Konstantynova, Anastasiia; Lehmann, Tine

Conference Paper

Cluster activities in different institutional environments. Case studies of ICT-Clusters from Austria, Germany, Ukraine and Serbia

56th Congress of the European Regional Science Association: "Cities & Regions: Smart, Sustainable, Inclusive?", 23-26 August 2016, Vienna, Austria

Provided in Cooperation with:
European Regional Science Association (ERSA)

Paper title: Cluster activities in different institutional environments. Case studies of ICT-Clusters from Austria, Germany, Ukraine and Serbia

Authors: Anastasiia Konstantynova; Tine Lehmann

Presented at: 56th ERSA Congress, 23 to 27 August 2016, Vienna, Austria

- *Central theme: Cities & Regions: Smart, Sustainable, Inclusive?*
- *General theme: G_I. Institutional factors in regional and urban development*
- *Keywords: clusters, cluster policy, cluster association, institutions, ICT*
- *JEL codes: R11, R58; O18, M21*

Abstract:

During the latest decades cluster associations have been often stabled by public and/ or privates support aiming to facilitate cluster development. In the process of their establishment cluster associations have launched a number of activities and services aiming to increase the competitiveness, innovation rates, and productivities of their members. At the same time it appears that many clusters apply very distinct activity bundles to reach their objective. However, the institutional context differs between countries. This paper questions ***how these activity bundles are influenced by different sets of institutional framework conditions*** and *is proposing a framework for the explorative analysis of cluster activity bundles in specific institutional frameworks. Moreover, along the framework, it presented detail review of cluster associations and their activities in different ICT clusters, the development of which is central for regional advanced industrial transformation in the framework of regional specialization and Industrial Renaissance.*

Cluster activities in different institutional environments. Case studies of ICT-Clusters from Austria, Germany, Ukraine and Serbia

1. Introduction and research objectives

In recent decades' industrial clusters and agglomerations were recognized as drivers of regional and often national economic growth and competitiveness. Based on this cluster policy has been widely used to spur economic change, especially on the sub-national level.

The public support to cluster development was widely done following the observed examples in the United States aiming to follow their success stories. Most commonly applied cluster policy approach composed of cluster mapping, establishment of organizations (labelled as cluster initiative/ association) in respective clusters through public-private support of these organizations´ and companies´ activities. However, the implementation of blue-printed cluster policy did not always lead to positive paths of cluster development due to the negligence of country / region specific institutional frameworks.

This paper aims to fill this void, by exploring selected cases of cluster associations and analyze **if and how their activities are influenced by different sets of institutional framework conditions**. Information and communication technologies (ICT) clusters and their associations in European Union (EU) and Non-EU countries are taken as cases for the analysis.

The next section of this paper presents a brief review of the main literature on clusters, cluster organizations, and institutional environments. For the scope of this paper, we refrain form an extensive literature review, but refer to the existing ones. Section three details our research framework, followed by our methodology. Section five provides extensive information on our case studies and a comparative case analysis. Section six concludes the paper with results, limitations and ideas for further research.

2. Literature Review

Cluster

Among numerous contributions to the definition of cluster concept, made by different researchers, Michael Porter's (1998a, 1998b) notion of industrial or business clusters (formulated as: "clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions" (Porter, 1998a, p. 197) is considered to be one of the most influential in terms of

popularizing the cluster concept (Asheim et al. 2006; Martin and Sunley 2002) and the one referred to in this paper. For a detailed discussion on the definition of clusters and different type of clusters we recommend Rosenfeld (1997).

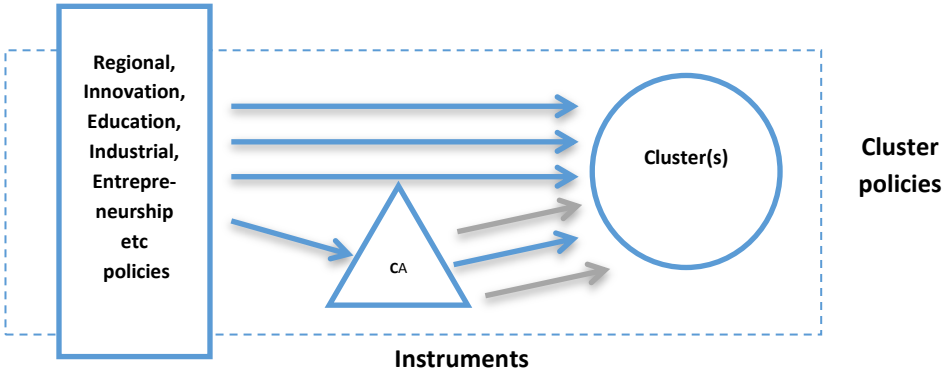
An increasing body of literature (Nadabán and Berde 2009; Delgado, Porter, & Stern, 2010; Feldman & Francis, 2004; Porter, 1998, 2000; Saxenian, 1996; Tallman, 2004) demonstrates that clusters principally lead to an increase in **production, innovation rates and new business opportunities**. Clusters can be of different size, character and can exist in different types of industries and sectors, e.g. aerospace, restaurant, tourism, retail, etc. (Porter, 1998b). Enright, (2003) provides a detailed review of the existing cluster literature and Provan, Fish, and Sydow (2007) provide a review on interorganizational networks in general.

