

# A Supply-Side Perspective on E-Participation and Digital Exclusion in Local Governments: A Thematic Analysis of Municipalities in Ankara, Türkiye\*

Niyazi Karabulut<sup>1</sup> and Nilay Yavuz<sup>2</sup>

<sup>1</sup> Necmettin Erbakan University, Konya, Türkiye

<sup>2</sup> Middle East Technical University, Ankara, Türkiye

## Abstract

This study examines digital exclusion and e-participation in municipalities in Ankara, Türkiye from a supply-side perspective. Its primary research question asks how municipalities define, perceive, and respond to digital exclusion in relation to e-participation. Using qualitative methods, the research involved semi-structured interviews with IT department representatives from one metropolitan and nine district municipalities in Ankara Türkiye. The interview data were analyzed using thematic analysis with MAXQDA software, identifying key themes such as e-participation tools, e-participation levels, digital exclusion, and the impact of the COVID-19 crisis. Preliminary findings reveal that although municipalities have expanded digital services via websites, social media, and mobile applications, these initiatives predominantly target citizens who are already digitally included. As a result, disadvantaged groups, such as the elderly, low-income individuals, and rural residents, are mostly confined to basic levels of e-information and e-consultation, with minimal opportunities for active engagement or e-empowerment. The study concludes that more holistic strategies, including digital engagement programs and targeted outreach, are necessary to bridge the digital divide and enhance inclusive e-participation.

## Keywords

E-participation, digital exclusion, local governments, Türkiye.

## 1. Introduction

E-participation is a mechanism that refers to the use of information and communication technologies (ICTs) to facilitate citizen participation in decision-making processes [8][9]. Digital citizen engagement helps broaden participation processes to larger groups and has the potential to make them more inclusive [2]. Municipalities are the most direct administrative units that serve citizens; thus, they aim to encourage citizen engagement through the use of digital tools such as websites, mobile applications, and social media [1][6][7].

On the other hand, digital exclusion remains a significant barrier to e-participation in municipalities, especially for the elderly, low-income groups, and individuals with limited access to technology [3][4][10]. Digital exclusion is not only related to internet access but also to individuals' digital skills, usage habits, and motivations [5]. The exclusion of groups with limited skills or access to technology poses a significant challenge for municipalities especially in developing countries, for setting up their digital services and addressing inequality in public participation processes. Municipalities are responsible for developing technical infrastructure, promoting digital literacy, and improving access to online services to minimize the problem of digital exclusion. Therefore, analyzing digital exclusion from a supply-side perspective is essential for understanding municipalities' capacities to provide more inclusive services to citizens.

Despite Türkiye being a rapidly advancing country in the digitalization process as an example of a developing country, digital exclusion poses a significant threat to ensuring citizen participation

---

\*Proceedings EGOV-CeDEM-ePart conference, August 31 - September 4, 2025, University for Continuing Education, Krems, Austria.

✉ karabulutnyz@gmail.com (N. Karabulut); nyavuz@metu.edu.tr (N. Yavuz)

🆔 0000-0002-6175-2025 (N. Karabulut); 0000-0002-1673-6309 (N. Yavuz)

Copyright © 2025 for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0)

[4][11][20]. Particularly, the regional disparities in digital literacy rates in Türkiye make it challenging for individuals with lower educational levels to participate in local e-participation processes [12]. Although efforts are being made at the municipal level to increase digital participation opportunities, more research is needed to assess the inclusiveness and effectiveness of these services [4].

Therefore, this research seeks to understand how municipalities in Türkiye define and perceive digital exclusion, how they shape their e-participation processes accordingly, and how they manage the challenges they encounter in these processes. Particularly, it aims to answer the following research questions:

RQ1: How do the municipalities in Türkiye perceive digital exclusion issue in relation to e-participation?

RQ2: How do they address this relationship in their strategies?

In this context, interviews were conducted with the units responsible for the digital service provision of 10 municipalities in Ankara, Türkiye. Through these interviews, a supply-side analysis was provided to explore municipalities' motivations for offering e-participation opportunities, their approaches to the digital divide issue, and their efforts to overcome digital exclusion in this context.

The paper is organized as follows. It first discusses the study context and then reviews the relevant literature. Next, it describes the research methodology and finally presents the preliminary findings and future directions.

