THE INCREASING ROLE OF INNOVATION IN BUSINESS SERVICES, HIGHER EDUCATION AND INDUSTRIAL CLUSTERS

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Introduction

The Doctoral (PhD) School of Economics, at the Faculty of Economics and Business Administration of Debrecen University submitted a proposal entitled *"Organizational-institutional innovations and industrial clusters as the sources of competitiveness"* which was approved by the "TÁMOP 4.2.2.B-10/1-2010-0024" (2011–2013) programme (Project title: "Supporting Academic Training Workshops at the University of Debrecen".)

The outcome of the project was a series of theoretical-methodological papers based on literature reviews prepared by the School members and numerous company case studies carried out by the PhD students. Linked to the internationalisation of the School, the core aim of the project was to develop English language teaching material based on both theoretical and empirical experience, focusing on the role of organizational innovation in the fast-growing service sector and network-organizations (clusters). An additional related goal was to develop the research experience of the PhD students involving them in a research project through collecting, evaluating and analysing first hand empirical experience in the organizations operating in the so-called knowledge intensives business service sector (KIBS) in higher education and in organizations operating in industrial clusters. Participation in the research activity was supported by the TÁMOP programme, and both professors and doctorate students were encouraged to attend international conferences and publish papers in professional reviews. In relation to the various outcomes of this programme, it is worth mentioning that the first book was published in June 2013 dealing with experiences gained from a dozen organizational case studies.[1]

1 Csaba Makó–István Polonyi–Miklós Szanyi–Mária Ujhelyi (Eds.) (2013): *Organizational and Institutional Innovation and Enterprise Clusters as a Source of Competitiveness,* COMPETITIO Books No. 13., Debrecen: University of Debrecen, ISBN 978-963-318-352-6, TÁMOP-4.2.2/B-10/1-2010-0024.

Using these indices of innovation capabilities the following five country groups were distinguished (Cedefop, 2012: 44–45):

(1) The country group labelled *High* has the highest scores on all three dimensions measured (i.e. a higher rate of learning/innovative work organization, the strong presence of other forms of practical learning and high innovation performance). Members of this country cluster are Denmark, Germany and Sweden.

(2) The *Solid* country cluster is characterised by a high presence of learning/ innovative work organization and the moderate presence of other forms of learning and innovation performance. Members of this country cluster are Belgium, Luxemburg, the Netherlands, Austria, Finland.

(3) The intermediate country group is divided into *Moderate 1* and *Moderate 2* country clusters. The *Moderate 1* cluster is characterised by a high share of learning/innovative work organization combined with a medium value for other forms of learning and a moderate innovation index. Members of this country cluster are *Estonia*, Malta, Norway.

(4) In the case of the *Moderate 2* country group, a moderate innovation index is combined with a weak presence of both learning/innovative work organization and other forms of learning. Members of this country cluster are the Czech Republic, Ireland, Greece, Spain, France, Italy, Cyprus, Slovenia, and the United Kingdom.

(5) The last country cluster is characterised by Low scores on all three dimensions used to measure the innovation capability of firms. Members of this country cluster are Bulgaria, Latvia, Lithuania, Hungary, Poland, Romania, and Slovakia.

The results of the Cedefop (2012) report indicate a visible variation in the innovation capabilities of the firm within the EU-27 countries. In this sense, we have to stress the weak performance of both the Mediterranean and Post-socialist country groups in comparison to the Nordic and Continental European country groups.[2] However, we may identify significant inequalities within the post-socialist country group, too. For example *Estonia* belongs to the *Moderate 1* country cluster, the Czech Republic and Slovenia are located in the *Moderate 2* country cluster, while the remaining post socialist countries stand alone in the "Low" performing country group.

2 In relation to the institutional varieties of capitalism, see the papers by Kapás and Szanyi in the first part of the book.

Besides the innovation capability of firms operating in various sectors of the economy, it is necessary to stress the importance of organizational innovation in the fast growing service sector. In this field, the post-socialist countries have a 'trailing edge' position. However, the differences within this country group in respect to the innovation in services are more important than in the case of the manufacturing sector. Looking at the country differences in innovation performance, we can state that in both sectors, the Czech Republic and Estonia have 'leading edge', while Hungary and Latvia have 'trailing edge' positions (Stare, et. al., 2012). The low intensity of organizational innovation should be attributed to the impacts of both structural and cognitive path dependencies. In this respect, we share the diagnoses of Stare et al. (2012: 210): "The low level innovation activity in services in the majority of Central and Eastern European (CEE) countries reflects not only the perception of the service sector as unproductive labour in the past but also the poor awareness of innovations in services. The understanding of innovation in these countries still suffers from the bias in favour of technological innovation in goods and services while improvements in business processes, organizational and marketing methods or delivery channels are usually not deemed as instrumental for improved competitiveness of the companies as [...] technical innovations."