Cluster associations and their activities

Since the development of the argument that clusters have a positive influence on the territorial development, policy makers have actively applied different instruments for their support: cluster policy. One of the possible actions, which can be used within cluster policies, is the establishment of cluster initiative or association (CA). Ahedo (2004) analyzed the industrial cluster policy in the Basque Region and demonstrates it´s influence on establishing cluster associations. These organizations build particular interest for our further research. In reference to World Bank (2009) cluster association are seen as a platform for support of a specific cluster, and are coordinated from either local/ regional/ national private or/ and public side.

The majority of cluster associations have very similar objectives, which primarily center on issues such as strengthening cooperation and common vision among actors working in related economic activities (Lublinski, 2003; Porter, 1998a). De La Maza-Y-Aramburu, Vendrell-Herrero, and Wilson, (2012) discuss the value of cluster associations in more detail.

Graph 1 Positioning cluster association within cluster policies



Source: Konstantynova and Wilson (2014)

Several authors have discussed cluster activities or cluster services. Jungwirth, Grundgreif, and Müller (2011) demonstrate activities by the Bavarian cluster initiatives, Taylor, McRae-Williams, and Lowe (2007) discuss determinants of cluster activities in Australian tourism clusters, and Gretzinger and Royer (2014) analyzed relational resources in value adding webs in Danish firm cluster. The number of activities implemented by cluster associations can be numerous, which results in typological difference. While as the base for our case studies we apply the typology proposed in joined publication of Interreg IIIC, 2006 (p. 12), there are also other ones, e.g. from Solvell, Ketels and Lindqvist (2005) in The Cluster Initiative Greenbook. The details are presented in Table 1 below.

Table 1 Typologies for grouping activities of cluster associations

Interreg IIIC (2006)	Solvell et al. (2005)
•Information and Communication •Training and Qualification •Co-operation •Marketing and PR •Internationalization	•Research and networking; •Cluster expansion; •Innovation and technology; •Education and training; •Commercial co-operation; and •Policy action.

Source: Authors´ development based on indicated sources

While introducing the activities, we refer to both types, ones provided by the association for their cluster members as well as in general to all ICT cluster related-companies. At the same time, we also state that there are other type of cluster activities, which are done by CAs to promote their association and the cluster.

Institutional environment

Cluster associations, just like any other governance structure, are set within a certain institutional environment. The institutional environment is comprised of formal and informal institutions that shape and constrain human interaction. Formal institutions are commonly regarded as laws, rules and policies whereas informal institutions refer to norms, morals and culture (North, 2005; Williamson, 1996). Concerning clusters, some formal institutions have an obvious influence on clusters, namely cluster policies. Kiese (2008) or Hospers (2002), see cluster policy as all state measures towards the support and development of clusters, whereas Ketels (2011, cited in (Benner, 2012, p. 84)) developed a broader view and says that cluster policies contain not only governmental but also in collaboration with activities of private actors that are oriented to stimulate the cluster's efficiency. Enright (2003) demonstrated five levels of political influences on clusters, from non-existent cluster policy via catalytic and supportive to directive and interventionist (Enright, 2003). Cluster policies and their potential influences on clusters have been widely researched (Altenburg, 1999; Aziz & Norhashim, 2008; Cornett & Ingstrup, 2010; Hospers, Desrochers, & Sautet, 2009; Rosenfeld, 2005; Sternberg, Kiese, & Stockinger, 2010).

However, there are further formal institutions that might influence cluster activities. Unfortunately, cluster literature largely neglected the potential influences of institutional factors. Molina-Morales, López-Navarro, and Guía-Julve (2002) discuss mainly theoretically the influence of local institutions on industrial districts. Gallardo and Stich (2013) as well as Miller (2006) are among the few authors to include further institutional factors in their model, such as tax structures, but could not demonstrate significant influences. Schrammel (2013, 2014) discusses institutional voids in transition economies as a motivating factor for clusters to adapt their activities. Müller and Jungwirth (2011, 2016) include contextual factors, such as planning security, in their analysis on cluster performance and can demonstrate their influence on goal attainment. Lehmann and Benner (2015) discuss the influence of institutional factors on the design of cluster policy and Lehmann and Jungwirth (2016) highlight differences in cluster activities between transition and non-transition economies.

