had direct impact of the development of the ITO/BPO industry (see <http://ec.europa.eu/eurostat>). Another factor which likely influences the quality of labour is obligatory exams in mathematics for all secondary school leavers (PAIIZ 2010). It is likely that a good quality educated workforce will be available in the near future, since the PISA report (OECD 2012), which measured skills among 15-year old children, listed Poland at 14th place in the world in mathematics, statistically significantly above the OECD average, with similar results achieved in reading and science. Countering this, however, Poland has an ageing population (see <http://ec.europa.eu/eurostat>).

Labour costs – respondents listed labour costs as the second most important factor, which is also reflected in the analysed ITO and BPO literature review, being the top important factor (Lacity, Khan, and Willcocks 2009; Lacity, Solomon, and Yan 2011). The same in the work of Capik and Drahokoupil (2011), who pointed out that labour costs are the leading issue, and elaborated on the linkages between quality, availability and costs. Based on the responses we can observe that labour costs, together with the highly valued workforce quality, point on an actual value of workforce as a composite notion: the balance between quality of workforce, labour costs and work ethics. The investors are aiming to get good value

for money and rank it as a leading factor. This was in line with Sass and Fifekova (2011), as well as Guzik and Micek (2008), who mentioned the mix of cost and quality as one of most influential aspects for the V4/CEE region. Micek (2008) listed two leading issues for foreign software development in Poland that are cost of service and availability of skilled graduates, which was also observed by Wiener, Vogel, and Amberg (2010) in an international context. Guzik and Micek (2008) also found that for the Polish IT subcontracting sector, the skillset and expertise was a leading factor, not the low cost (without specifying what costs are included). They have also pointed out that in the CEE region, it is possible to achieve similar productivity as in Western Europe, but at lower cost (due to differences in salaries). Nevertheless there are already cases where costs in Poland are getting close to those in the West, so the quality of workforce needs to compensate for this cost factor (Guzik and Micek 2008). Monthly Salary levels in Warsaw (per FTE) is estimated at the level of 950–4940 EUR gross/month in ITO and 900–4730 EUR gross/month in BPO (Association of Business Services Leaders 2017). However, there are differences in salary levels between cities and regions (Micek 2008). For instance, the values in Lodz are at the level of 760–4690 EUR gross/month in ITO and 760–4260 EUR gross/month in BPO (Association of Business Services Leaders 2017). According to the 2013 salary report (Hays 2013), the monthly salary for .NET/C# Developer was between 9000 and 12000 PLN gross, and financial analysts between 7000 and 9000 PLN gross (Hays 2017).

Political and business environment – in this work, respondents ranked political stability and EU membership highly (8th and 9th place respectively), just behind the factors related to workforce. It is similar to the referenced literature review of ITO and BPO, where it has assumed 9th position (Lacity, Khan, and Willcocks 2009; Lacity, Solomon, and Yan 2011). Importance of political stability and regulatory frameworks was confirmed by Hansen, Mena, and Aktas (2018). In the paper of Sass and Fifekova (2011), this factor was mentioned by 50% of respondents from V4 countries. The importance of political (and fiscal) stability, together with EU membership was also listed as important by Guzik and Micek (2008), importance of the EU accession for FDI flows was also stressed by Medve-Bálint (2014), as in fact in many cases decisions to enter the market are based on cultural linkages, not no cost-benefit calculations. Additionally, Poland can be considered, due to its social structure, close to the ‘terrorism-free zone’ (Mareš 2011), unlike some of other regions. For

Poland, both NATO and EU membership increased stability, however the situation in Ukraine remains unresolved (although from the other hand, such situation reduces the risk that companies will relocate from Poland to Russia or Ukraine). However, the time of data collection came prior to, and thus could not account for, the increasing migration problems in the EU, so as the Brexit decision in the United Kingdom.

Location – in contrast to Capik and Drahokoupil (2011) who concluded that access and proximity to Western markets was one of the leading factors, location was ranked by respondents at 10th place, which was also of lower importance for the V4 countries. In the analysed BPO literature review, it has been listed on 31th place that is much lower (Lacity, Solomon, and Yan 2011). Sass and Fifekova (2011) and Guzik and Micek (2008) found that it was in the last of five analysed factors. Similarly, Micek (2008) listed proximity to customers as the fifth leading issue. In contrast, Gál (2014) pointed out that geographical proximity was among the highest ranked aspects. While location was important, surprisingly it was not among top factors, contrary to some earlier findings. This can be related to the fact that most services are offered online, which reduces transportation time and costs. Also, since most customers were located in the EU, the lack of time-zone differences was not highly ranked (15th).

IT infrastructure – similar to location, IT and telecommunication infrastructure was not listed as a top issue in research by Sass and Fifekova (2011), but over 50% of respondents mentioned this factor (12th place) in the present study, as well as the BPO literature (Lacity, Solomon, and Yan 2011), where it has assumed 29th position. This could be due to recent improvements and large investments in infrastructure, often supported from EU funds, which allowed the reduction of the gap between Western EU countries and Poland in this area. Poland demonstrated a balanced digital development path (Cruz-Jesus, Oliveira, and Bacao 2012), however it is not classified as a ‘digital leader’ in ICT.

