

**Piotr Glenc**

*University of Economics in Katowice*

*Faculty of Informatics and Communication*

*Department of Communication Design and Analysis*

[piotr.glenc@ue.katowice.pl](mailto:piotr.glenc@ue.katowice.pl),  <https://orcid.org/0000-0003-4147-4133>

# Digitalization of public consultations in rural municipalities of the Wielkopolskie Voivodship

**Abstract:** The development of e-participation and e-consultations is particularly characteristic of large cities, which is why researchers tend to focus on larger urban areas. This article adopts a different perspective. It presents the results of research aimed at identifying digital solutions used in public consultations in rural municipalities of the Wielkopolskie Voivodship (Poland), as well as determining the extent to which these solutions have been disseminated. An analysis was conducted on the resolutions adopted by individual municipalities that define the principles and procedures for conducting consultations with residents. The results indicate that the investigated municipalities declare the use of only a small fraction of the broad range of tools developed thus far in the field of e-consultations. Among the various stages of public consultation, the fewest opportunities for using digital solutions exist at the stage of submitting a request to hold a consultation process. Noteworthy is the limited use of mobile applications and social media, as well as the absence of declarations regarding the use of artificial intelligence solutions, which today offer significant opportunities for improving both the consultation process itself and the analysis of its results. Additionally, the study shows that in some municipalities more electronic communication channels are used at the stage of informing about ordered consultation than at announcing its outcomes.

**Key words:** rural municipalities, public consultations, digitalization, e-participation, e-consultations

## Introduction

Contemporary concepts of public management emphasize the importance of involving stakeholders in decision-making processes where feasible. This participatory approach to governance is noted for numerous advantages, including enhancing political engagement among citizens, integrating marginalized participants into public decision-making, and leveraging collective experience to

address complex issues (Gustafson, Hertting 2017). Public consultation represents a particular form of participation wherein public authorities engage in dialogue with stakeholders, providing diverse groups with opportunities to voice their opinions and incorporating the knowledge acquired into decision-making processes (Rijal 2023). While this publication primarily focuses on citizens as stakeholders, it should be noted that consultations may also involve other entities such as non-governmental organizations (Barczewska-Dziobek 2020) and businesses (Staszak 2018).

Implementing participatory mechanisms may encounter several problems and barriers (e.g., lack of process transparency, limited resource availability), therefore there is a strong need to enhance participatory methods (Matczak et al. 2016). Effective implementation and utilization of digital technologies, whether traditional or modern (including those based on artificial intelligence), may pave the way to overcoming at least some of these problems. The use of Information and Communication Technology (ICT) for conducting public consultations in academic literature is referred to as *e-consultations* (Oni et al. 2020, Roztocki et al. 2023).

The remaining part of this article consists of three parts. The first part introduces the issue of public consultations and its connection with the broader concept of public participation. The second part discusses the digitalization of public consultations and introduces the concept of *e-consultations*. The third part describes the research aimed at identifying digital solutions used at various stages of public consultations in rural municipalities<sup>1</sup> in the Wielkopolskie Voivodship, as well as verifying the extent of their dissemination. The research employed a method of secondary source analysis, focusing on resolutions concerning consultations with residents adopted by individual municipalities.

## Public consultation as an example of implementing the concept of participation in public management

The need to strengthen stakeholder participation, especially that of citizens, by involving them in the co-creation and co-decision of public services, is emphasized by paradigms within public management such as New Public Governance and Public Service Logic (Roźnowska et al. 2022). The overarching goals of public participation include strengthening democracy and legitimizing actions taken by authorities (Matczak et al. 2016). Decisions made in a participatory manner better address the actual needs of stakeholders (Gawłowski, Jarosz 2019). Enhanced participation simultaneously increases accountability of authorities for their decisions and distributes it among other decision-makers (Słupik 2016). The benefits of participation are mutual – benefiting both stakeholders and decision-makers (Bajrami, Bajrami 2024). In most studies, participation is perceived

<sup>1</sup> In this article, the word *municipality* corresponds to the Polish term *gmina*, which denotes the smallest administrative unit in Poland's three-tier administrative division.

as a voluntary phenomenon, but some researchers also distinguish the concept of mandatory participation, which includes activities such as paying taxes (Jurek 2023). In the context of local communities, examples of participation include conducting public consultations, providing opportunities for local and legislative initiatives (Zielińska, Kraszewski 2019), creating and participating in youth or senior councils (Tykwińska-Rutkowska 2017), and establishing revitalization committees (Kaczmarek 2021).

