

Contemporary Economy



Contemporary Economy
Electronic Scientific Journal
<http://en.wspolczesnagospodarka.pl/>

Vol. 10 Issue 1 (2019) 35-44
ISSN2082-677X
DOI [10.26881/wg.2019.1.04](https://doi.org/10.26881/wg.2019.1.04)

OPPORTUNITIES TO USE INNOVATION PARTNERSHIP IN PUBLIC INVESTMENT

Justyna Bednarz-Szymak

Abstract

In a globalised world, innovation is the driving force of the economy. In Poland, the public sector can support innovation to a large extent thanks to the Public Procurement Law, amended in 2016, which introduced a new procedure - innovation partnership. Judging by the scale of public spending, public procurement can become a powerful tool for the development of innovation in the economy. The aim of this article is to examine how innovation partnership can influence the effectiveness of investment projects. The assessment of processes related to the purchase of innovative solutions by the public sector with the use of public procurement and the innovation partnership mode shows that the use of this mode in various sectors of the economy may significantly improve the quality of tasks performed by them. In the study, the model method was applied based on the evaluation of the practice of using innovation partnerships in selected countries and the analysis of the transferability of these solutions to Poland. The evaluation took into account the specificity of public procurement procedures and innovation partnerships resulting from legal conditions and the national socio-economic environment. Weaknesses in the application of this procedure were identified, which cause that the innovation partnership is not a commonly used mode of investment projects implementation, and recommendations were formulated in order to reverse this trend.

Keywords: innovation partnership, public investment, innovation, public procurement.

JEL Classification: O30, O31, O38

Introduction

In a globalised world, innovation is the driving force of the economy. From the point of view of the state interest, it is very important to develop innovation through the use of public procurement. Therefore, Poland, which is a relatively less developed country than the economic leaders of the region, should put emphasis on the development of innovative technologies, including the

use of public procurement. The Polish private sector has not much experience and adequate financing to carry out innovation processes or to introduce innovative products or services to the market. This is where the role of the state begins, which can support the process of creating and disseminating innovations by initiating procurement of innovations, appropriate financing or sharing risks with entrepreneurs. Unfortunately, at present a significant problem is the minimal activity of Polish contracting authorities in the implementation of tender procedures for innovations. The European legislator in the Directive 2014/24 in Art. 2 point 22 presents the scope of application of the innovation partnership for the development of an innovative product, service or works and subsequent purchases of supplies, services or works resulting from these works, provided that they correspond to the levels of efficiency and maximum costs agreed between the parties (Directive, 2014). The same directive sets out three independent stages of the innovation partnership in Article 31: preparation and conduct of the procedure for awarding the innovation partnership by the contracting authority, carrying out research work by a private entity aimed at carrying out the innovative task described by the contracting authority (innovation stage), placing contracts for the results of research work (innovative product). The innovation partnership offers opportunities that public entities have not had so far. It is enough for the contracting authority to define the functions and purpose of the innovation product, and the rest is handled by private partners with experience and scientific background, which gives unlimited opportunities for the development of a given sector of the economy. Such a solution seems to be ideal for several sectors of the Polish economy, which are in a weak condition due to, among other things, too little state funding. As an example, we may use the water management sector with its flood protection. The threat of floods is one of the most serious threats caused by nature in Poland. This is confirmed by the data of the Government Centre for Security, which, after analysing catastrophic natural phenomena in the years 1990-2010, stated that as much as 98.5% of losses caused by this category of threats in Poland were caused by floods (Zalewski, 2011). The issue of flood protection is the most important for the security of the country and its inhabitants. Due to its geographical location and climatic conditions, Poland is highly exposed to nationwide floods, which are often tragic in their consequences. In the last century there were at least a few so-called 100-year-old waters, which include the floods of 1934, 1970, 1997 and 2010. (Mąka 2014). The state of water management can be a starting point for assessing the effectiveness of purchasing innovative solutions by the public sector using public procurement and the innovation partnership mode. The assessment of this procedure allows to show that the application of this procedure in various sectors of the economy may significantly improve the quality of the tasks performed by them and positively influence the economic rationality of the implemented projects. Indication of weaknesses, which cause that innovation partnership is not a commonly used mode of investment implementation, leads to the formulation of recommendations to reverse this trend.

