

## **Unpacking the „black box” of innovation subsidies: reconstructing the causal mechanisms of intervention with the use of set-theoretic methodology**

The objective of the study is to understand how subsidies, the most dominant tool for supporting innovation in Poland, lead to various effects at company level in Poland. The project will provide results that will help understand process-transmitting causal forces from subsidy to higher innovativeness of the company and configurations of conditions leading to a positive or negative outcome of the subsidy.

It is worth noting that the pioneering nature of this project is the analysis of the configuration of factors as opposed to the previous approaches.

The causal mechanism of innovation subsidies is relatively undertheorized, taking into account the popularity of subsidies as a tool of innovation policy. It may even be treated as an example of black box thinking, which is present in innovation policy. Though previous studies have identified certain factors accounting for the effects of subsidy, they have not assessed the associations and interactions between them. Thus, innovation subsidies are among the oldest and most important tools of innovation policy. They are based on the linear model of innovation, which is currently perceived as too simplistic and ignores the complexity of the actual process. In order to overcome these limitations, this research project will investigate the interaction of numerous causes that lead to the observed effects.

The results obtained in the research process will fill the research and theory gap. The project will develop a “middle-range” theory of innovation subsidies. According to analytical sociology and process tracing approaches, the theory will consist of trigger entities involved in the stages of the process, activities of the entities, outcome, scope conditions, as well as a set of hypotheses related to how activities produce changes that constitute the next stage.

The research will consist of five stages:

1. conceptualization and operationalization of causal mechanism of intervention and the alternative explanations of the outcome;
2. identification of configurations of remote conditions influencing the outcome for the specific intervention
3. preliminary version of the causal mechanism based on in-depth analysis of the first intervention
4. verification of causal mechanism on the second intervention
5. the final version of causal mechanism of innovation subsidies at company level in Poland

This will be achieved by introducing both process tracing and qualitative comparative analysis (QCA). Process tracing will be appropriate to go beyond identifying correlations onto studying the actual causal mechanism. QCA is a useful approach for analyzing causal mechanism involving many conditions and presenting the results in a comprehensible manner. By combining different methodological approaches, we will be able to comprehensively capture this process. Especially because of the innovative research design joining process-tracing with qualitative comparative analysis as a complementary of quasi-experimental studies the project will contribute to the methodology of social sciences in the area of mixed -methods.

The results of the planned research will become an important contribution to current research related to innovation policy and public policy analysis. The project will contribute to our understanding of the most dominant tool of innovation policy and that active innovation policy is one of the major drivers of progress in industrialized nations. The increase of the innovativeness of the economy is considered to be one of the most important challenges for many countries including Poland. The results of the research, in addition to the purely cognitive aspects, can be taken into account by policy makers who construct frames of effective organization of the new model of subsidy process in enterprises.