

# SOCIAL PARTICIPATION IN THE ASPECT OF A SMART CITY DEVELOPMENT

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## ABSTRACT

Advanced technologies are entering citizens' lives, which can be noticed at every turn. Society is becoming increasingly involved in building, creating and planning a city, district or the nearest place of residence. The quality of the functioning of the local community and the quality of life depend, to a large extent, on the level of social participation. The aim of social participation is to establish a mechanism for meeting citizens' needs, and to achieve citizens' acceptance of the authorities' actions. Modern communication techniques greatly facilitate the expression of public opinion and public awareness in this regard has been on the rise. A growing number of new forms of communication using modern technologies are being developed all the time. The aim of the study is to analyse the forms of social participation in the city life, *inter alia* spending financial resources on its development. Attention is also drawn to the most recent ways in which the authorities communicate with the public in order for the latter to express their opinions on the former's actions. Practical research was conducted for the city of Olsztyn located in the north-eastern part of Poland. Social activity forms were analysed, including those carried out using ICT technologies. The research shows that access to modern technologies facilitates contact between the city authorities and citizens, which ensures that the policy under implementation is kept in line with citizens' expectations.

**Keywords:** social participation, smart city, development

## 1 INTRODUCTION

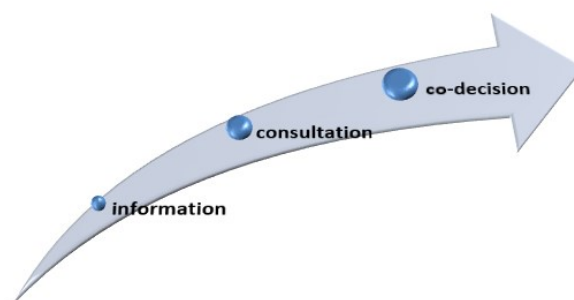
Currently, the concept of smart cities appears to be a new paradigm of their development and sustainable social and economic growth [1-2]. Despite the increase in the number of smart cities, however, it is difficult to define them on a global scale. In fact, there is still no general consensus regarding the meaning of the term *smart cities* or its descriptive attributes. There is a broad consensus, however, that these cities are characterised by the ubiquitous use of information and communication technologies (ICTs) which, in various urban areas, help cities to make better use of their resources and to develop.

Some of the literature emphasises that in a *smart city*, ICT systems which acquire data from heterogeneous sources (e.g. gutters, car parks, security cameras, school thermostats, traffic lights, etc.) need to be planned and controlled [3-4]. The role of ICTs in cities is identical to that of these technologies in organisations, i.e. primarily an improvement in productivity through the use of automated processes as well as the support for decision-making, planning and management control processes. In cities, information and communication technologies can significantly contribute to the solution of emerging problems related to city life, for example, the combination of relevant data and information which will make the functioning of the city more efficient. In general, information and communication systems should be used for purposes complementary with the human and organisational capital, and their use should be shaped by political choices and by the urban system (citizens, technology suppliers, local authorities, etc.), depending on the needs and habits [5]. Various patterns of the use of ICTs in cities to reflect various needs can therefore be noted.

*Smart city* projects can also include investments in human capital that are aimed at increasing the urban citizens' capacity for applying innovative solutions by motivating them to raise their level of education, improving their living conditions and attracting and retaining leaders (innovative entrepreneurs, investors, entrepreneurs with financial capital, outstandingly talented people, etc.) [6-8].