1. The Role of Innovation Partnership in the Economy

Neither the directives, nor the Public Procurement Law, specify specific prerequisites for the application of the innovation partnership procedure. The only condition is that the contracting authority's demand cannot be satisfied by products, services or works available on the market. The contracting authority is therefore free to choose this procedure, provided that it carries out a detailed market analysis and concludes that there is no innovative product. In Poland, the public sector can support innovation to a large extent through the Public Procurement Law, amended in 2016, which introduced a new mode of innovation partnership. Given the scale of public spending, public procurement can become a powerful tool for the development of innovation in the economy.

Innovative partnership in public procurement is part of the classic understanding of innovation, opening so far little known, but broad opportunities for the development of innovation in the public sphere. The use of this procedure, due to its innovative nature, is a major challenge for contracting authorities. As can be seen from the analysis of public procurement with the use of innovation partnerships in Europe, the EU countries quite tentatively use this mode. Despite the fact that the literature clearly indicates that innovations are an opportunity for the country's economic growth through the development of the SME sector in particular, contracting authorities still use proven and safe modes such as open or restricted tendering. The question arises as to whether it is appropriate to use the public procurement mechanism to promote a pro-innovation economy. Jakob Edler and Luke Georghiou, among others, are in favour of using public procurement to support innovation, arguing that it offers an opportunity to make better use of national or local demand (Edler, Georghiou, 2007). In addition, system and market failures can be overcome by creating demand for new products and services, thus reducing market risk. And most importantly, innovation will improve the quality of public services.

In relation to public sector investment, innovation is a key success factor, e.g. the Innovative Economy Operational Programme, which defines it as the implementation of novelty in business practice, which means that innovation is understood as the introduction of a new or significantly improved solution in relation to a product (goods or services), process, marketing or organisation (Oslo manual, 2005).

Thus, innovation is nothing more than a new idea for a product, a service, a new company strategy and everything that no one has ever heard of before. At present, there are several divisions of innovation in the literature. The basic one distinguishes product, process, organisational and marketing innovations (Oslo Manual, 2005). Product innovations concern the creation of a new product or service, or the improvement of an existing product or service. This also includes finding a new use for a product that is already in use for another purpose. Process innovation concerns the implementation of new processes in the company or the improvement of those that exist, e.g. changes in the production method. Organisational innovation deals with improving the performance of the team, increasing its effectiveness, changes in existing management schemes to other. Marketing innovations are nothing more than the implementation of new marketing methods such as changes in product promotion, changes in packaging, distribution (Oslo Manual, 2005).

Article 73a (3) of the Public Procurement Law defines an innovative product, service or construction work as a new or significantly improved product, service or process, including the process of production, construction or construction, a new marketing method or a new organisational method in business activity, work organisation or external relations (the Act of 2004). The key difference between the concept in the general sense and that defined in the literature and strategic documents is that an innovative product defined by law is a new or significantly improved product. In the light of the PPL Act, finding a new application for a product already existing and used for another purpose cannot be classified as innovative activities. This means that the PPL narrows the concept of innovation and excludes process-related innovations from it. Despite this limitation, the mode of innovation partnership introduced in the Act favours increasing innovation at the interface between the public and private sector. Innovation partnership is to some extent based on the idea of pre-commercial procurement (PCP), which is an ideal solution for creating and then purchasing an innovative product that has not existed on the market so far.

Pre-commercial Procurement is a relatively modern and innovative instrument, used on a large scale, especially in the United States. As an example, the SBIR (Small Business Innovation Research Program), implemented since 1982, aimed at developing technological innovation with the use of small enterprises to conduct research that meets the needs of the state,

encouraging the development of technological innovation by disadvantaged people and increasing the commercialisation of research financed from federal funds (Kardas, 2017).

The European Union took an interest in this issue relatively recently, only in 2006 (Innovative, 2012) and in 2011 the European Commission published a Green Paper (Green Paper, 2011) clearly indicating the need to introduce fundamental changes in the system of public procurement in the EU and thus gave the green light so that EU countries could engage public funds in the search for new solutions not yet discovered.

The PCP consists of three main phases (Komunikat, 2007):

1. Searching for solutions;
2. Production of prototypes;
3. Initial development of a pre-commercial number of new products in the form of a test series.