The issue of public consultations is explored across various disciplines in social sciences (including management science, sociology, political science, social communication, and philosophy) and legal sciences (Roźnowska et al. 2022). Consequently, the term *public consultation* is defined in several ways. In this work, public consultation is defined as a process in which governmental representatives present their intentions to interested stakeholder groups to gather their opinions and incorporate these opinions into further actions within a planned project (Zychowicz 2014, p. 23).

The consultation procedure can be divided into several stages, as presented in Figure 1. This is a process viewed from the perspective of its organizer (FISE 2014).

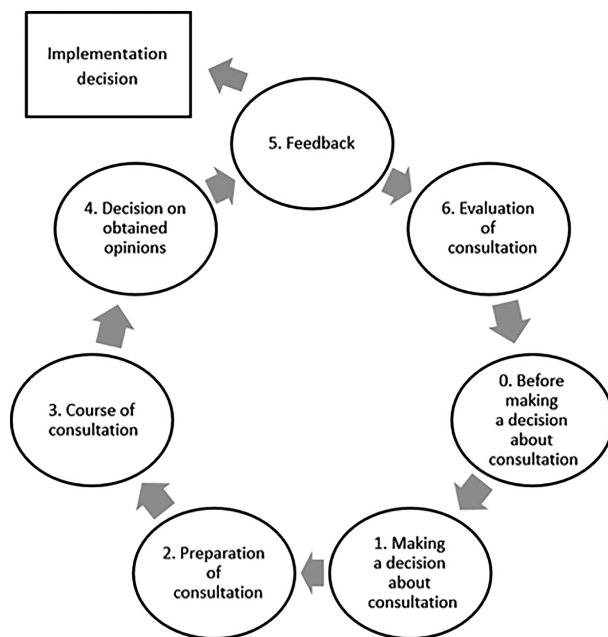


Fig. 1. Stages of the public consultation process  
Source: Hajduk (2021, p. 11).

The presented framework assumes an iterative nature of public consultations. An efficiently functioning administration, oriented towards citizens, should

conduct consultations in a continuous or nearly continuous manner. The stages of a single consultation process are as follows (FISE 2014):

1. Before making a decision about consultation. Once the idea of conducting a consultation arises, the justification for its organizing is analyzed, as well as the availability of necessary resources (time, financial resources).
2. Making a decision about consultation. At this stage, a formal decision is made on whether to hold the consultation or not.
3. Preparation of consultation. This stage involves defining the context in which the consultation takes place, specifying its objectives, developing a detailed action plan, identifying the target audience, and determining the time and place for conducting the consultation. The office designates individuals responsible for the process and establishes the principles of cooperation. Decisions are made regarding the selection of methods and tools for conducting the consultation. Success indicators are defined. The office undertakes activities related to informing about the planned consultation, also aiming to engage the target audience. Materials and tools for the consultation are evaluated.
4. Course of consultation. At this stage, the organizer, using the selected tools and methods, collects participants' opinions in their original form (not in the form of bureaucratic interpretations) and monitors the progress of the consultation, checking whether it is proceeding according to plan and whether the proceedings are being properly documented.
5. Decision on obtained opinions. The organizer decides whether to accept or reject the proposals submitted by consultation participants, guided by the public interest and the common good. Each such decision should be justified.
6. Feedback. After the consultation is finished, a summary is provided. The organizer formulates responses to the issues raised, and information about the consultation results is made public, as well as directed to the individual participants involved in the consultation.
7. Evaluation of consultation. The organizer evaluates the completed consultation process, verifying whether it achieved the set objectives and formulating conclusions useful for future consultations. The results of the evaluation are not made public and constitute an internal document of the office.

The consultation procedure inherently involves making an implementation decision. However, the act of decision-making itself is not a direct component of this procedure. The results of public consultation serve merely as an auxiliary means for decision-making and are not binding for the authorities (Czopek, Żońnierczyk 2017).

