Transport is of great importance for the everyday life of people and for spatial planning and environmental policy. It is responsible for 23% of global greenhouse gas emissions, and reducing these emissions is one of the main ways to mitigate climate change. It is known from previous studies that the inhabitants of central and densely built-up areas are less likely to use the car and travel shorter distances than the inhabitants of more peripheral areas. Some studies also show that urban residents are more likely to travel abroad and fly in airplanes than rural, small-town, or suburban residents. However, there is not enough knowledge about how residential location and other factors affect travel, and how travel behavior changes with time and changes in the environment.

Compared to other regions of the world, few similar studies were conducted in Poland and Central Eastern Europe. Poland is among countries with the fastest growing number of passenger cars per 1000 inhabitants and increasing popularity of international travel, including air travel. Studying changes in travel is important for the lives of residents, urban planning, and reducing greenhouse gas emissions. The unique situation related to the Covid-19 pandemic is an opportunity to study dynamic changes in people's behavior.

The aims of the project are to:

1. Investigate how residents of Polish cities travel,
2. Which factors affect different ways of traveling and travel-related decisions,
3. How travel patterns change over time and with changes in circumstances,
4. What levels of greenhouse gas emissions are associated with travel.

The project focuses on adult residents of Polish cities: Poznań and the Tricity (Gdańsk, Sopot, Gdynia). It involves combining many different quantitative and qualitative methods in several stages, called work packages (WP):

WP1. It includes data collection using a geo-questionnaire, which allows participants to mark places on the map and answer questions about these places. The data will describe travel behavior, characteristics of study participants, their life situation, experiences, and attitudes. We will use geographic information systems (GIS) to describe the characteristics of the built environment and emission coefficients to estimate climate impacts.

WP2. We will analyze the quantitative data using statistical and spatial analysis methods to detect geographical trends, analyze the structure of emissions, compare travel behavior between groups of residents, and identify the main factors affecting travel behaviors.

WP3. We will select participants with whom we conduct in-depth interviews. First, interviews with members of households will be conducted. After a year, one member of each household will be interviewed to discuss changes that have occurred in the meantime and reasons for these changes.

WP4. We will analyze the material from the interviews in a way that allows us to explain the relationships between variables and to discover new ways of interpreting phenomena, understand ways of thinking and making decisions about travel, and reasons for changing behavior. We will analyze qualitative and quantitative data together.

WP5. One year after the survey, participants will take part in a follow-up survey with questions about changes in their behavior and attitudes.

WP6. We will analyze data from the follow-up survey This will allow for estimating changes in travel behavior that occur in the meantime, identify their factors and estimate changes in the amount of greenhouse gases emitted.

WP7. At the end of the project, a synthetic summary of the project will result in academic publications, and a report for policy-makers.

Project results will be widely disseminated in academia, among professionals, decision-makers and the general public. We hope to influence public debate and ways of thinking about transport and its impact on climate change, as well as provide a knowledge base for policy making at municipal and national levels.