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APPLICATION OF STAKEHOLDER ANALYSIS IN UNIVERSITY-OWNED SPECIAL PURPOSE VEHICLES

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Purpose: The key driver to discussing this topic is the research gap in the field of management of SPVs in the ecosystem of innovation and adds the possibility of applying stakeholder theory as a tool supporting their management.
Design/methodology/approach: The aim of the article is to indicate the theoretical basis for the application of stakeholder theory as a tool supporting the management of SPVs. The article is based on a review of domestic and foreign literature and analyses the content of reports presenting Polish experiences regarding the performance of university-owned SPVs.
Findings: Due to the specific conditions of functioning of SPVs, stakeholder analysis seems to be a useful tool in identifying the expectations of particular interest groups, and subsequently in undertaking actions aimed at effective management of their activities and creating value for the key stakeholders of SPVs. As a result, it may contribute to the increased effectiveness of companies and to more effective use of innovative potential through closer cooperation between science and business in the region.
Research limitations/implications: Further research can focus on answers to the question: Are the managers of university-owned SPVs aware of the expectations of their key stakeholders?
Practical implications: Stakeholder analysis may be an essential aid for the managers of SPVs in shaping their relations with the environment and building added value for key stakeholders.
Originality/value: The article fills a research gap in the field of management of SPVs in the ecosystem of innovation and adds the possibility of applying stakeholder theory as a tool supporting their management.

Keywords: university-owned special purpose vehicle (SPV), stakeholders, stakeholder analysis, value creation.

Category of the paper: case study.

1. Introduction

The Triple Helix reflects the collaboration of entities from three sectors (Barańska-Fischer et al., 2016; Fransman, 2014):

1. private sphere, which groups business people and investors, i.e. development-oriented enterprises, and business environment institutions (e.g. technology transfer centres, loan funds and credit guarantees, technology and entrepreneurship incubators, technology parks, training and advisory centres);
2. public sphere – self-government and public administration, whose tasks include providing appropriate conditions for development and encouraging cooperation in the region through shaping and implementing regional policies, such as innovation policy;
3. state-owned research units – universities and research institutes, as well as the research units of the Polish Academy of Sciences, which generate new knowledge underlying innovative products with practical market application.

In accordance with the idea of the innovation ecosystem, conditions are created for cooperation of the above entities in order to conduct processes of knowledge transfer and commercialisation of new solutions, and thus to enhance innovation in the region. This is extremely important given the relatively low level of innovativeness of the Polish economy[1].

The changes introduced to the world of science by the new act on higher education, the so-called Constitution for Science (which entered into force on 1 September 2018), are aimed at stimulating cooperation between scientists and business representatives. It is a response to changing conditions for the functioning of scientific entities (globalisation, technological progress, cultural changes, rising costs and problems with raising funds) and to the implementation of a new model of the so-called entrepreneurial university or a third generation university (Wissema, 2009). Apart from enterprises and investors, the science sector, together with universities and academia[2], plays a significant role in the development of innovation (Carlsson et al., 2002; Castellacci, and Natera, 2013).

In order to increase activity in the field of transferring knowledge to the economy, the possibilities for universities to establish special purpose vehicles (SPVs) have been extended, and the scope of economic activity conducted by these companies has been enlarged. Although this solution is an opportunity to intensify commercialisation processes, its potential is not being fully utilised. The low effectiveness of special purpose vehicles has so far resulted, among other things, from difficulties in shaping effective relations by the SCVs in the

[1] In the European Innovation Scoreboard, Poland is a "moderate innovator". (4th last position in 2018). Moreover, the activity of the domestic R&D sector is weaker than its capabilities indicate (R&D expenditure in relation to GDP amounted to 0.97% in 2016, while the average in the European Union is more than twice as high). Other rankings confirm the state of innovativeness of the Polish economy, e.g. in the Bloomberg ranking for 2019 (Bloomberg 2019 Innovation Index), Poland was ranked 22nd, which means a decrease by one position.

[2] The future of science and its role in the innovation ecosystem depends to a large extent on successful cooperation with business, which was emphasised in the second Act on innovation (in force since 1 January 2018).

ecosystem of university innovation. What seems the right tool to support company management is an analysis of stakeholders, the result of which is the creation of appropriate value for the most important stakeholders of university-owned special purpose vehicles.