The toolkit for conducting public consultations is diverse. It includes, among others, collecting written opinions, debates, open meetings with representatives of local communities, panel discussions, deliberative polling, meetings with experts (e.g., academics), citizen cafes, participatory planning, opinion surveys, as well as forums (Gawłowski, Jarosz 2019, Jurek 2023). Increasingly, digital solutions are playing a larger role in this toolkit, which will be the focus of the next part of this article.

## **Digitalization of public consultations: Towards e-consultations**

The development of digital technologies has significantly impacted administration. Recognizing this phenomenon, researchers have begun using the term *e-government*, which denotes the utilization of ICT in various aspects of public administration – both within administrative organizations and in interactions between administration and its stakeholders (Musa et al. 2022). Three phases of e-government can be distinguished (Vrabie 2023):

- e-government 1.0: characterized by the provision of basic services electronically (the initial phase),
- e-government 2.0: characterized by the use of social media and other Web 2.0 technologies in administration,
- e-government 3.0: characterized by the use of emerging technologies such as artificial intelligence, blockchain, virtual reality, and augmented reality in administration.

It is important to emphasize here that not all researchers accept this categorization of phases, and some propose a different numbering of them. In some studies, an additional phase – e-government 4.0 – is distinguished (e.g., Sagarik et al. 2018, Trček 2022, Ziembra, Papaj 2023), however, the justifications for its distinction vary, and the arguments presented in the literature are not consistent. Nevertheless, there is consensus that the phenomenon of e-government evolves alongside technological development. In this article, the previously mentioned numbering according to Vrabie (2023) is adopted, as this approach allows for the observation and description of the development of e-government in parallel with the advancement of another concept – web technologies (where, at the time of writing this article, phases from Web 1.0 to Web 3.0 are distinguished). Such a parallel is employed, for example, by Kusiak-Winter (2021), who, while recognizing the validity of discussing e-government 4.0, points out that it is a construct that reflects only the desired direction of change and future trends, remaining at a high level of abstraction for the time being.

The digitalization of administration has influenced many areas of its operations. In this context, the following examples of changes can be noted (Kudaj 2017, Grabowska 2023):

- a range of public services for various stakeholders has begun to be provided using digital tools (e-services),
- the documentation workflow has been streamlined (acquisition, processing, and storage of documents in digital form),
- new channels of digital communication have been implemented, in many cases allowing interactions between stakeholders and administration to no longer be limited by office hours and the availability of officials,
- congestion in administrative facilities has been reduced,
- administrative units have started to collect and share public information and data digitally,

- the potential for errors caused by human factors has been minimized (e.g., automatic data validation).

The digitalization of administration has also influenced public consultation processes, leading to the formation of the concept of *electronic public consultations*, more commonly known as *e-consultations* (Đurman et al. 2022). Oni et al. (2020) define *e-consultations* as “the use of ICTs for interactions and deliberation between citizens and the government or its agencies with the intention of arriving at a robust decision”. Examples of benefits derived from integrating digital solutions into public consultations include (Steibel, Estevez 2015): facilitating citizen expression of opinions, increasing their level of participation, reducing costs, opening administration to citizens, facilitating access to others’ arguments, and strengthening community-building mechanisms. Some researchers distinguish between the terms *e-consultation* and *e-decision-making*, arguing that only the latter pertains to the actual consideration of citizens’ opinions in the decision-making process (Legard et al. 2023).

Digital technologies used for public consultations can vary widely (see e.g., Matczak et al. 2015a). Many communities have implemented dedicated online platforms that serve not only to conduct public consultations but also function as repositories of knowledge about the projects under consultation. Examples include the portal *Have Your Say*<sup>2</sup> by the European Commission, the Croatian portal *eSavjetovanja*<sup>3</sup>, and *Decide Madrid*<sup>4</sup> used in Madrid. Tools utilized in e-consultations also include (Oni et al. 2020): forums, online polls, e-petitions, and e-panels (e.g., live chat). Consultations can utilize email and SMS messaging (Graniszewski 2017). The utility of virtual reality (VR) and 3D visualization techniques for conducting public consultations, especially those related to spatial planning and management, has been noted (Glaas et al. 2020, Szczepańska et al. 2021). Technologies associated with the Web 2.0 concept, particularly social media, blogs, and discussion forums, are useful for conducting consultations (Steibel, Estevez 2015). Internet communicators like WhatsApp also play a role (Chagas et al. 2022). In recent years, attention has turned to the potential of using artificial intelligence tools, such as conversational agents (chatbots), for conducting public consultations (Segura-Tinoco et al. 2022). Such solutions have potential to enhance the participation of the younger generation (Väänänen et al. 2020).