TOPICS, AUTHORS AND BRIEF SUMMARIES OF THE CONTRIBUTIONS

The present book is the final outcome of the TÁMOP project and contains a selected list of contributions, which are grouped according to the three main themes of the book:

Part One: Theoretical and Methodological Foundations

Part Two: The Increasing Role of Knowledge Intensive Business Services in Economic Development

Part Three: Innovation and Integration to a Network Economy: The Role of Higher Education and Regional Clusters

Institutions, regulations and social-economic actors play an essential role in understanding and shaping the innovation performance of the organization, although their role and impact is changing in time and place. In addition, the development of the metrics required to measure various types of innovation –

with special focus on organizational innovation – are the focus of the chapters in the first part of the book *(Theoretical and Methodological Foundations)*.

The firm is a key actor in the national innovation system and the Varieties of Capitalism (VoC) approach proves to be an appropriate theoretical tool to understand the 'filtering role' of institutions and actors in innovation activity. In the first chapter, *'Institutional and developmental path differences among developed countries: the varieties of capitalism. A literature review'*, Kapás reviews the abundant and still growing literature of the VoC in a well structured and argued way. Following the introduction, the author outlines the main features of the VoC approach: "The theory has several theoretical building blocks, of which institutional analysis and political science are of primary importance. Both involve the concept of path-dependence and lock-in effects… A crucial part of the theoretical framework of Varieties of Capitalism is the specification of two ideal types (for details see Hall and Soskice 2001), the *liberal market economy* (LME) and the *coordinated market economy* (CME), each with a distinctive set of institutions that solves the coordination problem in quite different ways" (p. 5–6). The following sections of the analysis focus on the two sub-sets of the debate: "good" versus "bad capitalism" and the 'European social models'. The section dealing with 'Legal origin and the rule of law' focuses on the impacts of the Legal Origin Theory on the VoC approach. Finally, the last sections represent an attempt to adapt the VoC school approach to the transformation countries in the Central and Eastern European (CEE) region. Here the author accepts the Bohle-Gerskovits typology: "… a *neoclassical type* in the Baltic states, an *embedded neo-liberal type* in the Visegrad states, and a *neo-corporatist type* in Slovenia" (Bohle-Gerskovits 2007: 27).

The second chapter *'Varieties of development path in post-communist countries with special regard to the transition in Hungary'* contributed by Szanyi is an empirically tested adaptation of the VoC approach aimed at better understanding the institution building processes taking place in the transformation economies. Following a brief review of the systematic changes in the CEE region (e.g. privatisation, Foreign Direct Investment, etc.), Szanyi summarizes the lessons from the VoC literature in order to better understand the emerging institutional differences in the post-communist countries. Describing the current development patterns of these economies the author stresses the role of the following undesirable institutional developments: "Cronyism is in place in all market economies, but it may be kept under control by the effective watchdog institutions of the society. CEE societies are not yet strong and organized enough to establish powerful control institutions. Hence, cronyism is especially strong in these countries. Russia and the Ukraine are perhaps the most discussed examples of crony capitalism. In these two countries even the most basic institutions of democracy are rather weak. But CEE countries are not exempt from rather crude examples of cronyism expanding into bribery and corruption as well." The final concluding section summarizes the key institutional characteristics of the emerging capitalism in the post-communist countries (i.e. geographic-historical-social similarities and differences, the key role of FDI in modernization, the close relations between politics and business etc.) and stresses the need for further analysis to better understand the interplay between these characteristics which shape institutional varieties in this country group.