## 2. Study Context

Ankara, as the capital of Türkiye and the second-largest city, presents a significant sample for examining e-participation processes. The city has a structure that includes citizens from various socio-economic backgrounds, encompassing both urban and rural characteristics. The municipalities in Ankara represent a large portion of local governments across Türkiye in terms of population density, economic diversity, and their capacity to provide digital services [4]. There are significant differences in the level of digitalization among municipalities in Türkiye. While metropolitan municipalities generally offer more advanced digital platforms, small and medium-sized municipalities often face challenges due to a lack of digital infrastructure, making their e-participation mechanisms less effective [11]. Therefore, this research conducted in Ankara provides valuable insights into the common challenges faced by municipalities in Türkiye and the solutions they have developed to combat digital exclusion. The sample of this study includes the Ankara Metropolitan Municipality as well as nine district municipalities.

According to the 2024 data from the Turkish Statistical Institute (TÜİK), internet access across the country has reached 92%, but this rate drops below 70% in low-income groups and rural areas [13]. Particularly, elderly individuals, people with disabilities, and citizens with low levels of income and education cannot sufficiently benefit from digital services [4][12]. Furthermore, the high capacity of municipalities to provide online services does not always align with citizens' usage of e-participation. Factors such as a lack of digital literacy, cybersecurity concerns, and low trust in governments make it challenging for citizens to participate in e-participation processes [4].

## 3. Literature Review

The existing literature includes various studies examining the importance of e-participation at the municipal level and the impacts of digital exclusion. Digital exclusion is often approached from the citizens' perspective, examining the barriers individuals face in participating in online processes, and analyzing the consequences of digital exclusion based on individuals' experiences [10][16]. However, there is limited information on how municipalities define digital exclusion, address this issue, and shape their e-participation policies [4][14]. This creates a significant gap in understanding municipalities' capacities for digital service provision and their strategic approaches. More research is needed on how municipalities can develop more inclusive digital services to reach a broader

audience and eliminate digital exclusion. In addition, studies addressing this issue in Türkiye is very limited [4][14].

In the existing studies, indicators of digital exclusion include access to ICTs, levels of ICT usage, and ICT skills, in addition to demographic and socioeconomic factors [16]. First, two studies analyzing the relationship between e-participation and the digital divide at the local government level, like this research, stand out in the literature. Porwol et al. [17] examined the relationship between e-participation, social exclusion, and the digital divide at the municipal level. They argued that while citizens' access to ICTs and municipalities' ability to provide online information and services have increased as technology advances, there has not been a corresponding increase in citizens' levels of e-participation. They attributed this discrepancy to the issue of the digital divide, noting that elderly citizens and those living in rural areas have low levels of digital tool usage and, therefore, very low levels of e-participation. Consequently, they emphasized that the barriers to e-participation are directly related to the digital divide. As a solution, they proposed the "Citizen Opinion Mining Channels" framework to overcome the barriers to e-participation [17].

Similarly, Aikins and Chary [18] analyzed the relationship between e-participation and the digital divide in local government units in the United States. In the analysis, they made recommendations to increase citizens' access to ICTs based on the information and services provided by local governments. Similar to this research, they examined the tendency of local governments to use ICTs as a tool for communication or interaction with citizens. Additionally, they investigated how variables such as age, income, ethnicity, and education affect this interaction. Their findings showed that the deliberative features of local government websites are influenced by the size of the elderly and Black populations residing in municipalities [18].

Another study exploring the relationship between e-participation and digital exclusion is Ribeiro et al.'s [9] research on the use of social media in e-participation initiatives in Brazil. They conducted their analysis using national surveys related to the challenges in technology supply, citizens' access to ICTs, ICT usage, and digital tool ownership. They found that living in rural or urban areas, educational level, age group, and income level were critical variables influencing digital exclusion in Brazil. They determined that the government's activity on social media was low and that, despite the increase in e-participation options offered by the government, insufficient efforts were made to ensure that marginalized groups had access to these options [9].

Perez-Morote et al. [19] also analyzed the relationship between the development of e-participation and the digital divide in 178 UN countries. To measure digital exclusion, they used variables such as investment in telecommunications infrastructure, education, rural/urban location, age, gender, and political freedom. The UN E-Participation Index was used as the dependent variable to measure e-participation. Their findings revealed that investments in telecommunications infrastructure and educational level had a critical impact on the development of e-participation, while age groups and living in rural areas had a negative impact [19].

The insights obtained from such analyses have the potential to enrich demand-side analyses and studies based on secondary data. However, research from developing countries reveals a gap in understanding how local governments define, perceive, and respond to digital exclusion in relation to e-participation. The present study addresses this supply-side gap in the context of municipalities in Türkiye.

## 4. Methodology

This study conducted qualitative research to understand the digital exclusion and e-participation in municipalities in Ankara, from the municipalities' perspective. The interviews were conducted between August 21 and September 24, 2024, with one representative from the information technology (IT) departments of 10 municipalities, including 9 district municipalities and 1 metropolitan municipality in Ankara, through phone or email. The municipalities were selected considering criteria such as population density, geographical distribution, digital service delivery

capacity, and socioeconomic diversity. This diversity, reflecting various economic and demographic structures, is crucial for understanding how e-participation and digital exclusion are addressed.