Summarizing opinions presented during public consultation can be supported by the use of natural language processing techniques, such as identifying emerging topics and keywords in the opinions (Curran, Carrasco-Farré 2024). The results and various stages of such analysis can be visualized automatically, for instance, in the form of hierarchy charts, word clouds, and word trees (Weng et al. 2021). Fink et al. (2023) indicate that citizens often express their views emotionally during consultations, making techniques for automatic emotion and sentiment recognition particularly useful for analysis. Machine learning techniques enable automatic stance recognition, even in multilingual consultation

<sup>2</sup> [https://ec.europa.eu/info/law/better-regulation/have-your-say\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say_en) (access: 5.07.2024)

<sup>3</sup> <https://esavjetovanja.gov.hr/> (access: 5.07.2024)

<sup>4</sup> <https://decide.madrid.es/> (access: 5.07.2024)

environments (Barriere, Balahur 2023). Cruz et al. (2023) also highlight the utility of using domain ontologies in content analysis of public consultation outputs. Techniques developed in argument- and argumentation mining, focused on automatic identification and processing of arguments, their components, and relationships between arguments, are also valuable in the analysis process (Bembenik, Andruszkiewicz 2016).

The implementation of e-participation solutions, including e-consultations, is more common in larger cities than in smaller ones (Legard et al. 2023). Similarly, in Poland, the implementation of public consultations via the Internet currently pertains mainly to large cities (Pokładecki 2018). Moreover, in the case of Poland, some researchers exploring the topic of public consultations point out that such consultations are generally (regardless of their form) organized less frequently in rural than in urban or urban-rural municipalities (see e.g., Barański 2014, Pomarański 2019). One likely reason is that rural municipalities typically have small populations, where strong neighborly and familial ties exist among residents. Consequently, the assessment of residents' needs in such municipalities is usually conducted through observational methods that rely on intuitive interpretation of phenomena (Marks-Krzyszowska 2017). However, such interpretation does not always lead to accurate conclusions and should not replace formal, documented consultations. Strengthening the mechanisms of participation, both digital and traditional, in rural municipalities and smaller towns therefore remains a challenge. It is necessary to seek good models and practices. The research findings described in the next section of the article may provide inspiration in this regard.

## **Digital solutions in the public consultation processes in rural municipalities of the Wielkopolskie Voivodship**

### **Previous research and research gap**

The implementation of public consultations in rural municipalities and areas is rarely described in scientific literature, although it has already attracted the attention of researchers. Examples include studies conducted by Buława and Ahn (2024), Feltynowski (2024), and Wiatrak (2011). However, these studies focus only minimally on the issue of digitalization of consultations in rural municipalities, and in none of them this topic is the main background. The issue of the digitalization of public consultations was clearly highlighted in a study conducted among municipalities in the Silesian Voivodship in Poland (Glenc 2024). This study was focused on identifying the ICTs used in public consultations; however, it did not focus on rural municipalities but rather investigated all municipalities collectively. Similarly, the study in which Parnes (2018) identified ICTs used for civil dialogue in Poland was focused on 18 cities with the status of voivodship capitals. Thus, some previous studies have not accounted for the issue of rural

municipalities, while others have overlooked the aspect of digitalization. This study aims to address this gap.

The study described herein was conducted in rural municipalities located in the Wielkopolskie Voivodship, Poland. Public consultations in this voivodship have been the subject of previous studies, although researchers have primarily focused on the city of Poznań – the capital and largest city of the voivodship. Studies have been conducted on consultations related to spatial planning in Poznań (Kaczmarek, Wójcicki 2016). Bąkowska et al. (2017) described the results of research on the use of geo-questionnaires in public consultations in the Poznań agglomeration. Mączka and Matczak (2014) analyzed the first civil court conducted in Poland, organized in response to a dispute over one of the streets in Poznań. The case of Poznań has also been used in studies on broader phenomena that encompass public consultations, such as public participation (Kotus 2013) and collaborative urban management (Kotus, Sowada 2017). Research has also been conducted on participatory budgeting (a specific form of consultation) in the Wielkopolskie Voivodship (see, e.g., Matczak et al. 2015b, Jeran et al. 2018, Zięba 2022). As can be observed, the aforementioned lack of research on the digitalization of public consultations in rural municipalities is also evident in the case of the Wielkopolskie Voivodship.