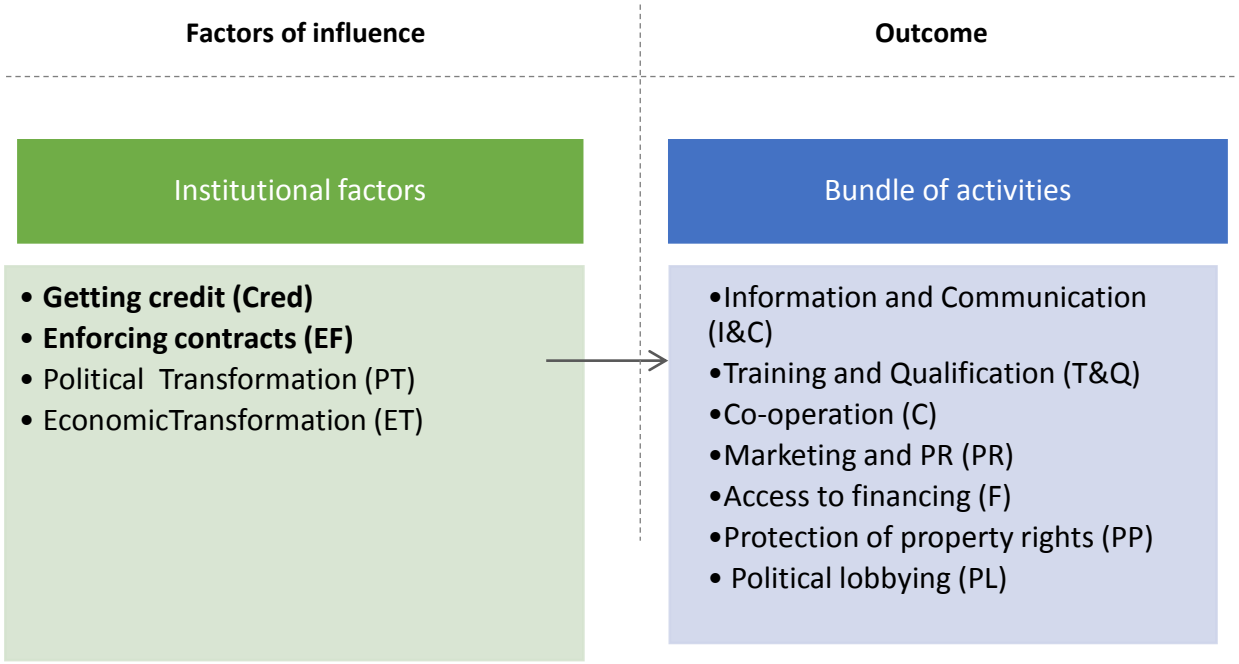
Our research will add to the existing limited literature on the influence of contextual – specifically institutional – factors on cluster activities.

3. Research framework

Concluding from the review we state that clusters develop differing set of activity bundles with the aim of contributing to the overall policy objectives. These are generally related to an increase in productiveness and innovativeness of individual firms and the region overall.

Our research question is aimed to explore how activities bundle of cluster associations are influenced by different institutional environments. Hence, with our research we target to (1) demonstrate in depth case ICT cluster case studies and (2) classify applied cluster activities in different bundles of activities under different institutional constrains. See Graph 2. To do so, we choose clusters in institutional environments with different development status.

Graph 2 Research framework



Source: Authors´ development

In more detail the theoretical framework is composed of institutional influence factors, which influence the dependent outcome: bundle of cluster association activities.

As proxies defined to **measure institutional constraints** we rely on internationally available data from the World Bank's Doing Business Reports and the Bertelsmann Transformation Index. Lower Rankings in the World Banks Doing Business Report on "getting credit", and "enforcing contracts" points to the existence of voids in the institutional framework

(Schrammel, 2013; 2014). We assume that this will have a direct influence on the design of cluster activity bundles. Furthermore, we expand indicators for institutional factor from the Bertelsmann Foundation's Transformation index, aiming to get a clearer picture of the formal institutional environment. The rankings on political and economic transformation also indicate the completeness of the institutional environment. Germany and Austria are not listed in the Transformation Index as they are considered to be readily transformed.

We propose, that the institutional environment has a direct influence on the choice of cluster activity bundles. As we follow a qualitative approach, be prefer to work with propositions instead of hypothesis (Yin, 2009), which are the following:

Proposition 1: clusters of countries which rank low in political transformation will tend to offer political lobbying activities.

Proposition 2: cluster situated in countries that rank low in contract enforcement or access to credit, will offer activities that remedy such deficiencies in the institutional environment.

The bundle of activities we categories with reference to Interreg IIIC (2006) by defining 5 types of cluster activities: Information and Communication (I&C), Training and Qualification (T&Q), Co-operation (C), Marketing and PR (PR) and joining them with the activities define by Schrammel (2014) in the research work on the performance of cluster associations in different institutional contexts. These activities primarily target the development of cluster and also may increase the effectives of association itself, which in turn also leads to cluster development.

