THE ACCESS TO INFORMATION AND COMMUNICATION TECHNOLOGIES AND MODERN E-PARTICIPATION TOOLS AS A DEVELOPMENT OF SMART CITIES FACTORS - ON THE EXAMPLE OF POLAND

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Introduction

The Sustainable Development Goals are the plan to achieve a better and more sustainable future for the whole world. One of the targets of Sustainable Cities and Communities is providing in all countries the capacity for participatory, inclusive and sustainable urbanization, integrated and sustainable human settlement planning and management.

The growing problems connected with progressive urbanization and the faster pace of life are a threat to achieving sustainable development of cities and regions. New concepts of city development meet the changes occurring in the world. Nowadays, one of the most popular concepts is smart city. One of the main purposes of smart city is to ensure sustainable development of the city based on social participation – including residents, in planning and decision making processes. Internet tools that enable e-participation have the potential in the term of social participation in spatial planning.

The aim of the research

The aim of the research was to analyze the impact of the availability of ICT on the possibility of using modern tools of social participation (e-participation). An additional goal is to popularize the geo-questionnaire. The research was carried out in Poland.

Fig. 1. Research area: Polish voivodeships
Source: own elaboration.

Smart City concept

A smart city is one of the latest concepts in the development of modern cities. It has evolved from the foregoing smart cities 1.0 and 2.0 to the smart city 3.0. In smart city 3.0. members of the local community play the main role as not only the recipients of the introduced changes and modern technology, but also as the creators of urban space. A smart city is a city that looks forward to the future and bases its performance on the six components:
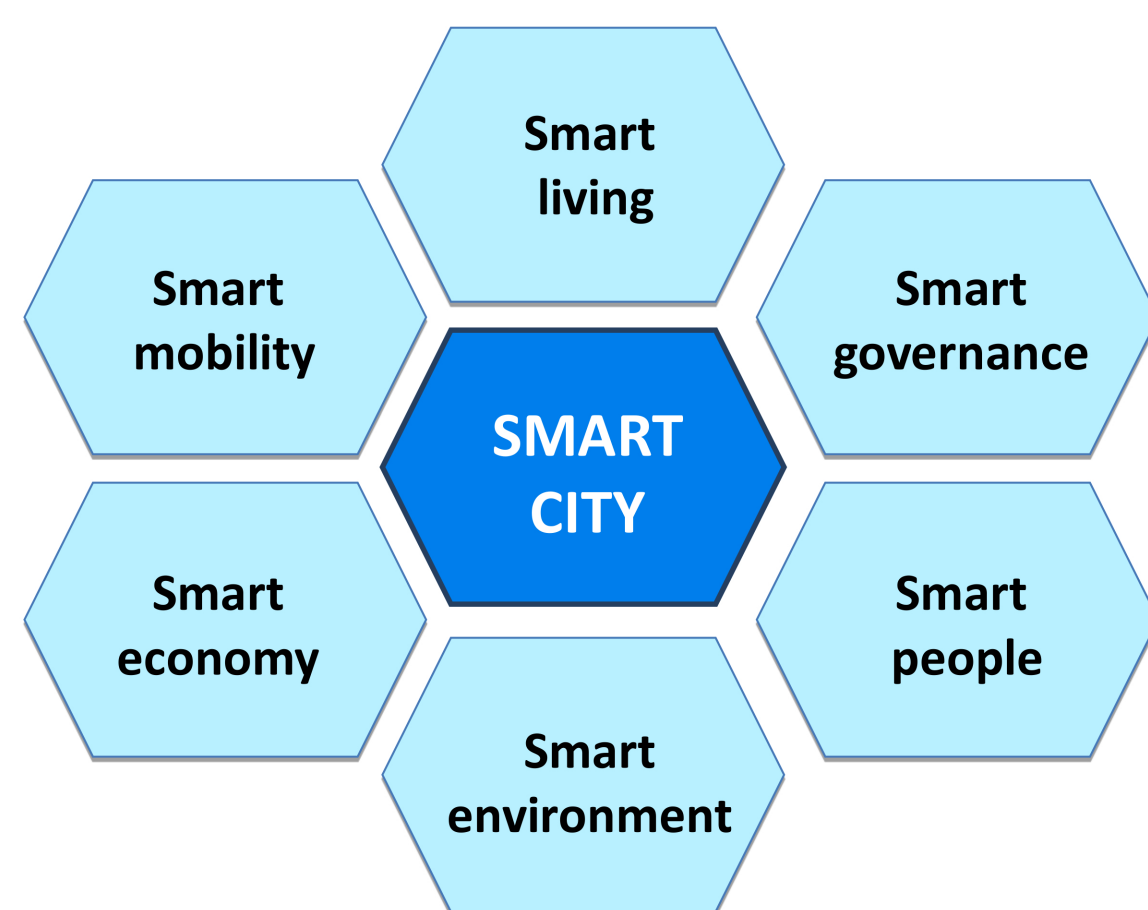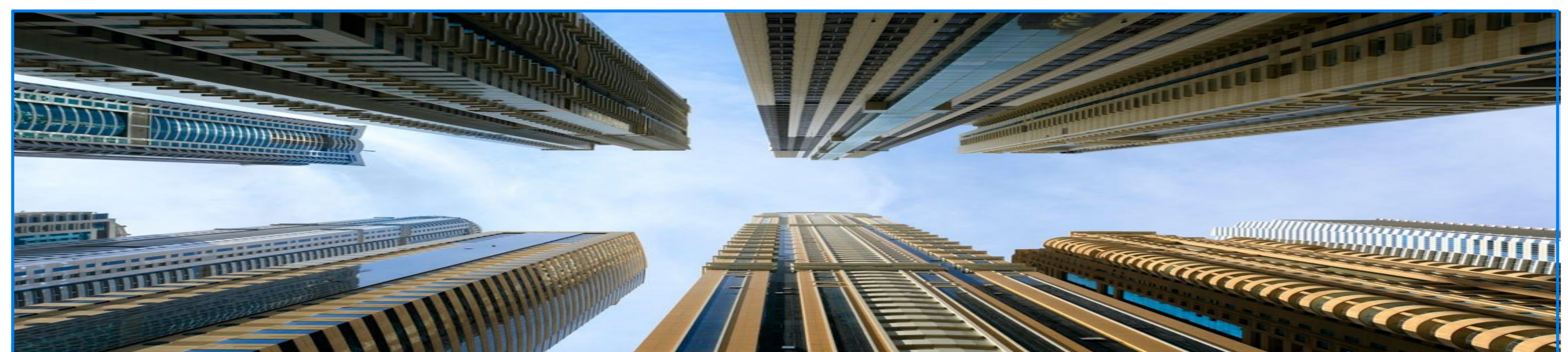