The use of pre-commercial orders brings a lot of benefits and opportunities for both the ordering parties and suppliers, i.e.:

1. Sharing risks between the ordering party and the supplier. The employer bears part of the costs of the research and development work in return for maintaining the rights to the results of the work.
2. Creation of products that are "tailor-made" to meet the needs of public contracting entities. The purchase of a finished product does not exhaust the needs of the customer, and the testing and evaluation phase of prototypes allows to obtain a product appropriate to the needs of the customer;
3. Learning by the parties to an order - the needs of the ordering party and the technological limitations of the suppliers.
4. The emergence of innovative products on the market, with the help of public funds, gives the suppliers an opportunity to acquire new technologies and start research work.
5. Sharing the risks and benefits with the supplier gives buyers a cheaper offer.

The Netherlands and the United Kingdom are the largest examples of pre-commercial public procurement in the European Union.

The Netherlands is the lowest country in Europe, which is a major challenge for water management. In the Netherlands there are more than 17,000.00 kilometres of dikes to protect adjacent areas (fields, crops, houses) from flooding (Seminar, 2004). Unfortunately, video monitoring and visual inspection of endangered sections of embankments were unreliable and floodbanks were interrupted. In 2006, the authorities decided on the need to find a solution that would allow the risk to be detected and the disaster to be prevented beforehand. For this purpose, a competition for the creation of an appropriate concept has been announced. The PCP procedure consisted of two stages. Out of 21 submitted proposals, 5 were selected and part of the research was financed, and work on the solution concept was to be carried out over the next 6 months. Two of the five concepts best met the criteria set by the employer, i.e. GeoBeads sensors (the concept of sensors placed inside the shafts) and the satellite monitoring system and moved on to the second stage. The projects received 450,000 euros in funding and two years to develop a prototype solution. Contractors retained the right to develop solutions and could sell their products to companies and public institutions not only in the Netherlands (Innovative, 2012).

Pre-commercial public procurement has also emerged in the UK, primarily used in the health sector. Although it is not directly related to the application of pre-commercial procurement in water management, it is a model of how to effectively use this procurement mode. An excellent illustration of the process is the operation of a blood donation institution in the UK, which for years has been struggling with a problem accompanying the blood donation, loss of consciousness by more than 300 people a day. In order for the donor to regain consciousness, he

or she had to change his or her position from sitting to lying down, which required additional staff and time, and this resulted in longer queues for blood donation, prolonged the patient service process and thus increased costs. A PCP procedure was announced to find a product that would enable a quick change in the position of the donor and the possibility of helping him/her. As a result of the procedure, a chair was selected which allowed to change quickly the unconscious person's position. After testing the prototype, it turned out that the chair (New Blood&Transfusion donor chair) meets the required conditions so it was purchased and distributed in England and North Wales (Innowacyjne, 2012). From an economic point of view, the most important thing in this process is that with relatively little effort, in cooperation with private companies, it was possible to find a product that solved the problem forever. It turned out that even for small undertakings on a national scale, it is worth drawing on the potential of the private sector and finding an innovative solution. This is a good example for those institutions that are afraid of implementing innovation processes, because it shows that it is worthwhile to start with small innovations and then, gaining experience, to move on to larger and more complex ones with a larger scope. This order also shows how easy it is to reach small entrepreneurs and encourage them to look for innovative solutions. Small orders, with appropriate financing, allow entrepreneurs to initiate the process of creating innovations in the company and can open the way for gaining new experience, purchase orders and thus development.

2. Innovative Partnership as a Mechanism to Stimulate Innovative Actions in Investments Financed by the Public Sector

The amendment to the Public Procurement Law (PPL) act of July 2016 introduced a new public procurement procedure specified in Article 73 a under the name of the Innovation Partnership. It was a necessary change resulting from the obligation to implement Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014. It follows from the preamble to the Directive that the main objective of the revision is to implement the Europe 2020 Strategy for smart, sustainable and inclusive growth, where research and innovation, including eco-innovation and social innovation, are at the heart of this strategy as the main driver of growth and economic development in the EU Member States (Directive, 2014). Pre-commercial procurement was aimed at stimulating the development of new products and strengthening the country's scientific and technological base, as well as meeting the contracting authority's needs. PCP operated mainly where there was a lack of commercial solutions available on the market and was applied mainly in research and development.