The aim of the article is to indicate the theoretical basis for the application of stakeholder theory as a tool supporting SPV management. The basic premise for taking up the topic was the research gap in the field of SPV management in the ecosystem of innovation and the possibility of applying stakeholder theory as a tool supporting its management. In this paper, attempts have been made to answer the following questions:

- Who is a key stakeholder of a university-owned special purpose vehicle?
- How can stakeholder analysis be used in SPV management?

The article is based on a review of domestic and foreign literature and analyses the content of reports presenting Polish experiences regarding the performance of university-owned special purpose vehicles. On the grounds of such collected research material, the results of conducted observations were presented, conclusions concerning the possibility of using the analysis of stakeholders in the special purpose vehicles of a university were drawn, and the directions of further research were proposed.

2. Unused potential of university-owned special purpose vehicles

The possibility of establishing a special purpose vehicle by public research units (PRUs; public universities, research institutes and scientific institutes of the Polish Academy of Sciences) is an opportunity to establish a public-private partnership between universities and business. It is a relatively new solution for universities, resulting from the amendment of the Act of 18 March 2011 – Law on Higher Education (LHE; in force since 1 October 2011), in response to the need to manage industrial property in terms of finance, law and marketing, as well as to universities' capacity to conduct business activities and operate in market conditions. Pursuant to the Act, a university-owned special purpose vehicle is defined as a sole proprietorship company established by public or non-public universities for the purpose of indirect commercialisation (Article 86a, section 1 of the LHE). The intentional nature of the vehicle results from the scope of its activity, which includes commercialisation projects, such as taking up or acquiring shares and stocks in other companies in order to implement the results of scientific research or development works (indirect commercialisation) (Art. 2, section 1, item 36 of the LHE). The Act also allows SPVs to carry out direct commercialisation (sale or licensing of R&D results; commissioned works) and to manage research infrastructure in terms of its commercial use.

In university and business cooperation, where one of the parties is represented by scientists and the other by entrepreneurs (investors, innovators), different institutional governance types (i.e. the public and the private sector), organisations with different values and operating procedures, often pursuing different goals, collide. In this relation, the state is an important but somewhat covert participant that imposes certain barriers, but also creates new opportunities. A university-owned special purpose vehicle is a kind of platform for cooperation between academia and business (Szarek and Pachciarek, 2019).

As reported by the National Chamber of Control, in 2013-2017, the activity of companies established by scientific entities was not an effective method of transferring the results of scientific research or development work to the economy (Narodowa Izba Kontroli, 2018). The report on the implementation of the SPIN-TECH[3] also shows that the role of special purpose vehicles in the process of commercialisation and technology transfer has so far been minor (Narodowe Centrum Badań i Rozwoju, 2016). The following factors contributed to this (Narodowa Izba Kontroli, 2018; Narodowe Centrum Badań i Rozwoju, 2016; Szarek and Pachciarek, 2019):

- lack of resources in the form of research results with commercial potential;
- irregularities in the performance of companies due to non-compliance with the provisions of the Commercial Companies Code;
- treating a special purpose vehicle as a large business entity, which results from ownership relations with the university, which restricts the scope of their participation in projects that require their own contribution or applying for EU funds;
- lack of pressure and appropriate incentives for researchers to commercialise their research results;
- despite changes in the Regulation on quality evaluation of scientific activities, inadequate parametric evaluation of the capacity for technology transfer and commercialisation activities of researchers and state-owned research units;
- an insufficient number of systemic incentives for enterprises to engage in R&D, in particular to cooperate with scientific entities;
- high reluctance and lack of trust of private investors to cooperate with scientific and public entities;
- the lack of efficient communication mechanisms between economic and scientific entities results in poor knowledge about the entrepreneurs' needs and the universities' potential;
- mismatch between the offer of intellectual goods and the market, which is the effect of the absence of market demand research;

[3] The SPIN-TECH programme of the National Centre for Research and Development was implemented in the years 2012-2016 and consisted in supporting the operational activities of special purpose vehicles established by state-owned research units.

- insufficient financing of processes related to commercialisation;
- dependence of companies on the support of its founder, i.e. the university;
- the obligation to comply with the provisions of the Public Procurement Law, which may prevent effective cooperation between the home university and the special purpose vehicle established by this university;
- the role of the university-owned SPV and the Technology Transfer Centre within the structure of the state-owned research unit is not formally clarified, particularly the division or coordination of powers among them;
- non-commercialisation activities as a need to maintain financial liquidity and retain human resources (there are known cases of university-owned SPVs conducting business activities, e.g. renting parking spaces);
- shortage of professional managerial and brokerage staff;
- difficulty in determining the efficiency measures of SPVs, although this problem is understandable from the point of view of the limited experience in SPV supervision on the one hand and management of such complex entities on the other.