The interviews were conducted in a semi-structured format, allowing each participant to elaborate on their experiences. Out of the 10 interviews, 5 were conducted via phone and 5 via email. Phone interviews averaged 30 minutes and were fully transcribed verbatim, while email responses varied in length (approx. 700-2500 words) and were used in their original form. The interview form consists of six questions. These questions aim to assess the goals and objectives behind the technological tools and channels (websites, mobile applications, and social media accounts) provided by municipalities for citizens' use, the criteria that municipalities utilize while designing the online platforms, how municipalities define their target audience when delivering information and services, and whether these tools are designed based on citizen demands, internal administrative procedures, or political decision-making mechanisms. In addition, the form investigates how the processes function when citizens interact with municipalities online, how the COVID-19 pandemic affected municipalities' e-participation processes, and what impact online interactions have had on the municipalities themselves.

The interview data were analyzed using MAXQDA software and coded through thematic analysis. Thematic analysis is considered a robust method for identifying patterns and meanings in qualitative data [21]. In this study, thematic analysis was preferred as it enables a detailed examination of complex issues such as digital exclusion and e-participation. Themes were created based on the interview data and following Braun and Clarke's [21] framework. The coding process considered frequently repeated expressions, emphasized issues, and the strategies municipalities presented regarding e-participation and digital exclusion. Initially, open coding was used to identify individual codes, followed by categorizing similar codes, and finally, forming main themes. The coding process began with the classification and association of key terms found in the interview transcripts, based on the context of the sentences and expressions in which they appeared, and in alignment with the research objectives. Subsequently, related codes were grouped under broader themes, and meaningful relationships between these themes were analyzed within the text. In this way, the themes were reviewed, defined, and named.

In this context, a word cloud representing the interview data is presented in Figure 1 below.



**Figure 1.** Word Cloud of the Interview Transcripts

The word cloud in Figure 1 shows the most frequently mentioned words in the transcripts. These keywords indicate that the interview transcripts contain concepts closely related to the research topic. The most frequent words, "citizen" and "municipality," reflect the supply and demand sides that are central to the study, while the frequent appearance of concepts related to the processes and tools of e-participation also aligns with the research focus. After gaining familiarity with the data, coding was conducted, and following the steps of the thematic analysis framework, codes, sub-themes, and four main themes were identified. The coding system is presented in Table 1 below. In this context, to make more detailed inferences about e-participation and digital exclusion, the online tools through which municipalities offer participation opportunities (websites, social media, and mobile applications) and the different e-participation levels (e-information, e-consultation, e-empowerment) were examined separately. Additionally, the determinants of digital exclusion were

analyzed under two sub-themes: factors affecting access to and use of technologies, and demographic factors.

**Table 1**

Code System

Code System	Frequency	Code System	Frequency
<b>E-Participation Tools</b>	<b>143</b>	<b>Digital Exclusion</b>	<b>134</b>
Mobile Application	21	Citizen Satisfaction	29
Social media	32	Trust in Technology	9
Website	30	Cybersecurity	10
Online Services	34	Accessibility Issues	41
E-Municipality Services	18	Digital Literacy	11
Integrations	8	Rural Area Users	5
<b>E-Participation Levels</b>	<b>186</b>	Disabled Users	6
Information Provision	39	Elderly Users	11
Transparency	12	Young Users	12
Consultation (Collaboration)	52	<b>Crisis Period (COVID-19)</b>	<b>17</b>
Request, Survey & Complaint	35	Digital Transition Effect	7
Feedback	37	Changes in Citizen Habits	2
Empowerment	11	COVID-19 Effect	8

## 5. Preliminary Findings

### 5.1. Dimensions of E-participation and Digital Exclusion

Within the scope of the research, the first theme was identified as "E-Participation Tools." Codes related to the online tools provided by municipalities and the services offered through these tools were grouped under this theme. From the perspective of municipalities, websites are primarily used by middle-aged and older adults with higher education levels since they offer official information but often suffer from complex interfaces, requiring a user-friendly design. Social media, on the other hand, appeals to young people and low-income groups, providing quick feedback and broad reach. However, it is not usually integrated into official processes and carries the risk of misinformation. Mobile apps are favored by young and middle-aged users with digital skills. They are user-friendly and facilitate active participation through instant notifications. Yet, they are not widely used.