## Research aim and research questions

The aim of this study was to identify digital solutions used in the public consultation processes in rural municipalities of the Wielkopolskie Voivodship (at the stages of submitting a request for consultation, informing about the ordered consultation, conducting the consultation, and informing about the results of the consultation<sup>5</sup>) and to verify the extent of their dissemination.

The following research questions were formulated:

- Q1: What part of the investigated municipalities enable the submission of consultation requests electronically?
- Q2: What digital solutions are used in public consultation processes at the stage of informing about ordered consultation, and how common is the use of each solution?
- Q3: What digital solutions are used in public consultation processes at the stage of conducting consultation, and how common is the use of each solution?
- Q4: What digital solutions are used in public consultation processes at the stage of informing about the results of finished consultation, and how common is the use of each solution?
- Q5: Are social media (characteristic of e-government 2.0) used in public consultation processes, and if so, for what purposes?

<sup>5</sup> In relation to the diagram presented in Figure 1, these correspond to stages 0, 2, 3, and 5. The focus on these stages arises from the fact that information on how they are implemented is publicly communicated in the resolutions adopted by individual municipalities. The principles for implementing the remaining stages are more internal procedures of the offices and are not described in publicly available documents.



Q6: Are artificial intelligence solutions (characteristic of e-government 3.0) used in public consultation processes, and if so, for what purposes?

## Methodology

The study utilized a method of secondary source analysis. It involved analyzing resolutions that define the principles and procedures for conducting consultations with residents adopted by individual municipalities, which are of an abstract nature (i.e., applicable to all consultations within the municipality, not only to a specific process). At the time of the study, there were 107 rural municipalities in the Wielkopolskie Voivodship. The identification of resolutions adopted by individual municipalities was carried out through queries in the *Dziennik Urzędowy Województwa Wielkopolskiego*<sup>6</sup> (the official journal where such resolutions are published).

The following exclusion criteria were adopted:

- the resolution has been replaced by a newer version,
- the resolution pertains exclusively to participatory budgeting,
- the resolution concerns consultations with entities other than residents of the municipality,
- the resolution is specific to an individual case (pertaining to only a particular consultation process),
- the resolution has been repealed.

Following the specified criteria, 76 resolutions were identified, comprising the final set of sources subjected to analysis. In cases where the detailed procedures and rules for conducting consultations were specified in an annex to the resolution, the content of this annex was also analyzed. During the study, the author was marking data on protocols using two-dimensional tables, in which individual municipalities were listed vertically and various digital solutions were listed horizontally. When a reference to a specific digital solution was identified in the analyzed resolution, it was marked in the table with an “X”, which meant that according to the resolution, the given solution could be applied in the municipality. Throughout the study, the table was expanded horizontally when a digital solution not previously mentioned in any analyzed resolutions was identified. Four separate tables were created for research questions Q1–Q4, constructed according to the same structure presented in Figure 2. Research questions Q5 and Q6 did not require the creation of separate tables; responses to these questions

		Digital solutions				
		Solution 1	Solution 2	Solution 3	Solution 4	...
Municipalities	Municipality 1				X	
	Municipality 2		X			
	Municipality 3		X	X		
	Municipality 4					
	Municipality 5	X			X	
	Municipality 6			X		
	...					

Fig. 2. Structure of the protocol in the form of a two-dimensional table used in the study

Source: own study.

<sup>6</sup> <https://edziennik.poznan.uw.gov.pl/> (access: 5.07.2024)

were possible through the identification of digital solutions within the procedures conducted for questions Q1–Q4.

Figure 3 presents an example fragment of one of the analyzed resolutions, in which the use of a digital solution (online discussion forum) was identified (highlighted with a rectangle on the original Polish text).