*Smart city* also refers to decision-makers in cities and to their willingness to innovate the way in which services are provided and communication is maintained with the local population [9]. The research conducted under this study focused on the local community's participation in investment projects implemented in the city using a variety of voting methods (including ICT). Social participation was regarded as the involvement of inhabitants in formal self-organisation processes aimed at improving living conditions in the local community. Social participation appeared in Poland following the political transformations in the 1990s; earlier, such projects had been effectively blocked by local politicians and authorities. The social participation process accelerated following Poland's accession to the European Union in 2004. It is used at many stages of space development, from

infrastructural projects on a regional or national scale to the shaping of space on a micro-scale [10-12]. The authorities, while shaping the space of life, are obliged to shape it together with citizens. They are of significance in the democratic decision-making process at the local level, supporting local authority structures in solving numerous social problems and increasing the economic efficiency of local governments, the quality of services provided and the level of satisfying local needs [13]. Certain forms of social participation are also required by Polish legislation [14-17]. The social participation level comprises three main components: information, consultation and co-decision, which presents the image of the areas of social participation [18] (see Figure 1).



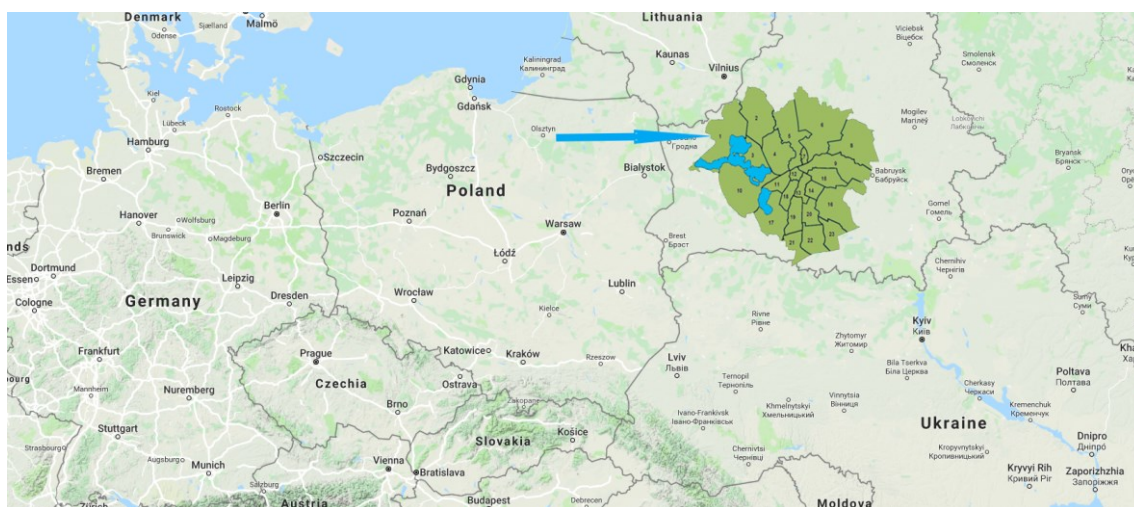
**Figure 1. The social participation ladder and the level of involvement at particular stages. Source: own study**

Information, as the simplest method of participation, comprises one-way relations (the authorities-citizens); consultation provides an opportunity to present one's standpoint, even though opinions are not always considered; in co-decision, decision-makers delegate some of their powers to the community while, at the same time, citizens are responsible for the decisions taken - a partnership between citizens and the authorities is then established.

The aim of the study is to analyse the mechanisms and forms of social participation in spending financial resources on the development of the city of Olsztyn, located in the north-eastern part of Poland, in the years 2015-2018. The focus was on investment activities and the forms of social participation in the creation of the city's space.

## 2 METHODS AND MATERIALS

Studies and analyses were conducted in the city of Olsztyn, located in the north-eastern part of Poland in the years 2015-2018. The city is located in the Warmia-Mazury Voivodeship on the Łyna River. It is the voivodeship's capital city, the main economic, educational and cultural centre, the seat of regional authorities and institutions, a railway junction and an interchange. According to Statistics Poland data, the population of Olsztyn in 2017 was 173,125 inhabitants [19]. Its area is 88.33 km<sup>2</sup>, and the population density is 1,960 people per km<sup>2</sup>. The female-to-male ratio in Olsztyn was 115 to 100. Figure 2 shows the location of the analysed city.