The second theme was identified as "E-Participation Levels." Under this theme, codes related to citizens' levels of engagement in municipalities' e-participation processes were gathered. The levels of e-participation were examined within the framework of the three levels [22]. The first level is e-information, which involves one-way information flow from the government to the citizen (e.g., providing information to the public on a government website). The second level is e-consultation, a two-way interaction where citizens can provide feedback on the information and services offered by the government (e.g., collecting feedback, opinions, and suggestions from citizens). The third is e-empowerment, where citizens actively participate in policymaking processes (e.g., engaging citizens as co-participants and collaborating with the government). Among the codes, e-information (51) and e-consultation (52) are the most frequently mentioned e-participation levels. Indeed, they provided detailed information about feedback mechanisms, requests, and complaint processes, shedding light on the role of municipalities. E-empowerment (11) is among the least mentioned topics.

From the municipalities' perspective, at the e-information level, the primary barriers are related to access to basic information, particularly in terms of technology availability, infrastructure, and accessibility. Citizens with limited access to technology may face difficulties in using online systems. However, for those who do have access, obtaining online information is easier compared to other e-participation levels, so barriers like digital literacy tend to have less impact at this stage. The e-consultation level presents additional challenges, as participation is not only influenced by technology access but also by the frequency of usage and digital skills. Since this level involves two-way communication, the lack of digital literacy and access can weaken participation. Finally, e-empowerment represents the deepest level of participation, where citizens at risk of digital exclusion

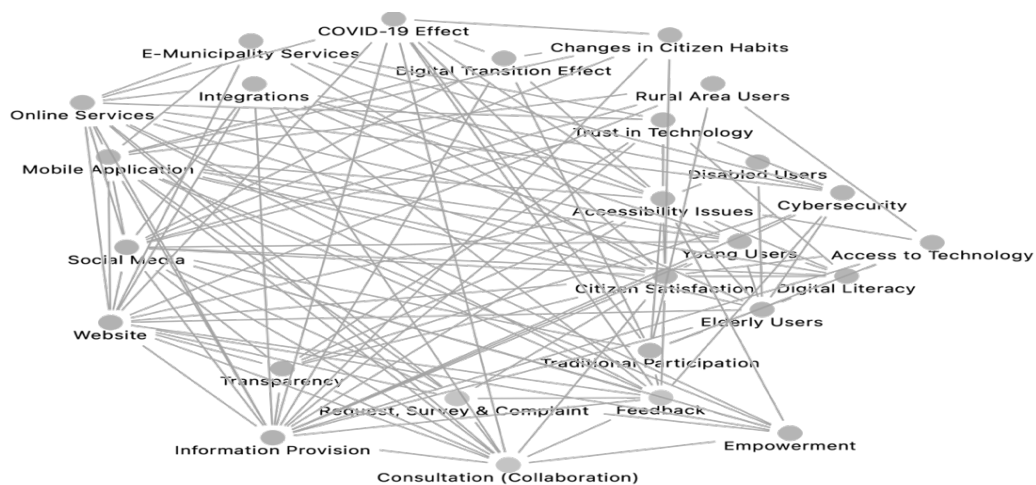
have very limited access. To engage in decision-making processes, citizens must overcome the digital divide. Individuals affected by digital exclusion often face struggles even in accessing information or engaging in e-consultation, which makes the impact of digital exclusion less significant at this level.

The third theme, "Digital Exclusion," is divided into two sub-themes: "Access to Technology" and "Demographic Barriers." Within the Access to Technology sub-theme, Accessibility (41) is the most frequently mentioned code, as municipal representatives explained how they included disadvantaged citizens through accessibility solutions. Under the Demographic Barriers sub-theme, Young Users (12) and Elderly Users (11) were mentioned by almost all municipalities, whereas Rural Area Users (5) and Disabled Users (6) were highlighted by only some municipalities. For municipalities, elderly users (65+) often face a lack of technological skills and encounter complex interfaces, leading to lower e-participation and a preference for traditional participation methods. Young users (18-35) are generally familiar with technology but are concerned about security and trust. However, they are active on social media, though they tend to have low engagement with formal feedback mechanisms. Users with disabilities experience a lack of accessibility, which results in very limited e-participation and a reliance on physical access to municipal services. Finally, residents in rural areas face infrastructure deficiencies and low internet speeds, leading to low e-participation rates and weak access to e-information tools. Digital exclusion, therefore, affects each demographic group in unique ways, influencing their ability and willingness to engage in e-participation activities.