§ 5. 1. Konsultacje społeczne mogą mieć postać:

- 1) ankiet skierowanych do mieszkańców, grup społeczno-zawodowych, organizacji pozarządowych lub innych podmiotów;
- 2) bezpośrednich spotkań z mieszkańcami, przedstawicielami grup społeczno-zawodowych, organizacji pozarządowych lub innych podmiotów;
- 3) internetowego forum dyskusyjnego,
- 4) opiniowania treści konsultowanego dokumentu,

Fig. 3. An example fragment of one of the analyzed resolutions, in which the use of a digital solution was identified

Source: the resolution of the Kobyła Góra municipal council ([https://edziennik.poznan.uw.gov.pl/WDU\\_P/2019/1163/akt.pdf](https://edziennik.poznan.uw.gov.pl/WDU_P/2019/1163/akt.pdf); access: 5.07.2024).

## Findings

Resolutions subjected to analysis were adopted between 2010 and 2024. Figure 4 illustrates the number of resolutions from the analyzed set adopted in each respective year<sup>7</sup>.

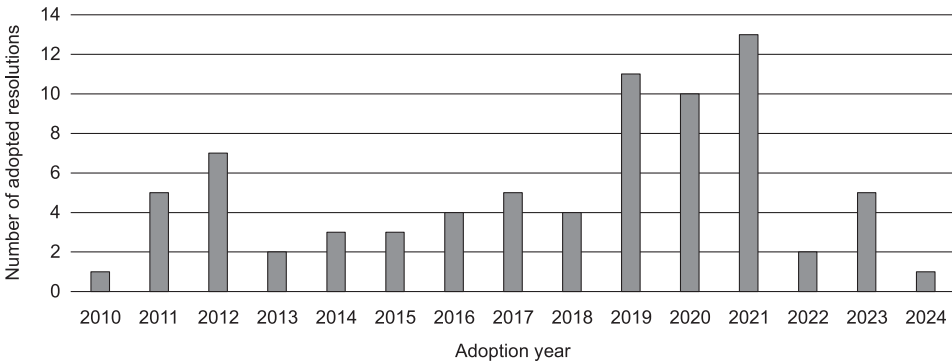


Fig. 4. Number of resolutions by adoption year

Source: own study.

Given the subject of this study, it is important to note that the years during which individual resolutions were adopted (2010–2024) coincide with a period of significant technological development, including advancements in artificial

<sup>7</sup> For modified resolutions, the date of the last amendment was considered the adoption date. Therefore, the values in the chart also indicate the number of municipalities where the resolution adopted in a given year was in force at the time of the research.

intelligence. Consequently, in some cases it was not possible to identify the latest digital solutions that are considered state-of-the-art today. This fact may provide grounds for revising and updating some of these resolutions.

Regarding research question Q1 (“What part of the investigated municipalities enable the submission of consultation requests electronically?”), it was established that only one of the investigated municipalities (Zaniemyśl) included a provision in its resolution allowing for the submission of consultation requests electronically. In some resolutions, there was a direct requirement for the submission of requests “in the paper form”, while in others, the expected content of the request was specified without explicitly stipulating the form in which it should be submitted.

With reference to research question Q2 (“What digital solutions are used in public consultation processes at the stage of informing about ordered consultation, and how common is the use of each solution?”), in the entire set of analyzed resolutions, a total of six digital solutions were identified that can be used to inform about the ordered consultation. The most used channel for this digital communication is the municipality’s website. Most municipalities also declare that they publish such information on the Public Information Bulletin (BIP)<sup>8</sup> website. Additionally, a smaller percentage of municipalities indicate the use of other communication methods, such as publishing information in local media, sending emails, posting information on social media, or providing information on the website of the unit handling the matter subject to consultation. The full list of digital solutions constituting the response to research question Q2 is presented in Table 1.

Table 1. Digital solutions used at the stage of informing about ordered consultation

Digital solution	Percentage of resolutions indicating a specific solution
Municipal (office) website	80.3%
Public Information Bulletin (BIP) website	70.1%
Local media*	13.2%
e-mail	2.6%
Social media profile	1.3%
Website of the unit handling the matter subject to consultation	1.3%

\* With the assumption that these can be digital media (not explicitly indicated in the resolution).  
Source: own study.

Among the analyzed stages of public consultations, the most extensive set of digital solutions pertained to the phase of conducting consultation. A total of seven digital solutions were identified at this stage, in relation to research question Q3 (“What digital solutions are used in public consultation processes at the stage of conducting consultation, and how common is the use of each solution?”).