4. Methodology

Referring to Yin (2009) and remarks of Lijphart (1971), Creswell (2003) we have selected to follow an exploratory, **qualitative approach** by the application of **multiple (four) case study method**. Within multiple case study design each case study is a replication of the conditions questioned within the framework further presented by us. Methodologically we closely follow the logic of the multiple case study expressed by Yin (2009). This means that after the developed theory, case selection and designing the data collection protocol, we conducted the first and then the next case study. Then we write in-depth individual case report for each case study independently and simultaneously while drawing cross-case conclusion produced key research findings. Finally, within each case study both quantitative and qualitative tools for data analysis were applied. The case data is based on qualitative interviews with different

actors of the clusters, an in-depth analysis of the cluster documents and websites, as well as reports and secondary data. The interviews were done by the two authors independently. Both conducted semi-structured interviews.

The selected clusters and cluster associations have been taken within the regional framework of operation, which in our case was seen as an administrative territory, below the state level and is defined as "Nomenclature des unités territoriales statistiques" (NUTS) by European Council for Statistics in 1980. For Austria and Germany its NUTS 2, 3 respectively, in Ukraine and Serbia its regional administrative level defined by national state classification system. All clusters also equally represent two kinds of institutional setting: EU and non- EU.

Information and communication cluster (ICT) was chosen due to availability of data for observation, which include the existence of cluster and the policy activities related to its development. Further to this, in all of the selected regions ICT cluster was considered strategic one form the government/ public side. Finally and overall the role of information and communication technologies is increasing growing in the latest years, in particular its contribution to upgrade the technological capacities of numerous industries, referred as Industry 4.0.

The data for case studies was taken both from primary and secondary sources: semi-structured interviews combined with dataset from online statistical databases and rounded by information extracted from documents´ reviews. In our research we employ the "cross-case synthesis" (Yin 2003, p. 133) technique, which is considered to be the most suitable in the case of multiple case studies. Under this technique each study is treated independently.

The development of arguments within each of the cases was processed by means of different techniques, such as: qualitative: typology setting, which was applied to identify and group activity bundles of cluster associations in respective institutional settings.

5. The results

Main findings from the case studies

Following the developed theoretical framework the case study of the cluster associations and their activity bundles has been done in 3 parts: 1) institutional settings, 2) cluster association background and 3) bundle of cluster activities. The main findings from each case individually are presented in the Table 2.

Table 2 Main findings from case studies

Parts/ Case study	Germany (EU)	Austria (EU)	Ukraine (non-EU)	Serbia (non-EU)
I. Institutional context				
Political structure	Federal state with centralized tax system	Federal state with centralized tax system	Centralized governance system	Centralized governance system, but autonomous region
Institutional factors [1]				
Getting credit (Cred) [2]	24	52	17	52
Enforcing contracts (EF) [3]	11	6	98	73
Political Transformation (PT) [4]	-	-	58 (6,10 points)	21 (7,95 points)
Economic Transformation (ET) [5]	-	-	62 (5,68 points)	29 (7,07 points)
II. Cluster association				
Established	2012	2013	2011	2010
Rational for establishment/ mission or objectives	Enhance the economic development of the region and the market potential of its member companies	Desire to broaden regional and international opportunities for the IT companies and research centers. Goals: 1. a competence hub for	Creating the city with suitable conditions attracting national and international IT companies and experts Goals: 1. make Lviv as IT center	To create a strong positive influence on social and business environment. Goals: 1. create platform for cooperation and

[1] The institutional factors are given in international comparable ranks (with Rank 1 as the best).
[2] Data from 2015. http://www.doingbusiness.org.
[3] Data from 2015. http://www.doingbusiness.org.
[4] Data from 2014. http://www.bti-project.de.
[5] Data from 2014. http://www.bti-project.de.

Parts/ Case study	Germany (EU)	Austria (EU)	Ukraine (non-EU)	Serbia (non-EU)
		digitization in all branches. 2. a driver of visibility for Upper Austria as a digital region at all levels.	2. development of eco-business system 3. development of IT system in Ukraine	provides a portfolio of services 2. building links with the education system an the creation of a Cluster Academy 3. building tighter bonds in the triple helix Business –Education – Government.
Thematic focus	Software sector of ICT	Software sector of ICT	Software sector of ICT	Software sector of ICT
Scale of cluster	28 companies	80-90 companies	45 companies	33 companies
Size of companies	Micro or small companies	Micro and small companies with some global players	Micro or small companies	Micro or small companies; a few are subsidiaries of MNEs
Cluster origin	Founded as a bottom-up initiative at an IT fair in 2012. No governmental support	Since 1990s developed from the creation of an impulse center / technological park: Softwarepark Hagenberg. The establishment has been promoted by Government of Upper Austria via allocation of the Research Institute for Symbolic Computation (RISC) and Professor of Computer Mathematics at Johannes Kepler University due to space shortage to the nearby city of Hagenberg.	The origin of cluster goes back to 2008, when with support Effective Governance Foundation the study on 2 regions: Lviv and Donetsk economy and cluster analysis was done by Monitor Group with later on design of cluster implementation strategy in selected regions; through this study IT cluster in Lviv has been identified and proposed to be supported setting the basis for establishment of the association	Founded in 2010 as a bottom-up initiative but supported by international development donors and the Serbian Government.