Fig.2. The components of smart city.
Source: own elaboration.

Advanced technologies are a common element of all components of smart city.

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E-participation and geo-questionnaire

The e-participation is an inseparable element of smart cities – cities developing on the basis of modern information and communication technologies and co-creating urban space with the inhabitants' participation.

E-participation enables citizens to become actively involved in the public consultation process via ICT, mostly the Internet. One of the tools for e-participation is a geo-questionnaire – a modern tool based on Public Participation GIS methods (PPGIS). PPGIS joins geoinformation and cartographic methods with social research methods; it enables including the society in decision-making processes. Respondents can indicate responses on maps. Internet tools based on geoinformation systems have considerable potential for mobilizing social participation in spatial planning. By using modern information and communication technologies, residents can become decision-makers and co-create the surrounding space.
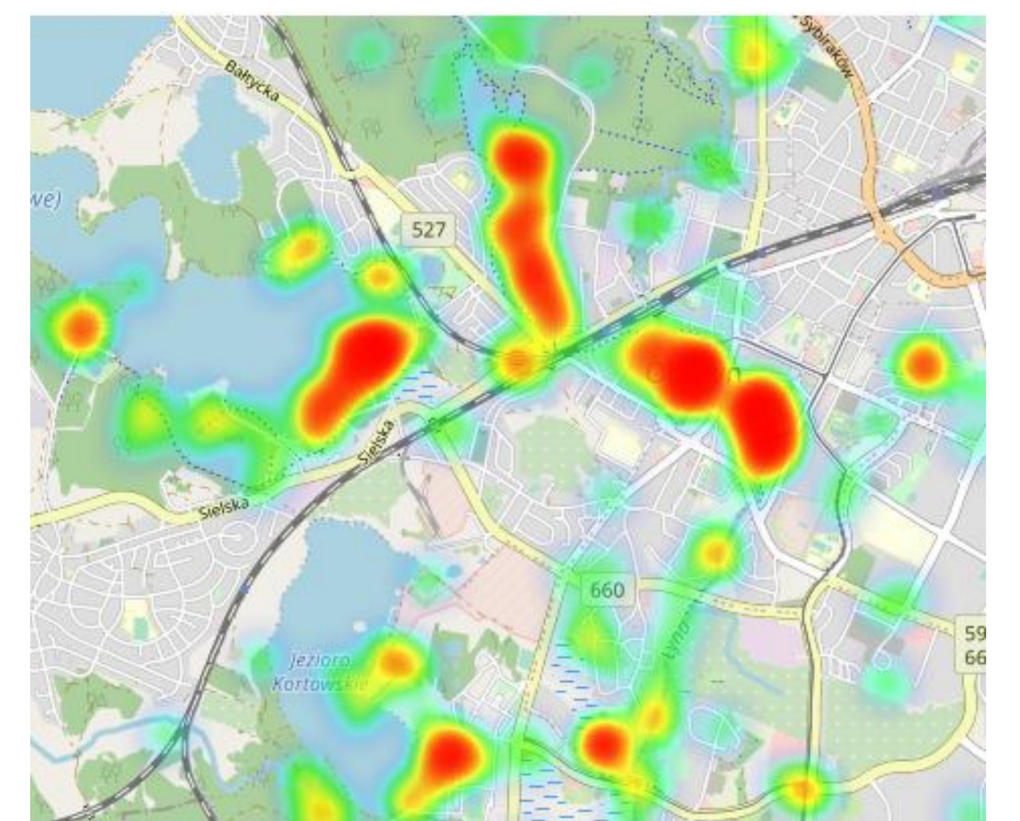

Fig. 3. An Example of an e-participation tool – a geo-questionnaire. The most popular places for a walk in city space.
Source: own elaboration.