**Figure 2. Location of the study object. Source: own study with the help of Google Maps**

In the analysed area, participatory actions were conducted, which resulted in the Olsztyn Participatory Budget (OPB) and the Olsztyn Civic Panel (OCP). OPB is a public consultation process aimed at involving the local community by allowing inhabitants to make decisions on a part of the city of Olsztyn's budget. Evaluation

reports of the OPB from the years 2015-2018 will be subjected to a detailed analysis. The second project under analysis is the OCP, which offers inhabitants an opportunity to share their opinions and reflections with the city authorities by means of cyclical opinion polls, i.e. Internet or telephone surveys.

## 2.1 Section 1: Olsztyn Participatory Budget (OPB)

Implementation of the Olsztyn Participatory Budget is based on a bylaw issued by the Mayor of Olsztyn on an annual basis concerning the process of public consultations. This is a consultative procedure of a co-decisional nature. Citizens co-plan the city budget and thus, together with the authorities, make decisions concerning the allocation of public funds. Public consultations are open to all Olsztyn inhabitants aged 15 and over, and to non-governmental organisations with their main seat in Olsztyn. Everyone casts two votes, one for a district project, and one for a city-wide project (a so-called “integrated project”). There is no obligation to vote for a project located within the voter’s place of residence (district). Each inhabitant can cast their vote on a proposed investment project to be implemented throughout the city. The most frequently proposed and implemented projects include the renovation of sidewalks, car parks, and stairs; the construction of bicycle/pedestrian paths and lighting; and the construction of open-air gyms and playgrounds. Permitted forms of submitting applications and voting as part of the OPB include:

- (a) paper form (ballot boxes were placed in the Olsztyn City Council and at the District Council offices)



- (b) *on-line* – via the portal [20]



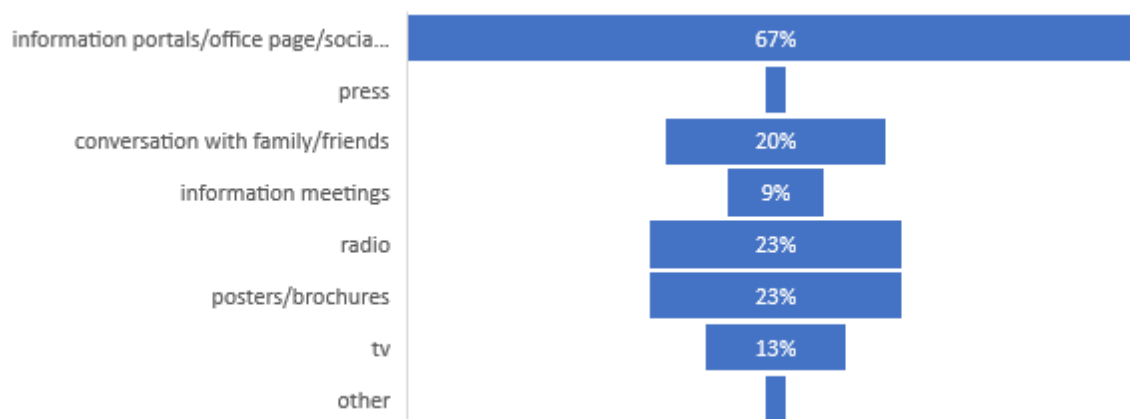
- (c) by letter



- (d) via the *e-puap* i.e. a website that allows voting papers to be sent to the office without the need to visit the office personally



The highest percentage of voters obtained the information on the opportunity to vote under the OPB from various websites (City Council website, portals [gazetaolsztynska.pl](http://gazetaolsztynska.pl), [gazeta.pl](http://gazeta.pl), [wm.pl](http://wm.pl), [olsztyn.com.pl](http://olsztyn.com.pl), Facebook, [onet.pl](http://onet.pl)). This was not the only source of information since, in addition to the Internet, these people frequently learned about the opportunity to vote from the radio or television. The other major information sources include conversations with friends of family members, information provided on posters, handouts and brochures and local radio stations (see Figure 3).



