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**CROSS-SECTOR PARTNERSHIPS IN THE CONTEXT  
OF RESEARCH AND DEVELOPMENT POLICY**

*The goal of the article is the identification of factors influencing cross-sector partnerships in the context of research and development policy in Poland. The authors aim at resolving some crucial research problems, in particular: the factors that have stimulating or destimulating effects on cross-sector partnerships in the context of research and development policy; the critical conditions for these partnerships to appear and to be effective; the strongest and weakest sides of such partnerships. The research is based on a theory of rational choice by J.S. Coleman. The authors present a case study as an example of a cross-sector partnership of research and development sector and private enterprises.*

*Keywords:* cooperation; cross-sector partnerships; research and development policy; europeanization.

*JEL classification:* A13, D8, L3.

Майя Пруденіца, Агнежка Млодинська-Гранек  
**МІЖГАЛУЗЕВЕ ПАРТНЕРСТВО У КОНТЕКСТІ  
РОЗВИТКУ СЕКТОРУ ДОСЛІДЖЕНЬ**

*У статті досліджено чинники впливу на міжгалузеве партнерство у контексті розвитку дослідницького сектору у Польщі. Продемонстровано, які з цих чинників мають стимулюючий або дестимулюючий ефект на міжгалузеве партнерство та його ефективність, які є слабкі та сильні сторони у партнерстві такого роду. Дослідження спирається на теорію раціонального вибору Коулмана. Надано приклади міжгалузевих партнерств між дослідницькими інститутами та приватними підприємствами.*

*Ключові слова:* співробітництво; міжгалузеве партнерство; політика у сфері наукових розробок; європеїзація.

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Майя Пруденіца, Агнежка Млодинська-Гранек  
**МЕЖОТРАСЛЕВОЕ ПАРТНЁРСТВО В КОНТЕКСТЕ  
РАЗВИТИЯ ИССЛЕДОВАТЕЛЬСКОГО СЕКТОРА**

*В статье исследованы факторы, влияющие на межотраслевое партнёрство в контексте развития исследовательского сектора в Польше. Выяснено, какие из этих факторов имеют стимулирующий или дестимулирующий эффект на межотраслевое партнёрство и его эффективность, какие есть сильные и слабые стороны в партнёрстве такого рода. Исследование опирается на теорию рационального выбора Коулмана. Описаны примеры межотраслевых партнёрств между исследовательскими институтами и частными предприятиями.*

*Ключевые слова:* сотрудничество; межотраслевое партнёрство; политика в сфере научных разработок; европеизация.

**Introduction.** The societies of the European Union are confronted with many strategies and framework underlying the meaning of cooperation between research and development sector and industry. However, what we are confronted with are not only strategies, but processes of very dynamic changes that involve all actors. Some of these processes are exogenous, as is the very process of europeization (Europe-2020,

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3.03.2010; "Innovation Union", Flagship Initiative Europe 2020, 6.10.2010; Partnering in Research and Innovation, 2011; Horizon 2020 – Framework program for research and innovation, 30.11.2011), and their premises have to be taken into account when adjusting economic and political strategies by each EU member. Hence, even though cooperation is being by all means a positive phenomenon among societies, there is still room for a critical perspective. It is necessary to take into account specific conditions, structures and actors that participate in decision-making processes of each country. Only when this is considered, it is possible to obtain broader and closer to the reality view of how specific solutions can be implemented effectively.

In this article the authors make an attempt to identify factors influencing cross-sector partnerships in the context of research and development policy in Poland. Further, they differentiate which of these factors have stimulating, and which – desstimulating effects on cross-sector partnerships, defined as partnerships between public and private organizations, that is respectively public institutions from research and development sector (universities, research institutions) and companies. Research and development policy is defined as the state's policy targeted at research activity and research commercialization (Kwiecinski, 2005; F. Feldmann, 1999). As already mentioned, the research is based on the theory of rational choice introduced by J.S. Coleman (1994), incorporating institutional and systemic aspects into it (Coleman, 1990). Accordingly to his approach, the fundamental part of the theory includes elements like methodological individualism and maximization of profits and optimizing processes, but also the concept of institutions and system, the concept of social optimum and system balance and the concept of social capital. To tentatively identify the aspects of cross-sector partnerships in the context of research and development policy in Poland the authors introduce an example of such cooperation based on the case study of the project "Your Knowledge. Your Company. Spread the Network of Cooperation", realized in the region of Lower Silesia, involving public organizations (universities) and private entities (enterprises), aiming to improve cooperation between scientific environment and business, to foster initiatives of knowledge transfer to the market.