Parts/ Case study	Germany (EU)	Austria (EU)	Ukraine (non-EU)	Serbia (non-EU)
Organizational form of cluster	Registered as an association	Cluster association as a juridical institution, which was formed within Clusterland Upper Austria Ltd. (Clusterland Oberösterreich GmbH), which is since 2015 is integrated in a bigger institutional framework: Business Upper Austria (OÖ Wirtschaftsagentur GmbH)	Cluster association as a juridical institution, named Lviv IT Cluster	Registered as a business association
Organizational structure (overall)	The cluster is headed by the cluster manager who works on a volunteer basis	The institution has horizontal structure, meaning, implementation of activities is done by project managers and are chaired by CEO;	The institution has horizontal and clear structure; Implementation of activities is done by project managers and are chaired by CEO; The cluster is assisted by the team of project managers, PR and communication experts	The cluster is headed by the cluster manager. The cluster manager is supported by a Project Office and an Assistant
Financing	Membership fee: 100.-€ /year Sponsors: 1000€/year	Membership-fee, additional payment for some of the activities • 345,00 EUR for 1 - 9 e.. • 510,00 EUR for 10 - 49 e. • 685,00 EUR for 50 - 249 e. • 1.360,00 EUR more 250 e.	Membership-fee, additional payment for some of the activities	Membership fee of 100€/Month per Company. Several EU Projects
III. Bundle of activities (the description of each activity is given in the tables listed in **¡Error! No se encuentra el origen de la referencia.**)				
Information & Communication	• Updated Website with information on events • IT Atlas with information on all	• IT Summit (conference); • Database & Map (online free accessible); • Info-sharing via IT	• IT Arena (conference); • Cluster visits national & international; • IT Club (networking,	• Regular study on ICT in Serbia • Updated Website with information on

Parts/ Case study	Germany (EU)	Austria (EU)	Ukraine (non-EU)	Serbia (non-EU)
	companies	cluster webpage;	etc.); • IT Research (sector/ cluster market data and trends reports); • IT Future (attracting new generation to the industry)	projects, calls, and events • Blog
Training and Qualification	• IT surf camp (conference character)	• Trainings, master classes on luster cooperation projects; • Micro SMEs sector specific trainings	• IT Expert (Organization of mainly learning and knowledge raising events); • Lviv CSIT (competition, fellowships and prizes)	• Cluster Academy (Providing education according to the needs of the members) • Conferences
Co-operation	• IT surf camp (conference character) • Regular network evenings • Coworking space	• IT Summit • Info-sharing via IT cluster webpage; • Cluster cooperation projects; • Working Groups to develop projects; • Smart Future (link companies with other clusters); • Industry 4.0 (cooperation with mechatronic cluster)	• IT Arena (B2B); • Cluster visits national / international; • IT Club (networking);	• Cluster Project office to support joint project developments • Cooperation with other clusters
Marketing and PR	• Support to regional fair • Publication • Presentation at fairs	• IT Summit; • Database & Map; • Info-sharing via IT cluster webpage;	• IT Arena; • Cluster visits; • IT Club; • IT Research; • Overall marketing;	• Cluster visits • Publication • Presentation at fairs

Parts/ Case study	Germany (EU)	Austria (EU)	Ukraine (non-EU)	Serbia (non-EU)
			• Webpage	
Access to financing	-	• Sponsoring • Discounts • Cluster cooperation projects		• Cluster Project office to support joint project developments
Protection of property rights	-			• Internal court of honor to ensure contract enforcement between members
Political lobbying	-		• Cluster manager is politically well connected and established, especially with local administration (office in the same building)	• Cluster manager is politically well connected and established • Regular study on needs in the ICT in Serbia • Development of (internal) standards

Source: Authors' development

The table provided a general overview on the institutional context of cluster associations, their background and organizational structure and has listed the activity services delivered by the associations. The next section drives the main conclusions based on the cross-case synthesis of the similarities and differences across cluster associations.

Comparative findings from cross-case synthesis

In conclusion, this paper has proposed the framework for the descriptive and explorative analysis of cluster activity bundles in specific institutional frameworks. Moreover, along the framework, it presented detail review of cluster associations and their activities in different ICT clusters, the development of which is central for regional advanced industrial transformation in the framework of regional specialization and Industrial Renaissance.

Table 3 summarizes via cross case synthesis the institutional conditions and the dominant activity bundles per case study reflecting the main findings. The table indicates that there are several potential voids in the institutional environment of Serbia and Ukraine in contrast to Germany and Austria. Interestingly financial institutional voids do not seem to be an issue in Ukraine but therefore in Austria. The low ranks in contract enforcement of Serbia and Ukraine indicate an institutional void in the product market (Mair & Marti, 2009), with potential negative effects on employment and formal business cooperation. The transformation indices reflect Serbia's advancement as an EU candidate country in contrast to Ukraine.

