The reasons for choosing the research topic are connected with the significant change in the geography of innovation observed nowadays, especially the shift of manufacturing activity, including high and medium-high industries, to emerging economies, mainly China. Poland, similarly to China belongs to innovation absorbers and technological followers. The key to development success in these countries lies in closing the "technological gap" by importing existing technology and creating the internal capabilities to utilize and improve on those technologies. However, the pace of closing this technology and innovation gap seems to be different for Poland and China. The key objectives of the project are to:

- measure the dynamics of innovation gap between China and Poland, both directly and indirectly, with reference to the EU average,
- identify the determinants of its evolution,
- measure and compare the processes of convergence or divergence in innovation performance inside China and Poland, taking into account regional factors, including the emergence of clusters,
- assess the role of science, technology and innovation (STI) policy in increasing the innovativeness of the analyzed economies.

The convergence in innovation performance between China and Poland will be measured both directly and indirectly, with reference to the European Union average level. This will enable to compare Chinese and Polish innovation performance and its dynamics with the level achieved by the group of countries forming together the biggest economy in the world, with many member states classified among the world's leading nations in technological development.

The first main hypothesis adopted in the research states that:

**Hypothesis 1**: Poland has an innovation lead over China, but the innovation gap between these two countries has been diminishing since 2007. China is also converging towards the European Union in terms of the innovativeness of the economy, whereas Poland has not been catching up to the EU average level in innovation performance in the analyzed period. The reasons explaining these trends are mainly internal factors, including different approaches to STI policies in both countries.

The role of the factors influencing the dynamics of innovation gap between the analyzed economies is explained by 2 supporting hypotheses, whereas the first one is related to China, and the second to Poland:

**Hypothesis 1a**: The factors determining fast improvement in innovation performance of Chinese economy are: STI policy, emergence of dynamic innovative clusters, huge investments in R&D, human capital development and international technology transfer through FDI.

**Hypothesis 1b**: Poland's economy improvement in innovation performance is a slow process, as this country does not take full advantage of its innovative potential due to many weaknesses of the national innovation system, like low levels of: R&D expenditures, technology commercialization, participation in European STI policy programs, and cooperation in innovation activity.

The scope of the research project is not limited to the cross-country level of analysis, but also takes into account regional perspective, because of the increasingly recognized importance of proximity in stimulating innovation processes, and an observed strong geographical polarization of innovation activity in contemporary world economy, the trend which is very visible especially in China. This leads to the formulation of the next hypothesis for this project:

**Hypothesis 2**: There has been a strong divergence in innovation performance in Poland and China at the regional level, mainly due to the spatial polarization of innovation activity and the emergence of clusters. This uneven development of regional innovation systems in both countries may slow down the process of closing the innovation gap with the EU as a whole at national level.

The research will start with critical analysis of the theoretical foundations in the area of the innovation gap and convergence in innovation performance, methods used in measuring the level of innovativeness of the economy, determinants of innovativeness, innovation policy, smart regional specialization, and regional dimension of innovation, including clusters. This review will aim to identify and explore key casual relationships between innovation determinants and innovation performance. The next step will be to analyze the level of innovativeness of Poland and China, and to measure innovation gaps and convergence/divergence processes for innovation capabilities and position at the international and regional levels. The research will also include econometric modelling of the innovation systems in China and Poland, as well as identification of the most important geographical concentrations of selected high and medium-high technology sectors. The next step of the research will be in-depth (online) interviews with experts in the field of science and innovation policy from China, Poland, and the European Union and its analysis using specialized software. Synthesis of the results of the research will enable to draw the recommendations for the science and innovation policy in the European Union, with focus on strategic policy solutions in Poland.