A prerequisite to better understanding of the functioning of cross-sector partnerships between academia and business is the description of the research and development policy context.

**Research and development policy in Poland. The essence and characteristics.** The point of reference within the article is the research and development policy in Poland in the context of the European Union. European research and development policy is based on provisions in the founding treaties. The most important part is Title XIX of the Treaty of Lisbon: Research and technological development and space (The Treaty of Lisbon, 2007), as well as parts of the Treaty Establishing the European Atomic Energy Community (The Treaty Establishing..., 2010). The latest frameworks and strategies that design future innovative research and development policy are among others: Europe 2020, A strategy for smart, sustainable and inclusive growth; "Innovation Union", Flagship Initiative Europe 2020; Partnering in Research and Innovation, Horizon 2020 – Framework program for research and innovation. Accordingly to these there emerges a very clear message that in the knowledge-based economies what is necessary is no longer greater innovation exclusively, but rather

innovation through cooperation of partners at all levels of state organization: economic, political and social. Hence, each policy, including the research and development one, needs to include the creation of cross-sector partnerships to keep up with the global competitiveness.

The authors define research and development sector (R&D sector) in Poland as: "Sector created by institutions and actors that act to increase knowledge resources, as well as find new applications of knowledge. This results in diverse innovations – product, process, or technological, which are key elements of rapid economic development" (Sektor badawczo-rozwojowy w Polsce, 2010).

Except for European treaties, there are other specific legal solutions in Poland that frame the R&D policy. Some of them are introduced in the amended Act on Higher Education from 2005 (first changes in 2011, the latest from 2014, see: Prawo o szkolnictwie wyższym z p. zm., 2012). The act's regulations for the first time allowed creating academic entrepreneurship incubators and technology transfer centers (within legal frames), to better use intellectual potential of universities by transferring knowledge and technologies to the market, thus increase cooperation between academia and business environment. Another new instrument of R&D policy are the so-called "special purpose companies", that is the companies that can be created by and within university, to ease the possibilities of knowledge transfer to the market. Another vital change was introduced within the frames of Act on research institutes as of 30.04.2010 (Ustawa z dnia 30.04.2010 o instytutach badawczych), where it is stated that such institutes might cooperate within scientific-industrial centers to realize tasks related to cooperation with business, that is to apply their scientific results to the market. Another examples are Regional Innovation Strategies (RIS) that each county of Poland created. They aim at supporting regional and local authorities and other organizations of regional development in defining and implementing effective systems of support for innovation in regions. Strategies are prepared, based among others on the possibilities and potential of R&D sector, as well as enterprises (Innovation Portal, Regional Innovation Strategies, [www.pi.gov.pl](http://www.pi.gov.pl)). The RIS set their strategic goals on activation of academic and business environment towards better cooperation, to enable a better knowledge transfer, seen as valuable target for both sides, and thereby for the economies of the regions.

The described legal regulations and general strategies and frameworks within R&D policy in Poland show there is recognition of the world trends in the context of increasing cooperation between science and business environments and this might already be perceived as a success. However, the existing regulations are by no means practically used to a significant extent. The key problem of scientific institutions in Poland is a very low level of R&D expenditures (GERD in relations to PKB in 2012: 0.90, data from: *Działalność badawcza i rozwojowa w Polsce w 2012 roku*), especially originating from the private sector (enterprises). Even though the share of private sector in financing R&D grows (32.3% in 2012, that is by 4.2 points higher than in 2011. See: *Działalność badawcza i rozwojowa w Polsce w 2012 roku*), companies are still not eager to cooperate with universities and other research institutions, and institutions themselves have no homogenous strategy, or they rather lack any strategy on how to cooperate with business (Sektor badawczo-rozwojowy w Polsce, 2010). This is one of the reasons why Poland has a very low rate of commercialization and patent

solutions in comparison with other EU member states, and obtains one of the weakest results in the context of innovation performance.