Table 3 Cross-case synthesis of institutional factors and activity bundles

	EU countries (Germany, Austria)	**Non-EU countries (Ukraine, Serbia)**
Institutional context		
Getting credit (Cred) [6]	Germany high, Austria low	Ukraine high, Serbia low
Enforcing contracts (EF) [7]	Both high	Both Low
Political Transformation (PT)[8]	Both transformed	Ukraine low, Serbia medium
Economic Transformation (ET) [9]	Both transformed	Ukraine low, Serbia medium
Bundles of activities		
Information and communication	In both medium	In both high
Training and Qualification	Austria	Serbia
Cooperation	In both high	In both medium
Marketing & PR	In both low	In both high
Access to financing	Germany: none Austria: many	Ukraine: none Serbia: many
Protection of property rights	Both none	Serbia: some; Ukraine: none

[6] Data from 2015. http://www.doingbusiness.org.
[7] Data from 2015. http://www.doingbusiness.org.
[8] Data from 2014. http://www.bti-project.de.
[9] Data from 2014. http://www.bti-project.de.

	EU countries (Germany, Austria)	Non-EU countries (Ukraine, Serbia)
Political lobbying	Both none	Serbia: some; Ukraine:some

Source: Authors' development

Among the main conclusion we can state that, different patterns among activity bundles have been observed in cluster associations operating in various institutional environments (EU and non-EU countries/ regions).

As example in Lviv IT cluster more activities are addressing such areas as information and communication, as well as marketing and PR. At the same time, as the cluster grows on its maturity, more attention is being drowned to addressing training and availability of qualified human resources. This is seen via means of tightening the cooperation with the local universities via specialized programs. Meanwhile in Upper Austria, the cluster activities deal more with qualification raising and cooperation. In contrast, the Serbian cluster, provides a wide array of services clearly targeting institutional voids in contract enforcement and political lobbying. The major activities are the cluster academy and the cluster internal court of honor. The German cluster focuses on fostering cooperation among actors and information provision, as institutional voids in contract enforcement and human capital are not prevailing.

Coming back to our proposition we can state the following:

Proposition 1: clusters of countries which rank low in political transformation will tend to offer political lobbying activities.

The cases show indication for an approval of the proposition. The clusters of Germany and Austria do not proceed in political lobbying activities, whereas the Serbian example is quite active in the field. The same situation is shown for Ukraine, where along the activities related to technical support to companies, also work toward political lobbying is done. Meanwhile, this political lobbying in Ukraine is also mixed with overall active PR and marketing activities.

Proposition 2: cluster situated in countries that rank low in contract enforcement or access to credit, will offer activities that remedy such deficiencies in the institutional environment.

The cases from Austria and Serbia demonstrate very clearly that the cluster associations recognised the institutional voids in access to financing and hence developed services that

address these issues. The clusters of Germany and Ukraine, in contrast, do not offer such activity bundles as the institutional environment offers these services. Contract enforcement is low in both non-EU countries. The Serbian cluster developed an activity to counter that issue for its members. This allows the cluster to take a relatively high membership fee, as the cluster members highly value this activity. In Ukraine, the issue of legislative disputes is relevant for the ICT companies, nevertheless, the cluster association are not handling this issues directly due to capacity issues and more focus on education and technical cluster upgrade. Further to this, many software developers or companies are working for international companies, which take over the property rights handling the disputes.

We claim that the difference is due to positioning of the cluster in different institutional context. While in non-EU country the cluster issues are still not well known and applied, more activities are done aiming to raise awareness, meanwhile in EU countries, the utilization of cluster approach as a mean to foster regional development has been already actively promoted since the middle of the1990s, therefore resulting in utilization of other set of activities.

6. Final conclusions

In this paper two main findings have been reached. Our first aim was to demonstrate in-depth ICT case studies. We have explored four ICT clusters in very different institutional environment. We believe that this descriptive approach is useful for clusters of related industries and policy makers alike. Our second aim was to classify applied cluster activities in different bundles of activities under different institutional constrains. The cross-case synthesis has shown that the institutional variables void the character of applied cluster association activity bundles, which is related to overall territorial context, patterns and needs.

As a result our findings lead to further exploration primarily in two following thematic lines: (1) extensive analysis of ICT clusters and (2) influence of institutional environment on cluster activity bundles across all industry types of clusters. We are further interested on the influence of the cluster activity bundles and the cluster performance in different institutional environments. We see this as a fruitful extension on our current research. The main limitations of our research are is limited number of case studies. More cases from a wider set of institutional frameworks as well as more cases based on theoretical replication in the same institutional settings would contribute to the generalizability of our research findings.

References

Ahedo, M. (2004). Cluster policy in the Basque country (1991–2002): constructing 'industry–government' collaboration through cluster-associations. *European Planning Studies, 12*(8), 1097-1113.