Access to ICT in Poland

Internet access provides members of the public with an opportunity to become more involved in the decision-making process and co-create the surrounding space. Therefore, changes in access to ICT are so important.

The study analyzed households with at least one personal computer. In 2004, 33% of Polish households owned computers, and only 17% of households owned computers with Internet access on average. In 2017, 76% of households owned computers, of which nearly 75% were connected to the Internet.

The results of the analysis point to a clear decrease in the digital divide gap in Poland. However, a significant proportion of the Polish population, in particular households, still do not have access to personal computers or the Internet.
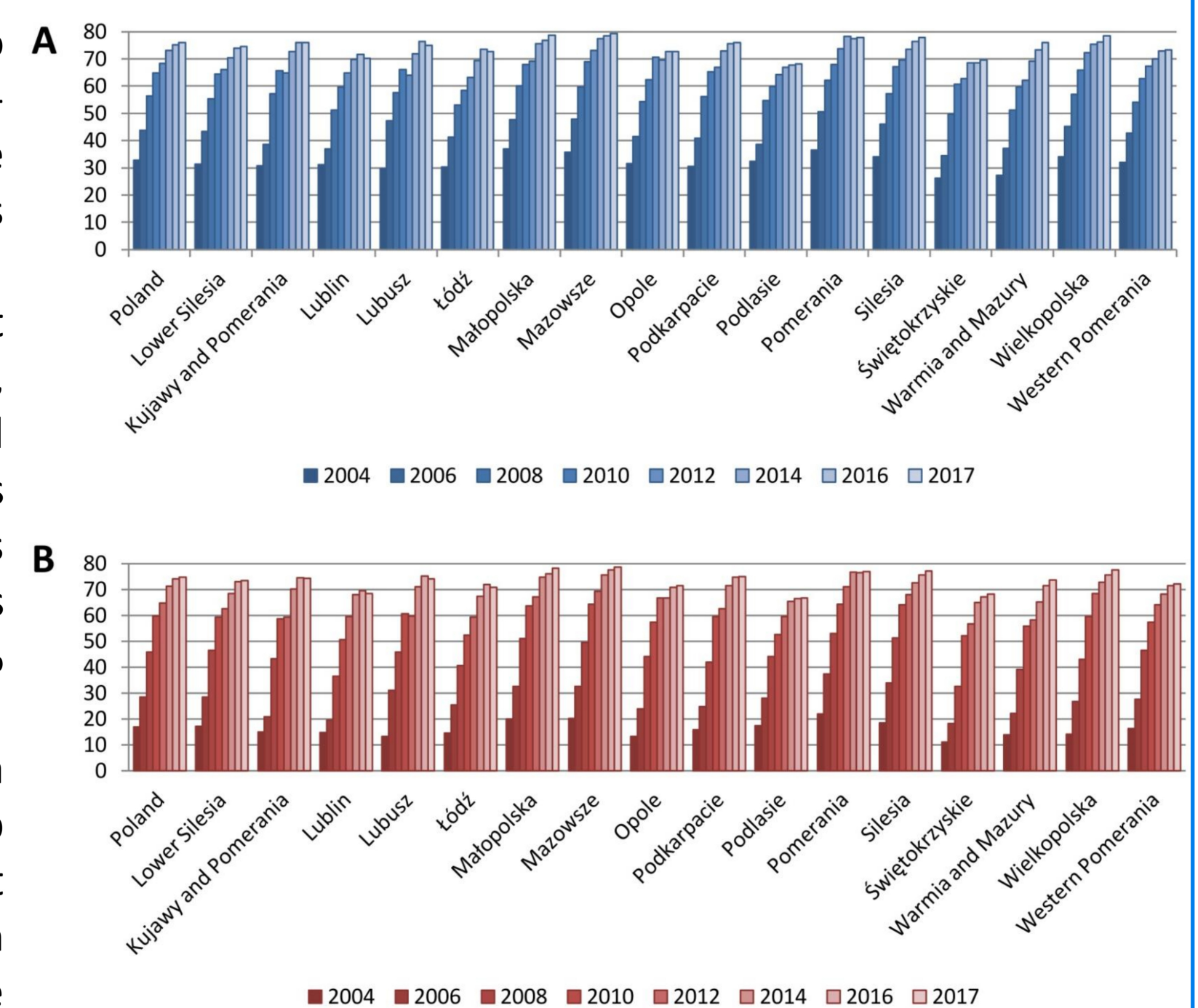

Fig. 4. Proportion of Polish households with (A) a personal computer, (B) a personal computer with Internet access [in %].
Source: own elaboration.

Summary

1) The conducted research shows that the digital exclusion, which is a barrier to the use of e-participation tools, decreases with the increase in the availability of information and communication technologies.
2) Growing availability of ICT provides new opportunities for enhancing social participation and encouraging citizens to co-design urban space (including e-participation) and the management of cities.