Finally, the fourth theme was identified as "Crisis Period (COVID-19)." Three codes fall under this theme: the overall impact of COVID-19 (10), its effect on citizens' communication habits with municipalities (4), and its impact on the digital transformation of municipalities (9). The COVID-19 theme was incorporated into the research as a contextual variable to analyze how crisis periods influence the municipalities' approach to e-participation and digital exclusion. However, COVID-19 was rarely mentioned in the interviews. All three codes have low frequencies, and municipalities mainly discussed the challenges they faced due to the mandatory digitalization of certain services during the pandemic. In this context, the changes in e-participation during the pandemic were perceived as a necessity-driven solution rather than a voluntary transformation.

## 5.2. Relationships among the Themes

Based on the summaries above, it is possible to gain a basic understanding of municipalities' approaches to e-participation and digital exclusion. A relational analysis between these themes allows for more detailed interpretations. In this context, Figure 2 displays a relational network graph based on the themes and the coding system, illustrating the relationship network among the codes.



**Figure 2.** Relational Network between the Codes

When analyzing the connections of Theme 1 (E-Participation Tools) and Theme 2 (E-Participation Levels) to the digital exclusion theme, it is important to consider their interconnections to correctly interpret the research findings. The digital tools provided by municipalities play a critical role in

determining the level at which citizens participate. At the same time, changes in citizen participation at different e-participation levels also influence the use of online tools and services. It can be inferred that online services and social media are mostly used for information provision and e-consultation. The relationship between e-participation tools and more active participation forms, e-empowerment, appears weaker in the relational analysis. From the municipalities' perspective, social media is the primary online platform where citizens engage in feedback processes, its code is linked to all sub-codes under the e-participation levels theme. On the other hand, municipal websites are primarily addressed for news, announcements, and online services, making them more active in e-information. Among the e-participation levels, the most frequently discussed level in the interview transcripts is e-consultation. Feedback and request processes are frequently mentioned in relation to e-consultation, highlighting their importance within this level. This could explain why social media is more prominent than other tools.

The relationship between Theme 1 (E-Participation Tools) and Theme 3 (Digital Exclusion) exhibits strong and intense interactions. The fact that digital exclusion directly impacts citizens' access to digital tools and their ability to use them effectively is a theoretically expected outcome. Factors such as technological infrastructure, digital literacy gaps, and demographic barriers limit the use of e-participation tools. Conversely, the quality, content, and scope of e-participation tools and services directly influence digital exclusion levels.

When focusing on the relationship between digital exclusion and e-participation tools, issues related to accessing municipal websites and e-municipality services emerge as high-frequency concerns under the technology access sub-theme. However, given that municipalities frequently emphasize accessibility, user-friendly design, and citizen satisfaction, it can be inferred that they prioritize policies aimed at addressing access, usability, and skill-related issues contributing to the digital divide. When evaluated in the context of demographic barriers, it is observed that municipalities mention fewer policies specifically targeting groups at risk of digital exclusion. Indeed, the codes related to digitally excluded demographic groups mostly indicate that municipalities either have no initiatives in this area or only have future goals regarding inclusion efforts. This is one of the most significant findings of the study. From a supply-side perspective, municipalities frequently discuss policies and initiatives aimed at addressing technological access issues. However, they mention far fewer policies or initiatives targeting demographic and socio-economic barriers. It is noteworthy that municipalities mostly refer to demographic inclusion policies as part of their future plans rather than current implementations.

Furthermore, municipalities recognize that social media is predominantly used by younger citizens, while municipal websites, particularly for announcements and news, cater to all age groups. Several municipalities also state that e-participation tools are designed with privacy and cybersecurity concerns in mind. They mention that municipal mobile apps and websites are adapted for citizens with low digital literacy. Some municipalities have implemented security measures such as two-factor authentication and integration with the national e-Government Gateway.

The relational analysis between these themes reveals that municipalities seriously consider issues such as citizens' technology access, user-friendly design, accessibility options, security, and privacy when offering e-participation opportunities. However, taking measures against these barriers and developing policies is not sufficient alone. While municipalities focus on policies that enhance access for those already capable of using technology, they fail to actively include disadvantaged groups who should be targeted for digital inclusion policies. Although it is important to attract and encourage digitally capable citizens to participate in local processes, it is clear that municipalities lack a digital inclusion-oriented perspective for citizens at risk of digital exclusion, those with access issues, or those with limited digital skills. Below are some interview excerpts regarding the relationship between these two themes:

- Municipality 5: "Young people use our mobile applications more frequently, but elderly citizens or those who are not comfortable with technology prefer to visit the municipal building in person to complete their transactions."

- Municipality 1: "We don't have a specific online application for the elderly and disadvantaged groups, but we are working on policies for the future."