Tax incentives and special economic zones – the findings confirmed those reported by Sass and Fifekova (2011), who suggested that among companies, government incentives were not listed as key issues (ranked 19th and 20th). This is in line with Medve-Bálint (2014) who pointed out that the necessity of such incentives was based on the perception of local government; as a result some of the reductions are not in line with the EU recommendations for free competition. Despite this finding there are various mechanisms and incentives available for investors, for example,

special economic zones, with corporate tax reductions or exceptions (Association of Business Services Leaders 2017).

Conclusions and Recommendations

The paper addressed the dynamic growth of service offshoring sector in Poland and the entire CEE region, which has been observed in the past decade. The results showed that the strongest advantage of Poland as off-shore destination is the value of its workforce, which combines: low costs (but still higher than in some Asian locations), language spoken, high number of graduates, good level of education (including engineering sciences), and work ethics. What was surprising, considering the scale of such initiatives, was that government incentives, such as tax reductions, were not highly ranked. To maintain its competitive attractiveness, the region needs to remain focus on issues such as quality of labour and level of accumulated knowledge (Collins and Grimes 2011). Further developments should allow not only for transferring knowledge into the region, but also for its creation and dissemination, especially since the CEE region has a history of earlier technological advances (Filippov 2014). The findings show that motivations for service outsourcing are not much different to those already reported in the literature, such as cost reduction and increased cost control, drive to improve processes and focus on core capabilities, with the exception of 'Increase cost control and predictability', which was listed much higher than in the work of Lacity, Khan, and Willcocks (2009).

From the literature point of view, Poland and other v4 countries, are almost unexplored in the research on modern offshored services of ITO/BPO type, therefore academic debate is unable to follow the changes in business practices, nor drive such changes. There are broad opportunities for both quantitative and qualitative work for comparative studies (within and across the regions and sectors), and this can be done with the cooperation of Polish academics. Another stream could be the work focused on education in Poland, as it drives regional advantage. Topics which need further investigation include the impact of ITO/BPO on employment and foreign exchange reserves (Walsham and Sahay 2006), analysis of emerging regional specialisation among urban centres and regions (Maskell and Malmberg 1999) and development of secondary regions and cities as ITO/BPO hubs. Moreover, the limitation of this study was that the data was gathered from a selected number of actors. For achieving broader point of view, further research on the more represen-

tative sample of managers is recommended to compare and carefully support the conclusions based on it. In the past decade, the research on sustainable entrepreneurship has become one of the most vibrant sub-domains that reflects the surge of solutions to social and environmental problems (Stubbs 2017). Therefore, the authors would like to recommend further study on how assumed microeconomic actions applied on the companies' level in the service offshoring industry may support the global pillars of sustainable development.

As for the recommendations for practice and policy, the authors would first like to address the role of ITO/BPO-driven education. The current system needs to be investigated, and compared with foreign-based solutions, to capture positive and negative lessons. The country level policy needs to understand and respond to the ITO/BPO industry's demand, by investing in the life-long education in foreign languages and the areas of 'hard' subjects such as math, coding and engineering. The success of a knowledge-intensive R&D offshoring, depends very much of national culture enhancing innovation (Hahn and Bunyaratavej 2010). Therefore, the authorities of Poland and the entire CEE region should respond to this demand by offering more investor-friendly incentives, supporting and facilitating the innovative, knowledge-intensive operations. Such initiatives need to go beyond the largest urban/academic centres and could be co-funded by the state, such as putting extra resources toward education in smaller urban centres – attracting investors by lower infrastructure and average salary costs, at the same time providing quality of workforce comparable to large agglomerations. It is necessary to avoid unsustainable regional development and polarisation between largest agglomerations and rest of the country. As large agglomerations, due to its fast development pace attract talent at expense of smaller urban centres. Increasing R&D capabilities also appears to be a necessity, to avoid being locked into a dependence upon foreign knowledge and technologies, which will suppress further development, especially capital and knowledge accumulation among local companies. In addition, Poland, which has already partially done this, should market itself as a high value, skilled location, which is not competing merely in costs, but offers high value for reasonable price in a stable political environment, climbing up the global value chain, and ready to deliver more complex services. This would allow reducing risk of reshoring ITO/BPO centres after increase in costs (mainly labour costs). However, at present, the structure of services exports, comparing to other markets, suggests that Poland is still ready for

further ITO/BPO investments. Even though this might put pressure on salaries, especially in prime locations, as was already observed by Micek (2008), it could be reduced by the development of secondary locations, compensated for by further investments in the level of workforce education, as well as close cooperation between companies and educational establishments. Another important factor strengthening the competitiveness of the region shall be the centralization, sorting and robotics automation of processes (Kedziora and Kiviranta 2018). Such initiatives are lately growing on popularity among substantial offshore players, aiming for additional facilitation of operations, creating best practices at the source and cultural work-environment platform. Such initiatives should be considered by more and more offshore delivery centres in the region.

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