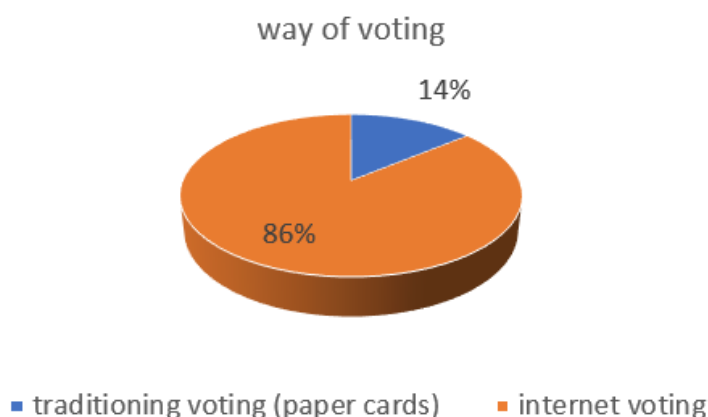
**Figure 3. Sources of information on voters taking part in the Olsztyn Participatory Budget. Source: own study**

Under the OPB, city inhabitants could submit applications for the implementation of both district and city-wide projects, and vote for the submitted proposals using the traditional or on-line system. The number of proposed projects varied from one district to another. Table 1 shows the number of district (local) and city-wide (integrated) projects qualified for voting in the subsequent years of the analysis.

**Table 1. A summary of the number of notified local and integrated investment projects in particular years of the analysis**

District's ID number (see map)	District's name	2015	2016	2017	2018
19	Brzeziny	2	2	3	2
10	Dajtki	6	6	6	5
21	Oś. Generałów	4	3	8	2
11	Oś. Grunwaldzkie	5	8	3	4
1	Gutkowo	5	4	8	4
22	Jaroty	3	5	6	4
9	Kętrzyńskiego	7	5	3	3
14	Kormoran	9	7	4	2
17	Kortowo	1	2	2	2
13	Kościuszki	4	6	6	4
3	Likusy	4	5	4	3
16	Mazurskie	3	3	2	3
4	Nad Jez. Długim	3	7	4	7
20	Nagórki	4	3	1	6
23	Pieczewo	3	4	5	4
18	Podgrodzie	4	7	2	4
6	Podleśna	2	6	6	5
15	Pojezierze	12	4	7	3
2	Redykajny	4	3	2	1
12	Śródmieście	12	1	6	3
5	Wojska Polskiego	8	8	8	4
7	Zatorze	5	5	3	6
8	Zielona Góra	1	2	1	1
District projects Total		111	106	100	86
Integrated projects Total		29	30	33	33
Total		140	136	133	119

During the period under analysis, citizens used all four voting opportunities. The ways of voting were divided into groups: over the Internet (on-line and via *e-puap*) and in the paper form (by letter, voting papers); the first form was decidedly the most popular. Up to 86% of respondents declared that they had used the Internet for this purpose (see Figure 4).