There are practically no examples of public-private partnerships from the R&D and private sector, based on the regulations of the Act on public-private partnerships (2008). However, there are more and more initiatives on partnerships based on other legal agreements, involving representatives from R&D sector cooperating with business partners, and supported by local or regional authorities (Some of the examples are: Wrocław Research Center EIT+, CEZAMAT (Warsaw), Energy Center AGH (Krakow), or Wielkopolska Centre of Advanced Technologies, Poznan).

Having described the baseline of the article, in the next section the authors introduce the definition of partnership and the overview of cross-sector partnerships in Poland, as the merit of the undertaking analysis.

**Cross-sector partnerships. Essence and characteristics.** The term "partnership" is applied with increasing frequency that is why it is crucial to analyze its meaning. The basic assumption concerns the fact that this is a partnership between institutions, organizations from different sectors, including public sector institutions. The research (Selsky and Parker, 2005; Jorgensen, 2006; Wagner, 2011) on cross-sector partnership have identified its 4 dimensions. The first one represents partnerships between non-profit organizations and companies, including social issues and their determinants. The second dimension denotes partnerships between public institutions and companies, where the main form is public-private partnership. It is a specific and legally defined form being used very rarely, taking into account advantages that it provides. The third dimension is the formula of public-social partnership, not yet unequivocally and comprehensively defined in a scientific manner. It rather functions as a description of a phenomenon, defined for the need of particular undertakings. There are attempts to define it for purpose of differentiating it from public-private partnership and to emphasize an important element: social side (the proof is the Act on charitable status and voluntary service as of 24.04.2003, further changes). The fourth dimension means partnership that involves common actions of actors of all 3 sectors. This dimension is focused on national and international cross-sector large-scale projects (however, does not leave territorial projects out either).

In Poland what is being observed is the retreat from the model of public administration as the only, or the main provider of services, especially in the social field. It is, nonetheless, still very chaotic, with no vision of labor division among respective institutions and sectors. In many domains, there is domination of the "bipolar" model: public institutions and enterprises, or non-government organizations and enterprises, or public institutions and the third sector representatives. There are practically no examples of "tri-polar" models (public institutions – enterprises – non-government organizations).

The state and public administration are not very fond of discarding their tasks and they often guarantee themselves the right to preemption, understood in a very peculiar manner.

Decentralization, in the praxis of existing cross-sector partnership, means the transfer of competences and resources, not always at the same time. When realizing such assumptions, what is being observed is the lack of compatibility of actions and solving problems. Actions are rather concentrated on a political game, where prob-

lems are being offloaded or transferred to the others. Delegating tasks on private or social actors means mainly the reduction of responsibility of the state and its executives. What is more, the realization of services is being entrusted to the subjects that guarantee lower price, but not strictly defined standards, nor mechanisms protecting recipients, nor high quality. Last but not least, relations with organizations strongly dependent on public resources are very often characterized with subordination, where an organization becomes a customer. Every year, organizations take part in different kinds of "grant-competition lotteries", unfortunately on the basis of such relations it is difficult to build a sustainable institution of partnership.

The state and public administration that represents the state should notice and recognize the particular significance of the actors that it associates with, to be able to effectively exploit the instrument of partnership. Administration should appreciate the competence and the unique nature of these actors even if a public institution/s could realize the tasks on its own or when performing as the payer, and enforce on partners the acceptance for its own preferences. Resigning from this "position rent" by administration is being very inconvenient and requires great maturity (Handzlik and Glowacki, 2012: 5–36).

**Case study: "Your Knowledge. Your Company. Spread the Network of Cooperation"**<sup>3</sup>. **The features of the project.** The fundamental part of another edition of the project were the experiences gained by the company "Venom Systems Ltd." during 2009–2010, the leader of the first edition of the project "Your Knowledge. Your Company" financed from the Operational Program "Human Capital" in the partnership with the Medical Service Company in Kostomloty, Poland.