In their contribution entitled *'Measuring Organizational Innovation - The Example of the European Community Innovation Survey-CIS'*, Makó–Illéssy –Csizmadia review the difficulties in developing "metrics" to identify the organizational innovation in firms' practices. Before presenting a "benchmark" exercise of the organizational surveys carried out both at European and national levels, the authors provide evidence for the key roles of organizational innovation (structural capital) and for the development of human competence (human capital) in the innovation capabilities of the firm. The central topic of the organizational survey's benchmarking exercise is a critical overview of the various waves of the Community Innovation Survey (CIS) with special attention to the variables aimed at measuring organizational innovation. Besides this analysis, the authors make a cross-country and sector comparison of the diffusion of organizational innovations and the knowledge development practice in the firm, according to country clusters. The final section lists the future research challenges which must be met in order to measure more accurately organizational innovation. In this respect, Makó–Illéssy–Csizmadia emphasise the following theoretical-methodological weakness of the existing "metrics" used to measure both technological and non-technological innovation: "The various waves of the CIS do not pay attention to the significant differences between the manufacturing and the service sectors. Until know, there has been no consent among the representatives of the "assimilation", "dissimilarity" or "synthesis" approaches aimed at better understanding innovation in the service sector" (p. 105).

The second part of the book (*'The Increasing Role of Knowledge Intensive Business Services in Economic Development'*) reviews the international trends of development in the so-called Knowledge Intensive Business Service (KIBS) sector. In addition, the contributions in this part of the book present the empirical results of a recent comparative survey carried out in Hungarian and Slovak KIBS firms on the diffusion of organizational innovation and knowledge development practices. The chapter *'Development of Knowledge Intensive Business Services: An International Perspective'*, elaborated by Makó – Illéssy – Csizmadia, begins with an overview of the existing literature on the development of the KIBS from an international perspective. The results of the literature review fully support the following diagnosis: "... the shift between manufacturing and services sectors [was] relatively fast and radical while this was much less obvious for shifts within the service sector, where change was more gradual and reflected drawback[s] from the past." (Stare – Meirelles - Dos Santos 2012: 208). To better understand the nature of this "second" shift in services, the authors stress the heterogeneous character of services (i.e. traditional services, systems firms, professional services). In order to better understand how organisational innovation takes place in practice, the authors briefly present two case studies carried out in the knowledge intensive business service sector. The first case study illustrates well the interplay between technological and non-technological innovation, and more precisely problems occuring when the organisation is not adjusted to technological change. The second case study is about a Hungarian-owned high-growth SME and demonstrates how does a strong customer focus shape the work organisation and sometimes leads to the launch of new business activities in a knowledge intensive service company.

The fifth chapter, written by Makó – Illéssy - Csizmadia and entitled *'The Knowledge Intensive Business Service Sector in a Comparative Perspective - Hungarian vs. Slovak Business Service Firms'* continues to focus on the KIBS sector in mapping the forms of organizational innovation and of knowledge formation. Comparing the company practices among Hungarian and Slovak firms, visible differences were identified. In the Slovak firms the proportion of radical organisational innovations (e.g. project-based work, inter-disciplinary working groups) was higher than in the Hungarian firms. In addition, the workplace and contractual innovations (i.e. part-time work, working time flexibility, mobile work and home-based telework) were more prevalent in the Slovak than in the Hungarian employment practices. Regarding the knowledge development in the firm, the following common pattern was identified: "With respect to the content of training ... almost half of the training courses aimed at improving job-related specific knowledge and two-fifths of the employees were involved in job-specific + general training. In both countries, less than one tenth of employees had a chance to participate in training activities improving their generic knowledge and competences (e.g. language and communicational skills)." (p. 169)

The contributions to the third part of the book, *'Innovation and Integration to a Network Economy: The Role of Higher Education and Regional Clusters'*, deal with the innovation experiences in such complex institutions as those found in higher education and in cluster (company network) formations. Both Polónyi - Ujhelyi's chapter *'The Impact of Higher Education on the Economic Integration and Innovation'* and Szanyi - Molnár's contribution 'Relationships of industrial clusters and regional development' deal with innovations in rather complex institutions (e.g. higher education and firms operating in the clusters). According to the experiences of the French school, labelled the *"effet societal"*, there are marked differences between simple versus complex institutional settings. "Simple institutional patterns such as management by objective or quality of work circles may diffuse throughout the advanced industrialized countries but the complex pattern will not ... complex institutional patterns are strategic for two central problems current in social theory. First, they systematically relate macro-institutional analysis to the meso-level or organizational analysis. Second, they explicate why there are path-dependencies in some aspects of society and not in others" (Hage 2000: 313). These final chapters in the book illustrate well the idea that facilitators or inhibitors of innovation in complex systems like higher education and industrial clusters are embedded in a number of different and conflicting social roles, and in the formation of social capital which requires – among other things - a long-term and collective learning process from the actors concerned.

