The demographic situation in Poland, cultural changes and staff shortages in health and social care make it a socially relevant problem to provide adequate care for the elderly. The opportunities brought by digital transformation are one way of supporting the provision of public social care services. As part of the project: **„Technological trust in human-robot interaction and collaboration in the environment of social welfare homes in Poland"** we plan to establish how the implementation of service robots can support the work of the staff of social welfare homes (SWH) and how the machines will be perceived by SWH residents. We take the level of human trust in the robots as the main evaluation factor. The project aims to investigate and determine: what factors determine the trust of SWH staff in robots, how do they perceive the cooperation with robots in their professional tasks? How do SWH residents perceive the care service provided by robots and what determines the evaluation of this service? What is the reciprocal effect of SWH employees' trust in robots and SWHS residents' trust in robots?

In 2053, people aged 60+ will account for as much as 40% of the total population in Poland. In 2022, there were 2,082 inpatient social care facilities in our country, including 902 social care homes (SWH), with 80,604 residents, 63% of whom were people aged 60+ . New technologies can effectively support the delivery of public social care services, but also significantly reduce their cost. The implementation of robots in service delivery processes, is part of the global megatrend of digital transformation, however, research conducted on the socio-cultural consequences of the digital transformation of public services, shows that recipients prefer direct contact with a human in the role of service provider, especially in the part of the service core e.g. the core of the service is the meeting with the doctor. In contrast, the rest of the service (sheath) e.g. the registration process, can be provided via technology.

The project will investigate to what extent a social care service can be performed by social robots. It will be crucial to find out which activities performed by machines gain acceptance among residents of care homes and which do not (core and envelope of the service). The research is planned to be carried out in 10 nursing homes in Poland. In each of the SWH, surveys, in-depth interviews and an experiment will be carried out, which involves the use of two types of robots: a humanoid social robot (e.g. Pepper, Navel), whose task will be to provide company and entertainment to the residents of the SWH, and a service robot (e.g. Moxi Robot or PUDU), which will carry out support services, such as providing meals or medication to the residents.

Service robots are designed to take action in dynamic human environments, and their subcategory: social robots are the type of machines that humans often anthropomorphise when they interact with them. Human-robot interaction is a scientific field dedicated to understanding, designing and evaluating robotic systems for use by or with humans. It is fundamental to understand the differences between *human robot interaction* (HRI) and *human robot collaboration* (HRC). HRI, or *human robot interaction*, does not necessarily entail a common goal. HRC, on the other hand, requires a common goal pursued by both the robot and the human (task collaboration).

We will explore the interface between SWH staff and robots - in terms of team collaboration and human work support through robot collaboration (HRC), and the interface of social care service delivery to older people (HRI). Both planes are relevant and correlated with each other. Research from the HRI and HRC areas indicates that a key determinant of the quality of collaboration or acceptance of robots is the trust of humans in the machines. We define trust as technological trust, divided into 2 types: collaborative technological trust C-Trust: trust in robots supporting the execution of tasks in work teams and interactional technological trust I-Trust: trust in robots implementing a service, e.g. a care and support service for the elderly. In the project we will carry out research based on the author's Holistic Model of Human-Robot Interaction in the SWH, which is based on: the human-robot team trust model, the Technology Acceptance Model (TAM) and the Distributed Dynamic Team Trust (D2T2) theory, which implies the need to take into account the impact of the trust that SWH employees present towards robots on the level of trust of SWH residents towards robots, and vice versa. The approach developed is a precursor view to investigating the importance of trust in robot interactions and fills a research gap that has existed for more than 20 years.