Similar to the relationship discussed above, there is also a strong and intense two-way network of relationships between Theme 2 (E-Participation Levels) and Theme 3 (Digital Exclusion). Technological and demographic barriers may lead to the exclusion of citizens from e-participation processes or limit their participation to only basic levels such as e-information or e-consultation, preventing them from accessing more interactive processes like collaboration and empowerment. On the other hand, municipal policies aimed at expanding e-participation opportunities at different levels and ensuring citizens' access to these opportunities can lead to changes in digital exclusion levels.

When examining the relational network between digital exclusion and e-participation levels, the results show that the causes of digital exclusion and the challenges faced by at-risk citizens are closely linked to e-participation levels. Variables in the technology access category indicate that citizens' concerns about privacy and security, as well as their levels of digital literacy, significantly affect their online interactions with municipalities. Municipal representatives particularly emphasize that user experience is a factor that increases citizen engagement in e-consultation processes. Additionally, it has been noted that as access to technology becomes more problematic, citizens tend to limit their interaction to following announcements on municipal websites or disengage entirely from municipal services. However, the relationship between digital exclusion variables and the e-empowerment level remains extremely weak, suggesting that digital exclusion has little to no meaningful impact on e-empowerment.

In terms of demographic barriers, it is frequently stated that e-consultation, requests, surveys, complaints, and feedback processes are mostly dominated by young people with high levels of digital literacy. On the other hand, according to municipalities, elderly individuals, people with disabilities, and those living in rural areas still tend to prefer traditional participation methods. This analysis clearly reveals a lack of initiatives aimed at the digital inclusion of disadvantaged groups.

When evaluating the relationship between e-participation levels and digital exclusion, most municipal representatives emphasize that citizens' demands and feedback play a crucial role in the digitalization process, which is why municipalities prioritize e-consultation processes. There is a consensus that keeping e-information services active and up-to-date positively influences citizens' perceptions of transparency and ensures that many citizens at risk of digital exclusion can access e-information services.

Although there is a strong relationship between these two themes, the connections between e-empowerment and digital barriers, remain relatively weak. One significant point for this research is that as e-participation levels increase hierarchically, their relationship with digital exclusion weakens. From the municipalities' perspective, it is believed that disadvantaged groups who are digitally excluded or at risk of digital exclusion are most likely to engage in e-information or, at most, e-consultation processes. In this regard, the first conclusion is that municipalities recognize and acknowledge the impact of digital exclusion on e-participation. The second is that, in policies designed to combat digital exclusion, municipalities generally focus on e-information, the lowest hierarchical level of e-participation, and to some extent, on e-consultation processes. As seen in the interview excerpts below regarding the relationship between these two themes, municipalities have acknowledged the issue of digital exclusion, proposed solutions, set policies and goals, yet provided very few examples of initiatives that actively include disadvantaged citizens.

- Municipality 3: "On our website, there is a section where citizens can leave feedback, but most people don't use it. They usually call by phone or visit the municipality in person. We need to make these platforms more user-friendly, especially for those with low digital skills."
- Municipality 9: "Our goal is for citizens to avoid the need to visit the municipality and handle everything online, so they don't have to go through the hassle of coming here. However, for elderly or those not familiar with ICTs, we also provide information through billboards."

Finally, the relationship between Theme 4 (Crisis Period - COVID-19) and the other three themes was analyzed through network graph and interview transcripts. While the relationships between



Theme 4 and the other themes are generally strong, the low frequency of references to COVID-19 in the interviews makes these connections appear weaker. Municipal representatives acknowledge that COVID-19 period increased the demand for e-participation tools. However, they also express that the exclusion of citizens who could not access online opportunities further deepened the digital divide. From their perspective, the accelerated digital transformation during the pandemic not only increased citizens' use of various online tools for communication and information access with municipalities but also intensified participation processes at different e-participation levels. However, the temporary solutions provided for citizens facing digital literacy and infrastructure issues during the pandemic did not result in permanent digital inclusivity. In summary, although rarely discussed in the interviews, citizens' access to ICTs and their ability to engage increased during the pandemic. However, this increase mostly remained at the e-information level, while more active forms of participation, such as e-empowerment, remained limited.

Municipalities have particularly identified that access to digital tools remained insufficient during and after the pandemic in rural areas and low-income groups. Additionally, the wireless internet infrastructure and mobile support points provided by municipalities during the pandemic were not sustained afterward, preventing the equitable adoption of online services. Therefore, while the pandemic triggered digital transformation and increased citizens' use of digital tools, some demographic groups reverted to their old habits after the pandemic. Below are some interview excerpts regarding the relationship between these two themes:

- Municipality 2: "Citizens learned how to handle their tasks online. Previously, they used to visit the municipality to submit petitions, now they send their complaints or requests online."
- Municipality 4: "During the pandemic, some citizens learned how to handle their municipal affairs online. However, some still continue to visit the municipality in person."