In their contribution entitled *'The Impact of Higher Education on the Economic Integration and Innovation'*, Polónyi and Ujhelyi provide analyses on the shifting characteristics (i.e. organizational, operational and employment) of the universities: from the Humboldt model to the "service provider" model. Besides presenting the various university models (e.g. Humboldt-type, post-Humboldt-type and Service provider), in discussing the innovation inhibitors in the Hungarian university system, the authors stress the important impeding role of the Hungarian financial-incentive system: "Overall, more than half of the financing of higher education research at the beginning of the 2000s – taking into account the actual expenses (and not including the cost calculated on the basis of the tutor's working hours) – originates from institutional funding by the government, while more than a third originates from tenders (mainly government sources again), and only one-tenth comes from the business sphere" (p. 196). The final section of this chapter outlines the latest theoretical approach adopted to understand the impacts of the university on innovation. In their analyses, the authors identify such new functions of the university as technology and knowledge transfer, knowledge engagement and the creation of a knowledge environment. Concerning the role of the 'service provider university', Polónyi and Ujhelyi base their analyses on recent theoretical concepts such as the Triple-Helix model, stressing the crucial role of the high-value-added or strategic cooperation between the university, the business community and government institutions, which is not yet a widely recognised and employed pattern of cooperation in Hungarian higher education.

In their chapter *'The Relationship between industrial clusters and regional development'*, Szanyi and Molnár investigate the various dimensions of the spatial concentration of economic activities (e.g. positive externalities), relying on the Marshallian tradition and on the "Stockholm cluster school". The core sections of this contribution outlines both the content of the cluster concept (e.g. the constitutive elements of the cluster operation relying on the well-know approach of Porter) and the features of international clusters (e.g. industrial districts in Third Italy, Baden–Württenberg, etc.). Following the review of cluster formation in developed economies, Szanyi and Molnár present the results of an international comparative survey – using the methodology elaborated by Porter – on the characteristics of cluster development in the 10 New Member States (NMS) of the European Union. The results indicate that "There are large differences within the EU-10 across regions and cluster categories regarding their level of specialization and spatial concentration" (p. 229). The central section of the chapter focuses on the relationship between innovation and cluster formation in the North-Eastern Hungarian region. Assessing the innovation performance of the two clusters (i.e. food and pharmaceuticals) they found the following mixed results: "The pharma cluster was especially successful in innovation … The food cluster on the other hand does not have the significant results that would make staying in the cluster rational when grants cease to arrive. Both clusters, but especially the food cluster, should improve work on building social capital …" (p. 242). In this regard it is worth mentioning the – often underestimated – difficulties of trust-creation, which is the essential element of social capital: "Trust does not come overnight: it successfully evolves and grows as people learn through experience that social exchange can and does yield extensive gains" (Sengerberger–Pyke, 1992: 20).

REFERENCES

Bohle, D.–Greskovits, B. (2007): The State. Internationalization, and Capitalist Diversity in Eastern Europe. *Competition and Change* 11. 2: 89–115.

Hage, J. (2000): Path Dependencies of education systems and division of labour within organizations. (Formalizing the societal effects perspective) In: Maurica, M.–Sorge, N. (Eds.) *Embedding Organizations*. Amsterdam–Philadelphia: John Benjamins Publishing Company. Pp. 311–324.

Learning and Innovation in Enterprises (2012). *Research Report*, No. 27. European Centre for the Development of Vocational Training (Cedefop), Luxemburg: Publications Office of the European Union. P. 166.

Nielsen, P. (2012): Capabilities for Innovation: The Nordic Model and Employee Participation. *Nordic Journal of Working Life*. Vol.2., No. 4. Pp. 2–37.

Sengerberger, W.–Pyke, F. (1992): Industrial districts and local economic regeneration. *Research and policy issues*. In: Pyke, F.–Sengerberger, W. (Eds.) Industrial Districts and Local Economic Regeneration. Geneva: International Institute for Labour Studies. P. 294.

Stare, M.–Meirelles e. S.–Dos Santos, M. (2012): Tapping the Innovation Potential of Knowledge Intensive Services in Emerging Economies. *International Journal Services Technology and Management*. Vol. 18. No. 3-4. Pp. 204–223.