Altenburg, T. (1999). How to Promote Clusters: Policy Experiences from Latin America. *World Development, 27*(9), 1693–1713. doi:10.1016/S0305-750X(99)00081-9

Asheim, B., Martin, P., Cooke, R. (Ed.) (2006): *Clusters and Regional Development. Critical reflections and explorations*. London, New York: Routledge

Aziz, K. A., & Norhashim, M. (2008). Cluster-Based Policy Making: Assessing Performance and Sustaining Competitiveness. *Review of Policy Research, 25*(4), 349–375. doi:10.1111/j.1541-1338.2008.00336.x

Bertelsmann Stiftung. (2010). BTI Transformation Index 2014. www.bti-project.com. *Last accessed on 11.02.2016.*

Cornett, A., & Ingstrup, M. B. (2010). Cluster Development as an Instrument of Regional Business Development Policy: Concepts and Danish Reality. In K. Brown, J. Burgess, M. Festing, & S. Royer (Eds.), *Internationale Personal- und Strategieforschung. Value Adding Webs and Clusters: Concepts and Cases* (pp. 43–61).

Creswell, J. W. (2003): Research Design. Qualitative, Quantitative and Mixed Methods Approaches. 2nd ed. Thousand Oaks: Sage Publications

De La Maza-Y-Aramburu, X., Vendrell-Herrero, F., & Wilson, J. R. (2012). Where is the value of cluster associations for SMEs?. *Intangible Capital*, *8*(2), 472-496.

Delgado, M., Porter, M. E., & Stern, S. (2010). Clusters and entrepreneurship. *Journal of Economic Geography, 10*(4), 495–518. doi:10.1093/jeg/lbq010

Enright, M. J. (2003). Regional Clusters: What We Know and What We Should Know. In J. Bröcker, D. Dohse, & R. Soltwedel (Eds.), *Innovation Clusters and Interregional Competition* (pp. 99–129). Berlin, Heidelberg: Springer Berlin Heidelberg. Retrieved from http://dx.doi.org/10.1007/978-3-540-24760-9_6

Feldman, M. P., & Francis, J. L. (2004). Homegrown Solutions: Fostering Cluster Formation. *Economic Development Quarterly, 18*(2), 127–137. doi:10.1177/0891242403262556

Gallardo, R., & Stich, B. (2013). The Extent of Cluster-Based Policies and the Political/Institutional Context: A Collective Case Study. *Economic Development Quarterly, 27*(4), 325–337. doi:10.1177/0891242413490793

Gilbert, B. A., McDougall, P. P., & Audretsch, D. B. (2008). Clusters, knowledge spillovers and new venture performance: An empirical examination. *Journal of Business Venturing, 23*(4), 405–422. doi:10.1016/j.jbusvent.2007.04.003

Gretzinger, S., & Royer, S. (2014). Relational resources in value adding webs: The case of a Southern Danish firm cluster. *European Management Journal*, *32*(1), 117-131.

Häussler, C., & Zademach, H.-M. (2007). Cluster performance reconsidered : structure, linkages and paths in the German biotechnology industry ; 1996-2003. *Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung : zfbf, 59*(3), 261–281.

Hospers, G.-J., Desrochers, P., & Sautet, F. (2009). The next Silicon Valley? On the relationship between geographical clustering and public policy. *International Entrepreneurship and Management Journal, 5*(3), 285–299. doi:10.1007/s11365-008-0080-5

Interreg IIIC Programe (2006): *Cluster Management Guide – Guidelines for the Development and Managment of Cluster Initiatives*. Clusters linked over Europe (CLOE). Linz: TMG – Technologie- und Marketinggesellschaft m.b.H. of Upper Austria.

Jungwirth, C., Grundgreif, D., & Müller, E. (2010). Governance-Regimes von regionalen Clustern. Ein Vergleich der Strategien staatlich und privat initiierter Cluster. *Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung (zfbf), 62*(10), 42–62.

Konstantynova, A.; Wilson, J. R. (2014): Comparing Cluster Policies: An Analytical Framework. *Orkestra Working Paper Series in Territorial Competitiveness* (*R01):* San Sebastián: Deusto

Lehmann, T., & Benner, M. (2015). Cluster Policy in the Light of Institutional Context—A Comparative Study of Transition Countries. *Administrative Sciences, 5*(4), 188–212. doi:10.3390/admsci5040188

Lijphart, A. (1971): Comparative Politics and the Comparative Method. *The American Political Science Review 65 (3)*, pp. 682–693

Lublinski, A. E. (2003). Does Geographic Proximity Matter? Evidence from Clustered and Non-clustered Aeronautic Firms in Germany. *Regional Studies, 37*(5), 453–467. doi:10.1080/0034340032000089031

Mair, J., & Marti, I. (2009). Entrepreneurship in and around institutional voids: A case study from Bangladesh. *Journal of Business Venturing, 24*(5), 419–435. doi:10.1016/j.jbusvent.2008.04.006

Martin R.; Sunley, P. (2002): Deconstructing Clusters: Chaotic Concept of Policy Panacea? *Journal of Economic Geography 3*, pp. 5–35

McCann, B. T., & Folta, T. B. (2011). Performance differentials within geographic clusters. *Journal of Business Venturing, 26*(1), 104–123. doi:10.1016/j.jbusvent.2009.04.004

Miller, C. R. (2006). *The Tholian Web: The political/institutional context of regional cluster-based economic development.* Virginia Polytechnic Institute and State University.

