

Summary of a doctoral thesis
written under the scientific direction of
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"Model of the ecosystem of commercialisation of the results of research and
development work in Poland"

The dissertation deals with the issue of the ecosystem of commercialisation of R&D results in Poland. Ecosystems have now become one of the most popular new economic solutions and are an essential stimulator of the development of world economies. Ecosystems create new social phenomena, facilitating the organisation of communities that think alike and have similar cultural and functional standards and needs. The theoretical and cognitive research made it possible to achieve the main goal (MG): to develop an ecosystem model for commercialising R&D results in Poland. In order to achieve the main objective, specific objectives were adopted: theoretical-cognitive and functional. The theoretical-cognitive objectives assume the identification of the determinants of the formation of ecosystems containing elements of commercialisation of R&D results, as well as the identification of the elements and characteristics that characterise them and the comparison of life cycle phases. Moreover, the functional objective contains recommendations for further development of the ecosystem of commercialisation of the results of research and development work in Poland. For the purposes of the research assumptions being carried out, two iterations of the research model of the ecosystem for commercialization of the results of works were developed. The model presents the relationships that will be tested empirically.

The research model, literature review, and field research assume the verification of the following hypotheses:

- HG. The ecosystem of commercialisation of R&D results in Poland is in Phase II of the life cycle - the growth phase.
- H1. The model of the ecosystem of commercialization of R&D results in Poland is created by universities and entities associated with them operating under specific conditions (legal, financial, potential of the place and cooperation). The links between these elements are the main factor activating its development..
- H2. The ecosystem of commercialisation of R&D results is part of the innovation ecosystem.
- H3. The phases of the life cycle of the commercialisation of the R&D results ecosystem depend most on the availability of stakeholder groups.
- H4. The effectiveness and development of the commercialised ecosystem of R&D results are determined, among other things, by the diverse relationships between its stakeholders.

The achievement of the goals of the dissertation was subordinated to selecting research objects. The empirical research was divided into two parts. The first one involved multiple case studies and a comparative analysis of seven selected foreign ecosystems containing elements of commercialisation of R&D results. It was exploratory and provided a basis for verification of the research model and a prelude to further research on the commercialisation ecosystem of R&D results in Poland. The second part of the empirical research included qualitative research in five selected centres (hubs) in Poland, complemented by quantitative research, including an analysis of the relationships between stakeholders in the ecosystem of commercialisation of R&D results in Poland.

The composition of the work reflects the implementation of the research objectives. The work consists of five chapters. The first two chapters present the results of a systematic literature review. The third chapter presents the research methodology. The fourth chapter is the results of a comparative analysis of globally selected case studies of ecosystems containing elements of commercialisation of R&D results. The last chapter, the fifth, contains the results of empirical research, the developed model of the ecosystem of commercialisation of R&D results in Poland and recommendations relevant to the further development of the ecosystem.

The conclusion of the work contains conclusions formulated in the course of the literature review and empirical research, as well as directions for further research to validate the developed model of the ecosystem of commercialisation of the results of R&D work in Poland. The work is supplemented by a bibliography and a list of tables and figures included in the work. An integral part of the work is an appendix, which includes: templates of the survey questionnaire for empirical research, statistical analysis carried out for quantitative research, and data summary - for selected entities in selected centres in Poland (SNA analysis). It is suggested to extend the research on the strength of the impact of the defined elements and characteristics of the ecosystem of commercialisation of R&D results on the ability to create young technological companies (spin-offs, start-ups) by the stakeholders operating in the ecosystem and additionally on the creation of specific quantified methods for assessing the various determinants of ecosystem formation. It could be an attempt to determine the relevant mechanisms for stimulating and assessing the development of the ecosystem of commercialisation of R&D results. The need to pay attention to this research area stems from the belief in ecosystems' role in transforming companies, regions and national economies.