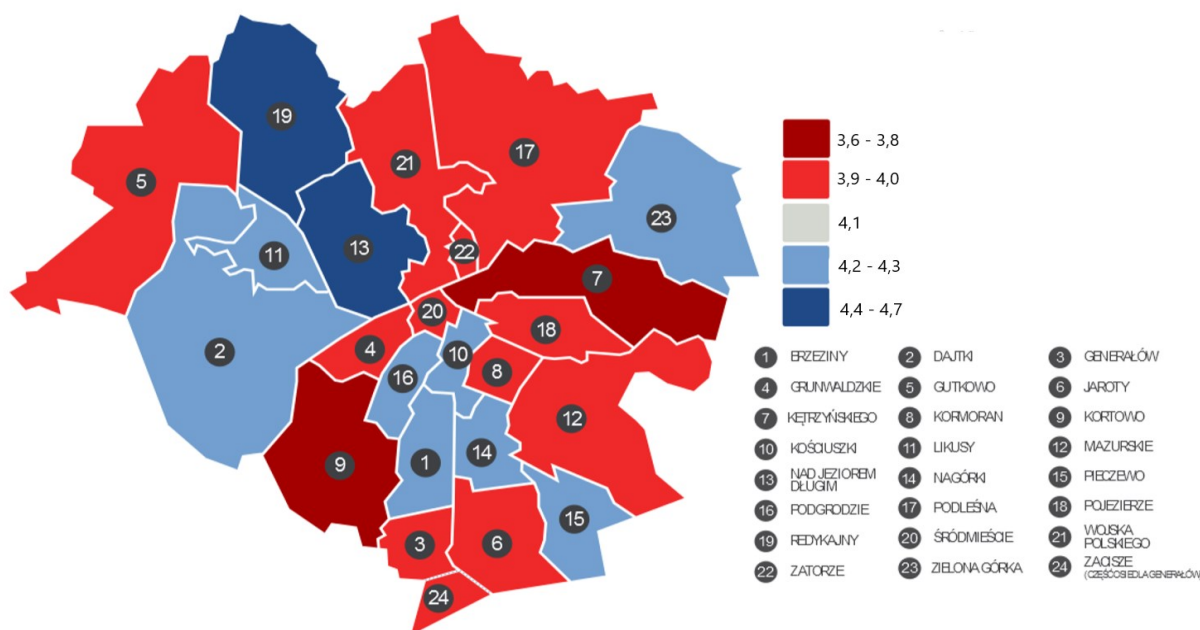


**Figure 4. The percentage of voters casting votes over the Internet and in the traditional (paper) form.**  
Source: own study

Results of the survey show that voting over the Internet is immensely popular. Voters more frequently use this form than the traditional one (see Figure 4). This clearly shows the direction in which the procedures should be steered and how the communication and message should be developed so that, in the future voting editions, the maximum number of Olsztyn inhabitants will be able to easily use this particular way of voting.

## 2.2 Section 2: Olsztyn Civic Panel (OCP)

Olsztyn Civic Panel was launched in order to provide inhabitants with an opportunity to participate in municipal life by expressing their opinions and needs. It is dedicated to adults who create a profile on [21]. Therefore, it is required that participants know how to use IT tools and have access to the Internet. The panel participants respond, on a cyclical basis, to surveys on various issues of significance to inhabitants, e.g. education, transport, culture, or city's cleanliness. This allows the authorities to note changes in opinions, expectations and needs over time. The civic panel technique is appreciated in many countries all over the world. Civic panels operate well in large cities, towns and rural communities, *inter alia* in the UK, the Netherlands, Denmark, Germany, Australia and New Zealand. In all of these places, they provide local authorities with knowledge of the problems of the local community, and the inhabitants with a real sense of influence and co-participation in decisions that are important to them. The Olsztyn Civic Panel is implemented in cooperation with an independent, Olsztyn-based research agency *KF Research* and *Studio CATI Koszary Funka*. The research is carried out in accordance with the highest standards of the research sector and the principles of the European Society for Opinion and Marketing Research (ESOMAR).