In Poland, a pilot project under a pre-commercial procurement was carried out by the National Centre for Research and Development, the Ministry of Transport, Construction and Maritime Economy and the Building Research Institute. The aim of this first project was to develop an easy-to-use optical sensor allowing regular inspection of building structures with a significant risk of collapse (bridges, roads, buildings, industrial halls, etc.), and most importantly, some standard rules for the new solution were developed at that time. The procedure assumed that after identification of needs, a specific problem would be announced and a solution would be searched for. Bids can be submitted by various entities such as companies, consortia or universities. They will have to define their idea, calculate the costs and time needed to complete the task. From among these offers NCRD will select 5 entities, which will receive funds for the execution of the research and development part. The works of the selected entities will be evaluated and 3 companies will receive funding for the creation of the prototype. In the next stage, only 2 companies will receive funds for the production of products, thanks to which it will be possible to solve the selected problem. The risk of possible market failure of the developed product is shared between the public and private sector(<https://www.portalzp.pl>).

Since the entry into force of the amended in 2016 PPL Act in the mode of innovation partnership, single projects have emerged using innovation partnership. For example, Enea Operator Sp. z o.o. initiated proceedings for the supply of balancing meters for the measurement of MV/LV stations, consisting in the design, production and supply of electricity balancing meters for the measurement of MV/LV stations located in the distribution area of Enea Operator Sp. z o.o. (<https://ted.europa.eu/TED/>). Ostrzeszowskie Centrum Zdrowia Sp. z o.o. executes a tender for the design, production and delivery of a comprehensive system of functioning of the Regional Centre for Senior and Oncological Care together with the development of management solutions and the creation of the necessary infrastructure for the functioning of the centre, i.e. the appropriate area of buildings, with the use of innovative solutions. The aim of the proposed project is to develop a model solution for effective provision of health services for the elderly, and then commercialization of the solution (<https://ted.europa.eu/TED/>). As well as an order for comprehensive preparation and implementation of sterilization, cleaning, washing, catering, energy efficiency supervision, building maintenance, building surveillance (security) services and construction works(<https://ted.europa.eu/TED/>). On the other hand, the Police Headquarters in Warsaw is in the process of ordering software for digital data acquisition(<https://ted.europa.eu/TED/>). A tender procedure announced by the National Centre for Research and Development for the development and supply of a series of innovative vehicles for emission-free public transport is also currently under way. The procedure is at the stage of opening initial offers(<https://www.ncbr.gov.pl/programy/fundusze-europejskie>). Bids were submitted for the announced proceedings, which indicates the interest of companies in cooperation with the public sector in the area of creating innovative solutions.

Innovation partnership is to be a kind of a newer, better version of pre-commercial procurement, it is to cover a wider range of products, services and works.

Innovation partnership is a procurement procedure in which, in response to a public contract notice, the contracting authority invites economic operators admitted to participate in the procedure to submit initial tenders, negotiates with them and then invites to submit tenders for the development of an innovative product, service or works not available on the market and the sale of those products, services or works. For the procedure to be carried out well, the orderer must at least: identify the need for an innovative product, service or works; provide information on the division of the negotiations into stages in order to limit the number of tenders to be negotiated by applying the criteria for evaluating the tenders indicated in the contract documents, if such division is provided for; identify a list of declarations or documents proving that the conditions for participation in the procedure are met and that there are no grounds for exclusion; provide elements of the description of the subject-matter of the contract defining the minimum requirements to be met by all tenders; inform about the stages of the innovation partnership, the objectives to be achieved after each stage and the intermediate objectives; define the rules for the selection of the partner(s), including the criteria for the evaluation of tenders; inform about the establishment of the innovation partnership with only one contractor or the possibility of its establishment with several contractors; inform of the possibility of terminating the innovation partnership or reducing the number of partners after each stage and the conditions for using these possibilities, if such a possibility exists; present solutions applicable to intellectual property rights.

Innovation partnership was established on the basis of pre-commercial procurement through a kind of evolution based on the experience of legislators and the need of the market. The features of both procedures are summarised in Table 1.