## 6. Discussion

The findings of this research highlight the complex interplay between e-participation tools, e-participation levels, and digital exclusion within the context of municipalities in Ankara. The data indicate that while municipalities are actively working to provide online services and promote online citizen engagement, various factors continue to limit the effectiveness of these e-participation initiatives. Interviews show that municipalities have a positive approach to digitalization but face some challenges. They emphasize that they have taken significant steps toward transitioning to e-municipality by reducing face-to-face processes, developed different digital tools to encourage e-participation, and implemented various strategies to reduce digital exclusion.

According to the preliminary findings, the first implication is that municipalities have increased the information and services they offer to citizens via online tools, but they tailor their target audiences depending on the specific e-participation tool. The thematic analysis results suggest that municipalities generally believe that citizens with lower levels of digital inclusion can more frequently access municipal websites and find them easier to use. Therefore, they prioritize accessibility and user-friendly design for websites. From a supply-side perspective, as more formal and information-focused tools, websites appeal to a broad user base. On the other hand, social media and mobile applications reach also broad audiences despite digital exclusion; however, these audiences typically possess higher levels of digital literacy and access to technology. In this context, municipalities must consider the differences between the tools while producing policies for e-participation processes carried out through various online tools [4], but they should also develop unique strategies to include disadvantaged groups for each online tool.

Municipalities recognize digital exclusion as a multifaceted issue, encompassing both technological and demographic barriers, and they acknowledge the significance of user-friendly design, accessibility, and security as potential solutions. However, the second implication is that their policies mainly focus on improving access for those who are already somewhat digitally included. Meanwhile, disadvantaged groups are often overlooked in current initiatives. This discrepancy suggests that while municipalities are making strides in digitizing services, they are not sufficiently

addressing the deeper socioeconomic and demographic factors that perpetuate digital exclusion. By using their data indicating that disadvantaged groups have a high demand for traditional methods, most municipalities have prioritized meeting these groups' demands rather than including them in online participation processes.

Thirdly, municipal representatives frequently emphasize their focus on request, survey, complaint, and feedback systems, stating that they make decisions and design services based on data collected from citizens. Establishing various systems to gather feedback from citizens and shaping their services accordingly represents significant progress in observing the outcomes of e-participation. In this context, municipalities clearly observe that citizens' participation in e-consultation processes increases as their level of digital inclusion improves. However, there is a noticeable shortcoming in integrating these processes with broader digital inclusion strategies. Indeed, discussions about the e-empowerment level rarely address groups at risk of digital exclusion or the challenges that cause digital exclusion.

Finally, although the COVID-19 pandemic was not a dominant topic in the interviews, the data reveal that the accelerated digitalization of certain services accelerated citizens' adoption of e-participation tools. Municipalities experienced a surge in online requests, feedback, and service usage. Nonetheless, they realized that this rapid transformation did not necessarily lead to permanent digital inclusion. Consequently, the pandemic underscored both the potential for rapid digital transformation and the entrenched barriers that prevent certain citizens from fully benefiting from e-participation opportunities.

This research provides important insights into how municipalities in Ankara perceive and address the relationship between e-participation and digital exclusion. The preliminary findings demonstrate that a purely supply-side focus on technological provision is insufficient to combat digital exclusion effectively. Municipalities need to adopt a more holistic approach that includes targeted outreach, training, and policies addressing socioeconomic and demographic barriers. By doing so, they can foster deeper e-participation, reduce inequalities, and move toward genuinely inclusive governance.

Overall, these results underscore the importance of integrating both technological and socioeconomic considerations into municipal e-participation strategies. Addressing digital exclusion requires a nuanced understanding of the different factors that shape citizens' online engagement. By developing inclusive policies, investing in long-term digital engagement programs, and actively encouraging collaboration at the e-empowerment level, municipalities can help ensure that e-participation truly serves all segments of society. Based on the research findings, it can be stated that municipalities in Türkiye should develop digital literacy programs, diversify accessibility options tailored to different disadvantaged groups and online tools, conduct further research on groups with low digital engagement, and ensure the sustainability of the digital services they offer. These measures will help minimize digital exclusion and make e-participation processes more efficient and inclusive.

The study is based on a limited number of interviews and only reflects supply-side perspectives. The sample of the study was limited due to the low number of municipalities that adequately provide online services to citizens. This limitation poses challenges for the generalizability of the study's findings. In this context, as part of the future work, it is intended to support and strengthen the preliminary findings by analyzing the online channels and official documents of the municipalities included in the sample, in addition to the interviews. Strategic plans, digital service reports, website content, and social media policies of the municipalities will be analyzed to examine whether the strategies mentioned in the interviews are actually reflected in official documents and policies. Therefore, future work will combine the interview data with new qualitative data for providing more in-depth analyses.