"Venom Systems Ltd." conducted a research based on questionnaires with more than 400 project participants. The analysis of this research brought one basic conclusion: there is a positive attitude of research fellows from the universities in the region of Lower Silesia towards engagement in the field of social problems. In the years 2009–2010 the leader of the project ("Venom Systems Ltd.") developed a network of contacts with universities and researchers interested in cooperation with enterprises by mean knowledge transfer in the field of life quality. It has been diagnosed that there is a strong need for connection between science and business that would help to prepare solutions in the field of life quality, prepared accordingly to market conditions. The research showed also the necessity to assure support and counseling. The main need introduced by scientific environment referred to the necessity of spreading knowledge on the possibilities of using scientific research findings to conduct an own company, so that there was academic knowledge transfer in the field of "soft" sciences for better life quality.

The results showed the need for activity growth in the field of academic entrepreneurship. The biggest role here belonged to: inspiration and motivation, psychological support to decrease fear when starting an own company, financial support institutions, financial support opportunities, growth of knowledge on legal frameworks, strengthening creativity, expert counseling and support in formulating concepts and creating business plans.

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<sup>3</sup> Polish name of the project: "Twoja wiedza. Twoja firma. Zarzuc siec wspolpracy". Information about the projects come from the web page of the project ([www.twtf.pl](http://www.twtf.pl)).

Taking into account the described assumptions "Venom Systems Ltd." assured that the second edition of the project "Your Knowledge. Your Company. Spread the Net of Cooperation" would be the answer to the diagnosed needs for technology transfer and promotion of academic entrepreneurship in the services connected to life quality, in the fields: security, health prevention, rehabilitation, therapy, tourism, life-learning, culture, leisure. The assumption of the project also concerned other aspects in the cooperation of academic environment and business, like: lack of information on cooperation in the fields indicated and defined in the Lower Silesia Innovation Strategy as "science and technology for life quality improvement", creation and organization of cooperation teams for the application, methodology for knowledge transfer to the market, communication and cooperation of scientific environment and business, identification and strengthening of motivation of both environments to cooperate and growth of innovative solutions applied from science to business.

Moreover, the project assumed organizational and financial support for the processes of conceptualization of innovative solutions and business projects. However, the goal of the project was not company incubation that has less and less chances to survive at the market and develop, but acting for the growth of initiatives based on knowledge transfer. After closing the project, the actors of the initiatives will have a chance to find external sources of financing or commercialize it through the creation of spin-off/out companies.

To realize the project, its leader – "Venom Systems Ltd." created a broad partnership of public and private organizations, among them: University of Wrocław, Wrocław University of Environmental and Life Sciences, Kostomłoty Community, Institute of Inventics Ltd., and "Alnair" company. The project has also been accepted under patronage of the Lower Silesia Loza Business Centre Club and Lower Silesia Council for Entrepreneurship and Science. Another supportive institution was the Wrocław Industry Park.

The project aim was to strengthen the cooperation of science and business. That is why it was aimed at researchers or teachers of all universities and R&D institutions in Lower Silesia, as well as entrepreneurs in the region. In the second year of the project it was planned to create a group of participants interested in team work for applications in the field of "soft" sciences. The project assumed supporting 20 people united in 10 teams of cooperation, including scientists and entrepreneurs or employees of enterprises. They were to create a plan and study the ability of applying the idea from the scientific sphere of soft sciences to the market, in the field of life quality improvement. This kind of activity was supposed to increase pro-innovative activities of well-qualified researchers and help to motivate the scientific environment and weaken the negative attitudes towards entrepreneurship and having an own company.

Researchers and teachers from the universities in Lower Silesia were taking part in other aspects of the project. The project was supposed to communicate information twofolds: 1) through broad media campaign; 2) precisely chosen channels (universities' mailing lists, servers), individual meetings and presentations. In the project the following tasks were realized:

1. Information and promotion campaign for cooperation of science and business in the field of soft sciences for better life quality.