Table 1: Comparison of pre-commercial procurement and innovation partnerships

Characteristic	Pre-commercial Procurement	Innovation Partnership
----------------	----------------------------	------------------------

Regulation	the principles set out in the European Commission communications on pre-commercial procurement (...)	Directive 2014/24/EU
Contracted Items	research services, the result of which is only the prototype tested; product not available on the market	development and purchase of innovative products, services or works that are not available on the market; product not available on the market
Contracting Process	multi-stage, multiple contractors, in the final stage at least two contractors	multi-stage, multiple contractors at the research stage, one contractor to perform the contract
Contract Type	experimental procurement, research and development phase only	experimental procurement, research and development and purchasing phase
Innovation Policy	innovative public procurement as a research and development policy	innovative public procurement as a research and development or technology policy

Source: own work on the basis of Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 and M. Kardas, Public procurement as an instrument of innovation policy, Zarządzanie Publiczne No. 1 (35)/2016

3. Assessment of the Impact of Innovation Partnership Procedures on Investment Effectiveness

While the regulation of pre-commercial procurement was based on the general principles set out in the European Commission communications, the innovation partnership was introduced as a separate public procurement procedure and the procedure described in the directive. The subject of the pre-commercial procurement is only research services as a result of which a prototype of a product so far unavailable on the market is created, which is then subjected to testing. In an innovation partnership, the subject of the contract is the development of innovative products, works or services, also unavailable on the market as in pre-commercial procurement, but also their purchase. The course of order execution in both cases is multi-stage, the only difference is that in the innovation partnership only one contractor reaches the final, i.e. the order execution. Both contracts are experimental contracts with a research and development phase, whereas only the innovation partnership has a purchase phase. In summary, pre-commercial procurement is used to support individual stages of the entire innovation process and is not the subject of a single contract. Innovative partnership is a public procurement procedure aimed at the purchase of innovations, therefore, under one contract research and development works are carried out and innovative solutions resulting from them are purchased. Closing the whole process in a single procedure was created from the need for state support for innovation in order to stimulate innovation activities in enterprises and to find solutions to meet the requirements of globalization.

An analysis of the innovation partnership procurement notices published in the TED, the supplement to the Official Journal of the European Union, shows that in 2017 the French benefited the most from this procedure. Among the procedures they have initiated are the contract for a new generation of computer control units (operated to control rail traffic), intelligent

parking lot management service, development of models for active water management at bathing facilities. In 2016 and 2018, France each year awarded three such contracts for rescue and emergency equipment and civil works in industrial plants. Germany, which in 2017 and 2018 awarded 17 contracts in the innovation partnership, is also a clear leader. The 13 contracts in 2018 are primarily for IT services, health and social care services, research and experimental-development services. The UK, the Netherlands and Finland are also increasingly boldly benefiting from innovation partnerships. In Poland, which was mentioned earlier, the order in this mode was carried out by Enea Operator sp. z o.o. for the design, production and supply of electricity balancing meters and by the Central Police Headquarters in Warsaw at development of software for acquisition of digital data.