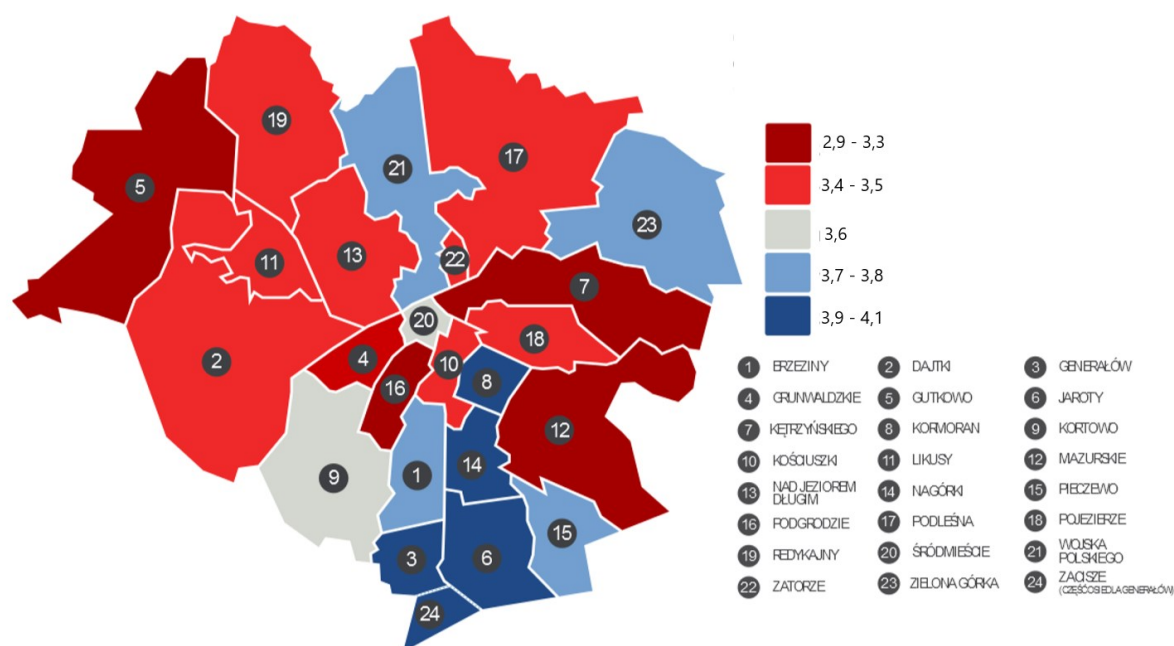
**Figure 5. Olsztyn inhabitants' ratings as regards the quality of living in the city (scale ranging from 1-very poor to 5-very good), broken down by districts. Source: own study based on [21]**

An analysis of inhabitants' opinions on the quality of life in the city shows that Olsztyn is a rather good place to live in (see Figure 5), even though inhabitants of the districts of Kortowo and Kętrzyńskiego express slight dissatisfaction. This is probably due to the fact that there are university buildings in the district of Kortowo and approx. 20,000 students (who may hinder a quiet existence) live there for 10 out of 12 months of the year. In turn, since the Kętrzyńskiego district is located in the vicinity of industrial plants, inhabitants are burdened with an industrial landscape as well as noise and other industrial emissions.

Under the OCP, inhabitants were also asked to express their opinions on the tram project. The highest inhabitants' ratings were given to the districts which have benefited from these projects, and to which access has been improved, i.e. Kormoran, Nagórki, Jaroty, Generalów and Zacisze.

Under the OCP, the questions addressed to inhabitants concern matters related to both the infrastructure (e.g. organisation of traffic and the introduced changes, municipal waste management, management of river banks and lake shores, etc.) and culture and social life (e.g. restrictions on the sale of alcoholic beverages in the city, cultural development strategy, etc.).





**Figure 6. Inhabitants' rating of the tram project launched in Olsztyn in 2016 (scale ranging from 1-very poor to 5-very good), broken down by districts. Source: own study based on [21]**

### 3 CONCLUSIONS

The aim of the study was to analyse social participation in smart city development. The analysis was conducted for the city of Olsztyn, located in the Warmia-Mazury Voivodeship (Poland), where the possibilities of communication between the authorities and citizens and the expression of one's opinion were analysed. In order to meet the expectations, the authorities of Olsztyn allowed the city inhabitants to participate in the allocation of funds for infrastructural purposes (the participatory budget), and launched a platform which enables the survey of public opinion on a variety of city-related issues. The first form of social activity is implemented in two ways (traditionally and through the media), while the second form requires that participants are familiar with new technologies, including IT tools. In the era of the development of such services, the set course will facilitate contacts between the authorities and inhabitants in the future.

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