Molina-Morales, F. X., López-Navarro, M. Á., & Guía-Julve, J. (2002). The role of local institutions as intermediary agents in the industrial district. *European urban and regional studies*, *9*(4), 315-329.

Müller, E., & Jungwirth, C. (2011). On the Performance of Clusters - An Analysis of the Impact of Cluster Context, Structure, and Functioning on Cluster Performance. *Frontiers of Entrepreneurship Research, 31*(14).

Mueller, E. F., & Jungwirth, C. (2016). What drives the effectiveness of industrial clusters? Exploring the impact of contextual, structural and functioning determinants. *Entrepreneurship & Regional Development*, *28*(5-6).1-24.

Nadabán, M. V.; Berde, A. B. (2009): Clusters: definiton, tipology and characteristics of some clusters in the Észak-Alföld region. Case-study. *4th Aspects and Visions of Applied Economics and Informatics*, Debrecen, 26-27/03/2009

North, D. C. (2005). Institutions and the Performance of Economies Over Time. In C. Menard & M. M. Shirley (Eds.), *Handbook of New Institutional Economics* (pp. 21–31). Berlin/Heidelberg: Springer-Verlag.

Porter, M. (1998a): *On Competition*. Boston: Harward Business School Press

Porter, M. E. (1998b). Clusters and the new economics of competition. *Harvard business review, 76*(6), 77–90.

Porter, M. (2003). The Economic Performance of Regions. *Regional Studies, 37*(6-7), 545–546. doi:10.1080/0034340032000108688

Porter, M. E. (2000). Location, Competition, and Economic Development: Local Clusters in a Global Economy. *Economic Development Quarterly, 14*(1), 15–34. doi:10.1177/089124240001400105

Provan, K. G., Fish, A., & Sydow, J. (2007). Interorganizational networks at the network level: A review of the empirical literature on whole networks. *Journal of management*, *33*(3), 479-516.

Rosenfeld, S. A. (1997). Bringing business clusters into the mainstream of economic development. *European planning studies*, *5*(1), 3-23.

Rosenfeld, S. A. (2005). Industry Clusters: Business Choice, Policy Outcome or Branding Strategy? *Journal of New Business Ideas and Trends, 3*(2), 4–13.

Saxenian, A. (1996). *Regional advantage: Culture and competition in Silicon Valley and Route 128*: Harvard University Press.

Schrammel, T. (2013). Bridging the Institutional Void: An Analytical Concept to Develop Valuable Cluster Services. *Management Revue, 24*(2), 114–132. doi:10.1688/1861-9908_mrev_2013_02_Schrammel

Schrammel, T. (2014). *Clusters as an instrument to bridge institutional voids in transition economies: Lessons learned from Southeast Europe*. *Markt- und Unternehmensentwicklung Markets and Organisations*. Wiesbaden: Springer Gabler.

Sölvell, Ö.; Lindqvist, G.; Ketels, C. (2005): *The Cluster Initiative Greenbook*. 1st ed. Stockholm: Bromma tryck AB

Sternberg, R., Kiese, M., & Stockinger, D. (2010). Cluster policies in the US and Germany: varieties of capitalism perspective on two high-tech states. *Environment and Planning C: Government and Policy*, *28*(6), 1063–1082.

Stolz, T., & Schrammel, T. (2014). Business Membership Organizations as a policy approach to increase SMEs' EU funds absorption. In G. Papadopoulos, P. Ketikidis, & S. A. Kofter (Eds.), *Proceedings to the 7th International Conference for Entrepreneurship, Innovation and Regional Development (ICEIRD)* (pp. 239–249).

Tallman, S. J. M. H. N. &. P. S. (2004). Knowledge, clusters, and competitive advantage. *Academy of management review,*, *29*(2), 258–271.

Taylor, P., McRae-Williams, P., & Lowe, J. (2007). The determinants of cluster activities in the Australian wine and tourism industries. *Tourism Economics*, *13*(4), 639-656.

Williamson, O. E. (1996). *The mechanisms of governance*. New York: Oxford University Press.

World Bank. (2015). Doing Business 2015. http://www.doingbusiness.org. *Last accessed 11.02.2016.*

Yin, R. K. (2003): Case study research. Design and Methods. 3rd. 5 volumes. *Applied Social Research Methods Series*. Thousand Oaks: Sage Publications

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Los Angeles, Calif: Sage Publications.