The above factors result not only from the legal conditions of university-owned SPVs, but also from organisational or relational conditions, and above all, to a large extent, they are the result of difficulties in shaping appropriate relations with stakeholders.

3. Analysis of stakeholders of university-owned special purpose vehicle

Each organisation, including a university-owned special purpose vehicle, operates in a specific environment. This environment consists of many entities, called stakeholders, who influence the organisation's operation, development and survival (Freeman, 2010; Phillips, 2003). In the case of a special purpose vehicle, these are particular groups of external stakeholders (stakeholders coming from the area of research, e.g. scientists, Technology Transfer Centres, business stakeholders, e.g. enterprises interested in innovations, and public stakeholders, e.g. the Ministry of Science and Higher Education, the National Centre for Research and Development) and internal stakeholders (e.g. the management board, innovation brokers). These groups create an ecosystem of university innovations.

Freeman (2010) stresses the importance of proper stakeholder management, which includes communicating, negotiating, managing relationships with them and encouraging stakeholders to act and behave in a way that is beneficial to the organisation (Harrison, and St. John, 1994). Therefore, stakeholder management supports meeting the organisation's objectives (Harrison et al., 2015). Market success can be achieved through an appropriate management system that creates value on a continuous basis (Tantalo, and Priem, 2014). This value is created in relationships with a wide range of stakeholders (Freeman, 2010; Freeman et al., 2007; Freeman

et al., 2004; Sundaram and Inkpen, 2004). Each stakeholder has their own set of expectations towards the organisation, which acts as a specific measure to assess its performance. The awareness of benefits expected by particular stakeholders of an organisation and the level to which material and non-material expectations of particular groups are satisfied constitute an added value for the organisation, which is provided to its stakeholders. Systematically measured company added value is a source of information about the pace of company growth and enables managers to make informed strategic decisions (Lozano-Platonoff, 2009). Meeting the stakeholders' expectations determines the effectiveness of the organisation's operations, because individual interest groups generate a differentiated equivalent for the benefits received (e.g. cash from customers or owners, societal approval of development activities, as well as employee commitment) (Lozano-Platonoff, and Rudawska, 2013).

Creating value for stakeholders becomes more complicated when different interest groups have competitive goals and expectations. Managers choose a strategy and the means of its implementation so that they can simultaneously optimise and balance the needs (expectations) of stakeholders (Freeman, 2010; Freeman et al., 2007). The value of a company grows in line with the satisfaction of all the stakeholders' needs. The generation of value for owners remains the overarching goal (Stout, 2012), but this will only be possible if the needs of other interest groups are sufficiently met (2013, p. 143). A slightly different approach is taken by Tantalo and Priem (2014), who introduce the concept of *stakeholder synergy*, which consists in creating value for many interest groups by taking appropriate strategic actions that offer usability instead of prioritising and making compromises.

In the context of special purpose vehicles, it is of key importance who the key stakeholder is and for whom we create value. What values do key stakeholders expect? To this end, the analysis of interest groups can be employed. According to Mitchell, Agle, Wood (1997) and Tantalo, Priem (2014), key (relevant) stakeholders are groups that are essential to the survival of an organisation and have the greatest impact on its operations. It is necessary to identify the expectations of these stakeholders and then choose the methods of their implementation and create the desired value (Vidal et al., 2016; Freeman et al., 2004) (Figure 1).

The analysis of stakeholders' expectations and the value created with them in mind was performed with the exclusion of internal stakeholders (Table 1). This results from the observation that it is currently more difficult to shape relations with external stakeholders than inside a special purpose vehicle; all the more so because a majority of SPVs do not employ staff, and almost all of them are microenterprises in this respect.