2. The events for joining partners and promoting knowledge transfer and innovation.

3. Consultancy for the members of teams for cooperation for application, scientific employees, entrepreneurs and employees of companies.

4. Creation of 10 teams of cooperation for applications and work to study the ability of applications of 10 ideas from the soft sciences in the field of life quality, a system of support for the teams.

5. The development of communication system and information exchange.

6. Evaluation, monitoring and the project results dissemination.

Summarizing, the main goal of the project (both first and second edition) was and is teaching project participants about "innovative" thinking and proving that the cooperation between organizations from different sectors can bring undisputable benefits.

**Conclusions.** Concluding the foregoing analysis, cross-sector partnerships can be characterized by 4 dimensions:

- 1) partnerships between non-profit organizations and companies;
- 2) partnerships between public institutions and companies (public-private partnerships);
- 3) public-social partnership;
- 4) partnerships of all three sectors.

There exist general legal frameworks and strategies for cross-sector partnerships in the context of research and development policy in the European Union, as well as a general set of instruments supporting the development of cooperation between R&D sector and business. However, when it comes to the implementation of results in such partnerships, there are still significant discrepancies across the EU member states. The very process of europeanization does not provide enough resources to reduce these gaps in short time, as it is mostly the exogenous process that does not include endogenous conditions.

The most important factors that can be identified as those influencing cross-sector partnerships in the context of research and development innovation policy are:

- R&D expenditures;
- share of R&D expenditures from the private sector in comparison to government spending;
- innovation maturity of states, represented by their innovation performance;
- the indicator of R&D intensity and the number of people working in R&D sector;
- the level of trust between potential partners representing R&D sector and business;
- the level of general social capital, including the will and readiness to cooperate;
- the EU funds directed towards creation of cross-sector partnerships;
- communication between representatives of R&D sector and entrepreneurs;
- policy priorities of the states.

The authors identified that the most destimulating factors of cross-sector partnerships in the context of research and development policy in Poland exist on the institutional level. There are issues with transfer of competences and resources, trans-

parency on decisional level, delegating tasks and power. Another problematic are is the level of social capital, where one of its indicators is the level of trust. There are very weak results when it comes to social trust in Poland<sup>4</sup>, as well between individuals (on the social level) towards institutions, including the representatives of the R&D sector and entrepreneurs. Also, decisions on the creation of private-public partnerships are rather based on price, not quality or effective mechanisms providing good cooperation. Such attitudes, in the final effect, do not allow for great performance or sustainability of such partnerships.

To the most stimulating factors the authors include: good quality of human capital, continuously improving legal solutions supporting the development of cooperation projects between universities and business environment (like entrepreneurship incubators, technology transfer centers), growing awareness of the newest trends (also thanks to the europeanization processes), growing exploitation of the European funds used for projects promoting academic entrepreneurship (the example might be the described case study of the project "Your knowledge. Your company. Spread the Network of Cooperation").

**Summary.** Cooperation between academia and business is one of the priorities in state innovation strategies. One of the mechanisms supporting the development of academic entrepreneurship is the creation of cross-sector partnerships in the field of research and development innovation policy.

The latest EU strategies unequivocally emphasize the meaning of sustainable social development, where exploitation of scientific potential as an instrument that would intensify international competitiveness of Europe becomes a priority. It has been stated that all activities supporting the innovative development of states should occur equally on political, economic and social level. Education, research, commercialization of knowledge became the most important areas to achieve sustainable development. Hence, it is required that the subjects from public sphere open to cooperation with the external environment and that is why cross-sector partnerships seem to be the right instrument to follow these goals.

However, it is still an ongoing process that requires not only great changes in strategies, but – above all – structural or very often cultural changes, especially in case of the states with the complexity of political, social and economic transformation in their background.

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<sup>4</sup> In 2013 12.2% of the respondents (less than in 2011 and 2009 – 13%) chose the answer "most of the people can be trusted" (in 2007 – 11.5%, 2005, 2003 – 10.5%); 77.3% chose the answer "you cannot be too careful", and 10.5% answered "hard to say" (Czapinski and Panek, 2013: 283).



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