<sup>8</sup> BIP (Biuletyn Informacji Publicznej) – in Poland, this is a standardized system of websites where public entities provide information. According to Polish law, a number of entities are obligated to maintain such websites.

Most municipalities declared conducting consultations using electronic surveys and emails. Only two municipalities reported the possibility of conducting public consultations using social media. The full list of digital solutions constituting the response to research question Q3 is presented in Table 2.

Table 2. Digital solutions used at the stage of conducting consultation

Digital solution	Percentage of resolutions indicating a specific solution
Electronic survey	69.7%
e-mail	63.2%
Online poll	30.3%
Online discussion forum	5.3%
Question on social media	2.6%
Question via a mobile application	1.3%
Recording and live streaming of consultation	1.3%

Source: own study.

At this point, it is worth noting that some resolutions included general provisions indicating the use of digital solutions without specifying a particular solution. Examples of such provisions include: “electronic communication channels”, “dedicated software”, “modern information technologies”, “system available in electronic form”, and “available IT tools”. Due to their low specificity, such provisions were not included in the list presented herein.

Regarding research question Q4 (“What digital solutions are used in public consultation processes at the stage of informing about the results of finished consultation, and how common is the use of each solution?”), three digital solutions were identified in the investigated municipalities used for informing about the outcomes of the finished consultation. It is worth noting that this represents a smaller number of digital communication channels compared to those used during the stage of informing about the ordered consultation. The full list of digital solutions constituting the response to research question Q4 is presented in Table 3.

Table 3. Digital solutions used at the stage of informing about the results of finished consultation

Digital solution	Percentage of resolutions indicating a specific solution
Municipal (office) website	72.4%
Public Information Bulletin (BIP) website	68.4%
Local media*	6.6%

\* With the assumption that these can be digital media (not explicitly indicated in the resolution).

Source: own study.

The utilization of any digital solution was declared by:

- 1.3% of municipalities, at the stage of submitting a request to conduct consultation,

- 93.4% of municipalities, at the stage of informing about ordered consultation,
- 88.2% of municipalities, at the stage of conducting consultation,
- 90.8% of municipalities, at the stage of informing about the results of finished consultation.

Regarding research question Q5 (“Are social media [characteristic of e-government 2.0] used in public consultation processes, and if so, for what purposes?”), it was determined that social media can be used as communication channels for posting information about planned consultations and for conducting consultations. However, the use of such solutions is rare (declared by 1,3% of the investigated municipalities at the stage of informing about the ordered consultation, and 2.6% at the stage of conducting consultation itself).

During the study, no solutions were identified at any stage of the public consultation processes that could be classified as artificial intelligence solutions. This leads to a negative answer to research question Q6 (“Are artificial intelligence solutions [characteristic of e-government 3.0] used in public consultation processes, and if so, for what purposes?”) for the investigated municipalities.

## Discussion and conclusion

The comparison of the results obtained with those of previous research leads to several insights. Methodologically, it is most similar to the study conducted in another region of Poland, the Silesian Voivodship (Glenc 2024)<sup>9</sup>, where similar resolutions as in the research described herein were investigated. Both studies revealed a low popularity of using mobile applications for public consultations. The conclusions of both studies are also consistent in showing that local governments allow the submission of a request to hold a consultation electronically to an extremely limited extent. Comparing the results of this study with Feltynowski’s (2024) research on rural municipalities in the Łódzkie Voivodship shows that slightly more digital solutions<sup>10</sup> for informing about consultations were identified for rural municipalities in the Wielkopolskie Voivodship, although the main communication channels (municipal website, BIP website, and local media) are the same. Comparing the portfolio of e-consultation tools identified in this study with those described in some publications, it can be concluded that for rural municipalities in the Wielkopolskie Voivodship, it does not include solutions such as:

- integrated consultation systems (platforms) identified by Parnes (2018) in some of the Polish cities with the status of voivodship capitals, as well as described by Musa et al. (2022) in the context of their use by local government units in Croatia,
- virtual reality, visualization, and simulation tools, such as those developed within the UrbanAPI project, applied in four European cities – Vienna,

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<sup>9</sup> However, that study did not focus solely on rural municipalities but covered all types of municipalities.

<sup>10</sup> Feltynowski lists also non-digital communication channels in his publication.

