

The planned research project aims at acquiring new knowledge related to environmental efficiency of organizations. Not only will the research results contribute to gaining knowledge within the scope of environmental efficiency of organizations but also to broadening the understanding of the impact of environmental management systems on environmental efficiency of organizations with reference to the life cycle perspective.

The main objective of the conducted research is to carry out a multidimensional analysis of environmental efficiency of organizations and to define conditioning factors (stimulants and barriers). In the research, it has been assumed that environmental efficiency of organizations is a relative measure of the effects (results) of mitigating negative environmental impact of economic activity. On the other hand, the Environmental Coefficient, which will be developed within the project, is an absolute measure. The Environmental Coefficient results from six sub-effects achieved by the examined entity within the scope of: energy consumption, usage of materials, water consumption, waste production, biodiversity and pollution emission. The following research will be realized within the project:

- developing of the concept of measuring environmental efficiency including the Environmental Coefficient, environmental efficiency of organizations, structural efficiency, the environmental gap and environmental trajectory,
- analysis of environmental statements of organizations registered in the EMAS system and introducing the selected categories into a database,
- preparation of the concept of a survey and in-depth interviews,
- realization of the survey and in-depth interviews – identification of factors determining environmental efficiency of organizations,
- analysis of the survey and in-depth interviews' results – identification of factors determining environmental efficiency of organizations,
- preparation of the database for statistical and econometric research – an introductory analysis of raw data from the survey and EMAS statements,
- calculation of the value of the Environmental Coefficient and its derivatives; the analysis of the sensitivity of the achieved results,
- introductory statistical analysis of the Environmental Coefficient along with the environmental efficiency measures and determining factors,
- econometric analysis – the estimation of the multiple regression models,
- synthesis of the survey results as well as the statistical and econometric analyses.

The realization of the research tasks will contribute to broadening the knowledge of the multidimensional efficiency evaluation of organizations. The results will be useful for teaching the aspects of environmental management as well as preparing interesting publications in respected international scientific journals, papers at international conferences and the doctoral dissertation of a project team member, and will be helpful during the work on the modification of the international environmental management standard.

The research is innovative as so far nobody has made an attempt to develop a multidimensional method for the evaluation of environmental efficiency of organizations, in particular the integration of the approach based on the environmental life cycle assessment methodology (a system approach to environmental efficiency) and the approach, which originates in the production theory, the environmental trajectory conception as well as the comprehensive survey carried out in domestic and foreign organizations of various levels of the environmental management system maturity.