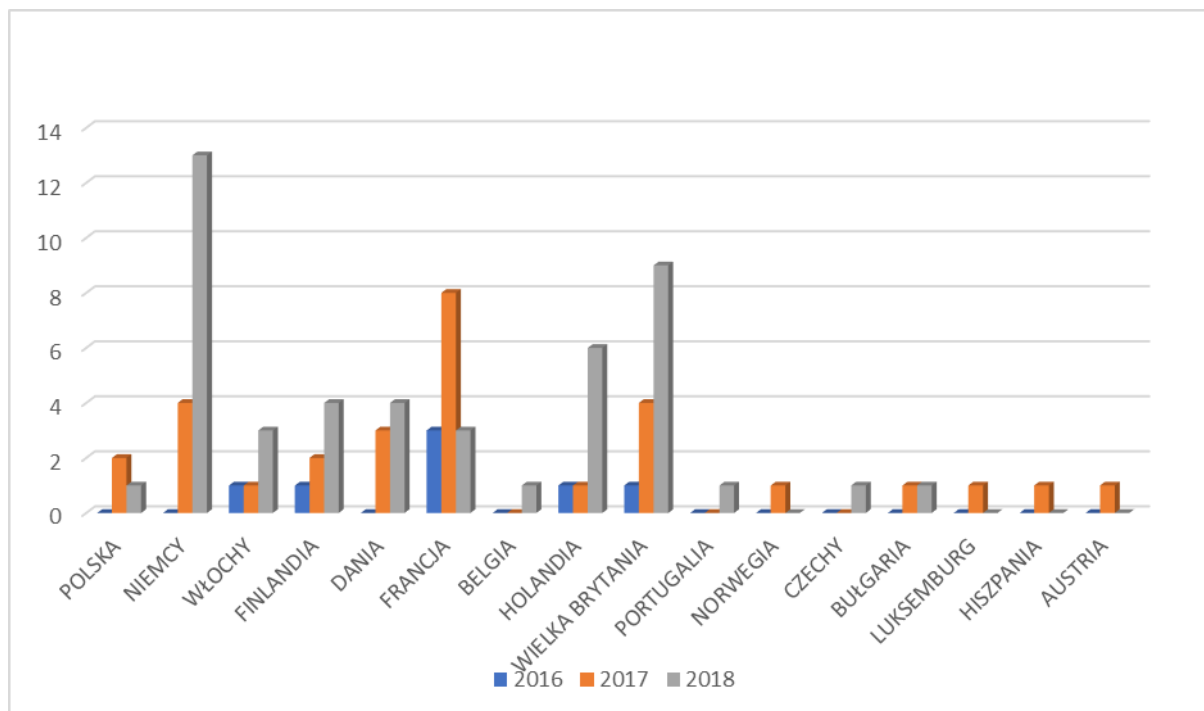


Figure 1: Number of contracts awarded in the Innovative Partnership mode in the EU countries in 2016-2018

Source: based on the contract award notices available in the Supplement to the Official Journal of the European Union available at <https://ted.europa.eu/TED>

Conclusions

According to the reports prepared by the Public Procurement Office, after more than two years after the introduction of the innovation partnership in the Polish public procurement system, this procedure in the EU procedure almost did not exist in practice. The reason for this state is first of all:

1. lack of cooperation at the level of public institutions and citizens in order to identify innovation needs;
2. lack of adequate funding at regional level;
3. lack of inclination to be exposed to any risk;
4. complexity of tasks in the water sector makes it difficult to identify priorities;

Actions that can help to put the innovation partnership into "circulation" are basically:

1. system of mandatory training for procurers;

2. popularisation of innovative solutions based on the example of contracts awarded in other countries, both among contracting authorities, citizens and entrepreneurs;
3. organisation of pilot projects for innovation at national level and regional level;
4. employing in public institutions experts from specific fields who would initiate innovation processes;
5. financing dedicated to innovative solutions;
6. support in planning innovative procurement for the needs of municipalities; support may concern the identification of needs and may be provided by the state by analysing of similar municipalities' needs and selecting the most important ones, in turn, transfer for implementation to municipalities which will start implementing processes aiming at the purchase of specific innovative solutions; interested entities at the level of the municipality may also help in identifying the needs;
7. support for small and medium-sized enterprises in acquiring or expanding knowledge of innovation and innovation needs; such support may be provided by the state through the organisation of information meetings or the sending of brochures, newsletters, as well as the creation of networks between entrepreneurs - the merger of entrepreneurs in order to create innovation

A change of mindset geared towards innovation can be the key to using the innovation partnership mode on a wider scale. Problems often arise already at the stage of defining needs and then at the stage of technical feasibility assessment and preparation of proceedings. Creation of innovations is a long-term process and its effects need to be waited for a long time, but even more importantly, every effort should be made to ensure that contracting authorities receive appropriate tools for their implementation, and entrepreneurs for bidding for such contracts. The barrier of a low willingness to bear the risk associated with the use of innovative solutions, despite the fact that the risk is borne by both sides of the partnership, is also to be overcome, after all, insurance companies are engaged in insuring the risk.

The provision of the innovation partnership is modern and very different from the public procurement system, which was previously known. Until now, it was necessary to use various provisions contained in the act in order to carry out the order for innovation. The said mode is formalised in such a way that it does not leave any questions about the procedure and, at the same time, gives the opportunity to negotiate and choose the most appropriate innovation product.