Bologna, Vitoria-Gasteiz, and Ruse, in the context of urban planning and policymaking processes (Khan et al. 2014),

- interactive maps and geo-questionnaires used in some cities in Poland (e.g., Bąkowska et al. 2017, Parnes 2018),
- blogs and RSS feeds, used among other Web 2.0 technologies during public consultations in Brazil, described as case studies by Steibel and Estevez (2015).

The study also did not identify solutions described in some publications as potentially useful (without specifying the entities that actually use them), such as chat rooms, podcasting, instant messaging, and conversational agents (e.g., Al-Dalou, Abu-Shanab 2013, Segura-Tinoco et al. 2022).

The main conclusions drawn from the conducted study are as follows:

- There is a need to revise or update older resolutions to incorporate the potential of the latest digital solutions in conducting public consultations.
- Among the analyzed stages of public consultation, the stage of submitting a request to hold a consultation is least digitalized. There is minimal openness to submitting such requests electronically.
- Some of the investigated municipalities declared the use of a greater number of digital communication channels at the stage of informing about ordered consultation than at the stage of announcing its results.
- Only a small percentage of municipalities use social media – both for informing about consultations and their results, and for conducting consultations themselves.
- Artificial intelligence solutions, such as intelligent conversational systems, are not utilized in public consultations in the investigated municipalities.
- The concept of e-government 2.0 is minimally implemented in public consultation processes in the investigated municipalities, and there is no implementation of e-government 3.0 (in technological terms).

The described study has several limitations. It was not possible to obtain resolutions from all rural municipalities in the Wielkopolskie Voivodship (either because some municipalities did not adopt them, or the queries used did not allow their identification). Additionally, the analysis focused only on selected stages of public consultations. Due to the ambiguity of provisions in some resolutions, it was not always possible to precisely determine which digital solution a particular provision refers to.

There are many opportunities to continue the research described herein. A further step could involve conducting studies in urban and urban-rural municipalities in the Wielkopolskie Voivodship and comparing the results obtained. Furthermore, similar research can be conducted, with the additional application of classifying investigated municipalities into categories (e.g., based on population size, ranking position in terms of digitalization, or proximity to urban areas). Other sources beyond the resolutions adopted in individual municipalities could also be subjected to further analysis, such as municipal subpages and portals dedicated to public consultations, social media posts related to consultations, or announcements regarding specific public consultations and their outcomes.

Similar studies could also be conducted in other regions of Poland, as well as in other countries.

## Conflict of interest

The author declares no conflicts of interest and assures that the work is the result of his own creation.

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## Cyfryzacja konsultacji społecznych w gminach wiejskich województwa wielkopolskiego

**Zarys treści:** Rozwój e-partycypacji i e-konsultacji jest charakterystyczny w szczególności dla dużych miast, dlatego uwaga badaczy tych zjawisk skupia się zwłaszcza na większych aglomeracjach. W artykule tym przyjęto odmienną perspektywę. Przedstawiono wyniki badań mających na celu identyfikację rozwiązań cyfrowych wykorzystywanych w ramach konsultacji społecznych w gminach wiejskich województwa wielkopolskiego, a także ustalono stopień upowszechnienia tych rozwiązań. Analizie poddano podjęte w poszczególnych gminach uchwały określające zasady i tryb prowadzenia konsultacji z mieszkańcami. Wyniki analizy pozwalają stwierdzić, że badane gminy deklarują wykorzystanie zaledwie niewielkiej części szerokiego instrumentarium, jakie wypracowano dotychczas w obszarze e-konsultacji. Spośród poszczególnych etapów konsultacji społecznych najmniejsze możliwości użycia rozwiązań cyfrowych istnieją na etapie zgłaszania inicjatywy konsultacji. Uwagę zwraca mała powszechność wykorzystania aplikacji mobilnych i mediów społecznościowych oraz brak deklaracji dotyczących zastosowania rozwiązań sztucznej inteligencji, które współcześnie dają szerokie możliwości usprawnienia zarówno samego procesu konsultacji społecznych, jak i analizy ich wyników. Z badań wynika ponadto, że w niektórych gminach więcej kanałów komunikacji elektronicznej wykorzystuje się na etapie informowania o zarządzonych konsultacjach niż przy ogłaszaniu ich wyników.

**Słowa kluczowe:** gminy wiejskie, konsultacje społeczne, cyfryzacja, e-partycypacja, e-konsultacje