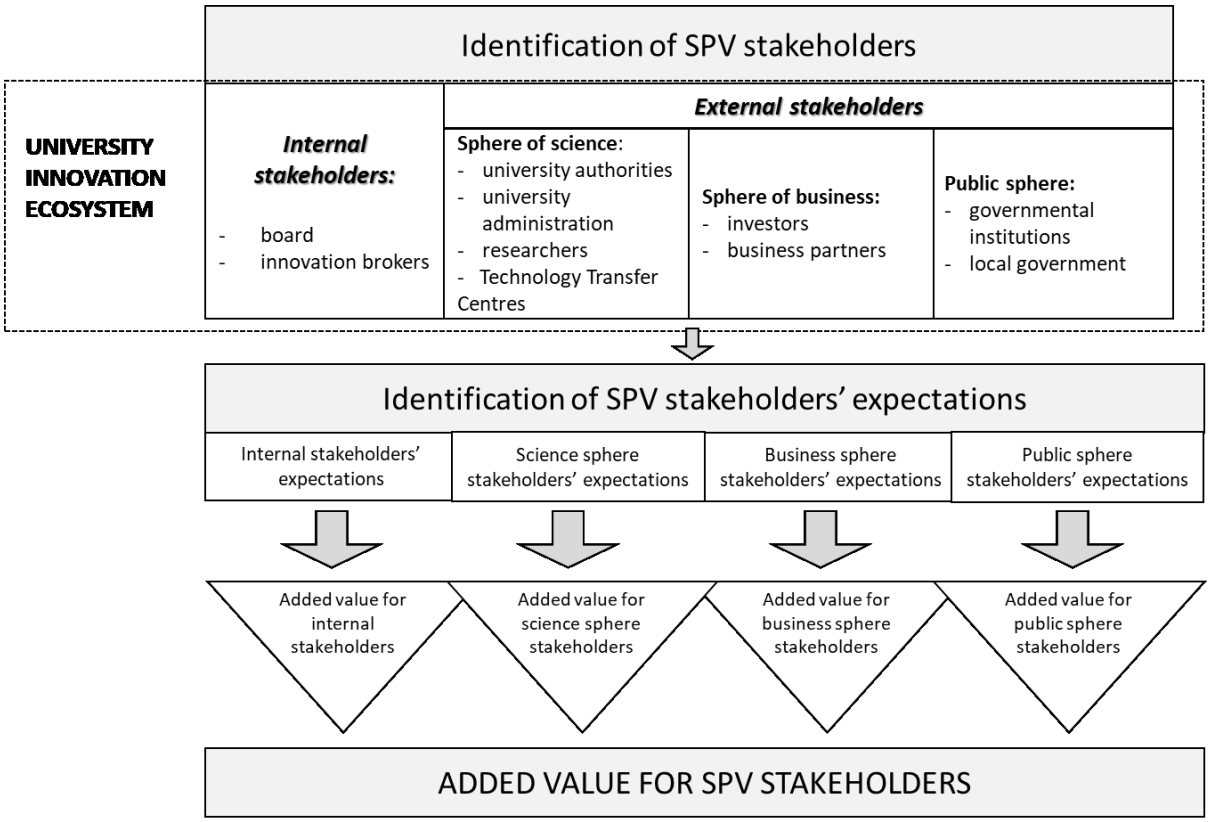

Figure 1. Creating value for stakeholders in university-owned special purpose vehicles. Source: own study based on (Lozano Platonoff, 2009; Freeman et al., 2007).

Table 1.
Key stakeholders in a university-owned special purpose vehicle, their expectations and the value provided to stakeholders by such SPVs

Stakeholders	Stakeholders' expectations	Value provided to stakeholders
University Senate and Head	• SPV revenues and operating costs • university income • university reputation • parameterisation result • practical application of research results • compliance with standards competent managerial staff and skilful management	• implementation of research and development projects with the use of external financing • additional source of income for the university from the SPV's activities • positive image • innovativeness of the university • cooperation with business • points to be parameterised
Scientists*	• support in transforming knowledge into business ideas • marketing support, • managerial support • support for fundraising • assistance in finding a business partner • support in setting up spin-off companies • support in negotiations with business • clear and accessible information • simplified procedures compared to administrative barriers in state-owned research units • open attitude of cooperation instead of administrative procedures	• managerial competences • marketing competences • gaining capital for development • spin-off companies • collaboration with business

Cont. table 1.