The range of possible innovative solutions on the Polish market is huge, because we are still far behind the leaders in the field of innovation. Innovative partnership is a mode which absolutely must be well established in public investments. If Poland wants to be visible in Europe and in the world, it has to introduce innovative solutions to everyday social life in every possible area, because it will facilitate not only the broadly understood movement in the public space, but will stimulate the growth of innovative solutions among citizens.

References

- Dyrektywy Parlamentu Europejskiego i Rady 2014/24/UE z dnia 26 lutego 2014 roku w sprawie zamówień publicznych, uchylająca dyrektywę 2004/18/WE.
- Edler J., Georghiou L. (2007), Public procurement and innovation – resurrecting the demand side. *Research Policy* 36.
- Innowacyjne i przedkomercyjne zamówienia publiczne, Polska Agencja Rozwoju Przedsiębiorczości 2012, Warszawa.
- Kardas M. (2017), Zamówienia na usługi badawczo-rozwojowe w świetle doświadczeń zagranicznych i krajowych, *Zagadnienia naukoznawstwa* 2(212).

- Kardas M. (2016), Zamówienia publiczne jako instrument polityki innowacyjnej, *Zarządzanie Publiczne*, nr 1/35.
- Komunikat Komisji do Parlamentu Europejskiego, Rady, Europejskiego Komitetu Ekonomiczno-Społecznego i Komitetu Regionów, Dokument roboczy służb komisji, (2007) Bruksela.
- Mąka K. (2014), *System Ochrony Przeciwpowodziowej w Polsce*, Zadania organów administracji publicznej w fazach zapobiegania i reagowania na zagrożenia powodziowe.
- Narodowe Centrum Badań i Rozwoju (2018), <https://www.portalzp.pl/top-tematy/zamowienia-przedkomercyjne-to-innowacyjne-rozwiazania-1043.html>. (dostęp 17.01.2019)
- Oslo Manual, (2005)*Guidelines for Collecting and Interpretig Innovation Data*, wydanie trzecie, wspólna publikacja OECD (Organisation for Economic Co-Operation and Development) oraz Eurostat (Statistical Office of the European Communities).
- Partnerstwo innowacyjne (2018), <https://www.portalzp.pl/p/partnerstwo-innowacyjne-8824.html> (dostęp 15.12.2018)
- Seminarium Nowe podejścia do zagadnień ochrony przeciwpowodziowej, (2004), *Ochrona przeciwpowodziowa w Holandii*, Gdańsk, pod red. H. Zaradnego, Instytut Budownictwa Wodnego PAN, Centrum Inżynierii Środowiska i Mechaniki CEM.
- Strategia Rozwoju Systemu Bezpieczeństwa Narodowego Rzeczypospolitej Polskiej 2022, Biuro Bezpieczeństwa Narodowego, (2013), www.bbn.gov.pl/download/1/14652/SRSBNRPprzyjeta_090413.pdf, 2 XI 2013 (dostęp 15.12.2018)
- TendersElectronicDaily, Suplement do Dziennika Urzędowego Unii Europejskiej (2018), <https://ted.europa.eu/TED> (dostęp 15.12.2018)
- Ustawa Prawo zamówień publicznych (t.j z Dz. U z 2018r. poz.1986).
- Zamówienia przedkomercyjne to innowacyjne rozwiązania (2018), <https://www.portalzp.pl/top-tematy/zamowienia-przedkomercyjne-to-innowacyjne-rozwiazania-1043.html>. (dostęp 15.12.2018)
- Zielona Księga w sprawie modernizacji polityki UE w dziedzinie zamówień publicznych W kierunku zwiększenia skuteczności europejskiego rynku zamówień* (2011), Komisja Europejska.
- XXV konferencja naukowo-techniczna, Szczecin–Międzyzdroje, t. 1, red. M. Kaszyńska (2011), Zalewski J., *Odra w kontekście sytuacji zagrożenia powodziowego i awarii budowlanych*, [w:] *Awarie budowlane: zapobieganie, diagnostyka, naprawy, rekonstrukcje*.

Justyna Bednarz-Szymak
Wydział Ekonomiczny Uniwersytetu Gdańskiego
justynab-sz@wp.pl