Technology Transfer Centre	• **attractive investment offer** • **transparency of actions** • **dynamic operation** • **open cooperation** • **access to researchers**	• **expanded range of commercialisation tools** • **collaboration**
Investors	• transparency of actions • support for the development of products and services • cost-effectiveness of current research work • access to knowledge • intellectual property available in market terms	• possibility of investing in projects with a potentially high rate of return • transparency • faster decision making
Business partners	• support for R&D projects • support for development of products and services • cost-effective research work • access to knowledge • intellectual property available in market terms	• information on scientific project results made available • carrying out commissioned work • rational estimation of costs • fair intellectual property sharing • rational valuation of intellectual property
Governmental institutions	• compliance with standards • competent management bodies • development of academic entrepreneurship • practical application of research results • growth of national innovation	• products for commercialisation • spin-off businesses • science-business cooperation • improved quality of life and social well-being • innovation
Local government	• regional economic development • safeguarding jobs • development of academic entrepreneurship • development of innovation in region	• better quality of life and social well-being • innovation • new companies • new jobs • higher tax revenues

* university staff, doctoral students, students.

Source: own study.

The idea behind the special purpose vehicle is to help scientists transform knowledge into a business idea and subsequently into an innovative company. Researchers will expect from a special purpose vehicle what they do not have at all or what they have, but not to a satisfactory degree. These include managerial skills, capital and support in creating academic spin-off companies, as well as the skills to communicate with entrepreneurs.

The effect of the operation of. special purpose vehicles is not only the quantity but also the quality of collaboration between the scientific community and business, which may bring about a number of benefits for the university, such as better practical use of research results in the economic environment, an additional source of income for the university and more funds for financing scientific and research works. The owners of special purpose vehicles, i.e. state-owned research units, constitute an important group of SPV stakeholders, as they are the driving force. According to the report on the implementation of the SPIN-TECH programme (Narodowe Centrum Badań i Rozwoju, 2016), the support of university authorities contributes significantly to the intensified commercialisation efforts of SPVs. Appropriately shaped

relations with state-owned research units enhance the operational potential of SPVs by supporting them in such areas as (Narodowe Centrum Badań i Rozwoju, 2016):

- improvement of communication processes, in particular the decision-making process;
- support in building the relationship between SPV and TTC;
- availability of financial resources and in-kind contributions from universities (e.g. premises, laboratories);
- access to channels of communication with scientists or, in the case of higher education institutions, with deans of faculties;
- joint promotion of SPV and state-owned research units outside the university (benefiting from the university's reputation in contacts with investors).

It is hard to overestimate the importance of special purpose vehicles for business people, who gain a reliable partner for cooperation who is able to keep pace in terms of fast decision-making and organisational efficiency while having similar objectives (to maintain business activity and financial liquidity) and organisational culture. The recognition of the value of such type of collaboration can be seen in a significant increase in the number of works commissioned to businesses by special purpose vehicles, for which the university itself might even be a more appropriate partner, but fewer administrative barriers, more dynamic cooperation and greater openness to such cooperation give special purpose vehicles a definite advantage. Therefore, the development of special purpose vehicles may certainly be an important factor encouraging businesses to engage in technology transfer processes for the benefit of innovation in the entire national economy. The condition in this case, however, is further professionalisation of the operation of SPVs, improvement of their staff's managerial and brokerage skills, as well as providing them with the material basis for their functioning so that they can focus their activities on the indirect commercialisation of research results.

It is impossible to ignore public administration and self-government institutions in this analysis. The increase in innovativeness of economy, generation of specialist, highly paid jobs and the development of academic entrepreneurship should constitute the basic agenda of institutions involved in economic growth and in the advancement of higher education in Poland. Additionally, at the regional and local level, the effective activity of special purpose vehicles may contribute to building the economic identity of the region and support the development of regional smart specialisations.

4. Conclusions

Stakeholder analysis is fundamental for managing relations with stakeholders and creating values for them. The expectations and activities of individual stakeholder groups can have a significant impact on the functioning and the direction of SPV development. According to

Tantalo and Priem (2014), sustainable value creation for all relevant stakeholders is likely to lead to a competitive advantage and good financial performance in the long term. Taking into account the large diversity of stakeholder groups of special purpose vehicles (scientific community, business, members of public administration and local government), which is significantly higher than other business entities of a similar size, the tool presented in the article may be an essential aid for SPV managers in shaping their relations with the environment and building added value for key stakeholders.

Further research concerning management in university-owned special purpose vehicles can focus on the answers to the following questions:

- Are the managers of university-owned special purpose vehicles aware of the expectations of their key stakeholders?
- What are the conditions for the management of special purpose vehicles?
- What is added value and how can it be created for the stakeholders of university-owned special purpose vehicles?

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