## **Acknowledgements**

This study is derived from Niyazi Karabulut's thesis titled "Examining the Relationship between Digital Exclusion and Citizens' E-participation in Municipalities: The Case of Ankara, Türkiye." It

was supported by TÜBİTAK (Project 223K161) and METU BAP (Project TEZ-D-401-2023-11368). This study was also supported by TÜBİTAK 2224-A program for presentation in EGOV2025.

## Declaration on Generative AI

During the preparation of this work, the authors used GPT-4o for grammar and spelling check. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the publication's content.

## References

- [1] S. Cho, K. Mossberger, D. Swindell, J. Selby, Experimenting with public engagement platforms in local government. *Urban Affairs Review* 57(3) (2021) 763-793. doi:10.1177/1078087419897821
- [2] A. Chadwick, *The Hybrid Media System: Politics and Power*. 1st ed. Oxford University Press, 2013
- [3] R. K. Polat, Digital exclusion in Turkey: A policy perspective. *Government Information Quarterly* 29(4) (2012) 589–596. doi:10.1016/j.giq.2012.03.002
- [4] N. Karabulut, Dijital dislanma ve e-katılım ilişkisi: kuramsal bir inceleme ve model önerisi, in: E. Seçkiner Bingöl (Ed.), *Kamu yönetiminde katılım üzerine güncel tartışmalar*, 1st. ed., Gazi Kitabevi, Ankara, Türkiye, 2022, pp. 255-284.
- [5] A. J. van Deursen, E. J. Helsper, The Third-Level Digital Divide: Who Benefits Most from Being Online?. *Communication and Information Technologies Annual* 10 (2015) 29-52. doi:10.1108/S2050-2060201510
- [6] M. Janssen, E. Estevez, Lean Government and Platform-Based Governance: Doing More with Less. *Government Information Quarterly* 30(1), (2013) 1-8. Doi: 10.1016/j.giq.2012.11.003
- [7] Y. Zheng, H. L. Schachter, M. Holzer, The impact of government form on e-participation: A study of New Jersey municipalities. *Government Information Quarterly* 31(4) (2014) 653–659. doi:10.1016/j.giq.2014.06.004
- [8] Ø. Sæbø, J. Rose, L. S. Flak, The shape of eParticipation: Characterizing an emerging research area. *Government Information Quarterly* 25(3) (2008) 400–428. doi: 10.1016/j.giq.2007.04.007
- [9] M. M. Ribeiro, M. A. Cunha, A. F. Barbosa, E-Participation, social media and Digital Gap: Challenges in the Brazilian Context, in: *Proceedings of the 19th Annual International Conference on Digital Government Research: Governance in the Data Age*, ACM Press, New York, NY, 2018, pp. 1-9. doi:10.1145/3209281.3209373
- [10] J. van Dijk, *The digital divide*, 1st ed., Polity Press, Cambridge, UK, 2020.
- [11] B. Uçar Kocaoğlu, A. Saylam, Kamu Yönetiminde Yönetmelik Kapasiteyi E-Katılım Perspektifinden Değerlendirmek. *Amme İdaresi Dergisi* 55(2) (2022) 63-88.
- [12] N. Yavuz, Digital Divide and Citizen Participation in Public Policy Making, in N. Karkin, V. Gocoglu (Ed.), *Citizen-Centered Public Policy Making in Turkey*, 1st ed., Springer International Publishing, New York, NY, 2023, pp. 115-130.
- [13] TÜİK, Hanehalkı Bilişim Teknolojileri (BT) Kullanım Araştırması, 2024. URL: [https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-\(BT\)-Kullanim-Arastirmasi-2024-53492](https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2024-53492)
- [14] N. Karkin, E-Katılım kavramı ve süreci: Kamu siyasa oluşum sürecine vatandaş katkısının olasılığı. *Sosyoekonomi* 17 (2012) 41-62.
- [15] N. Karabulut, E. Bayrakçı, Yerelde Demokrasi ve Yerel E-Katılım. *Turkish Studies-Economics, Finance, Politics* 14 (2019) 71-94.
- [16] N. Karabulut, J. R. Gil-Garcia: Understanding the Relationship between Digital Inclusion and E-Participation. *Proceedings of EGOV-CeDEM-ePart EGOV2024*, Leuven, Belgium September 1-5, 2024, CEUR-WS.org, CEUR-WS.org/Vol-3737/paper17.pdf
- [17] L. Porwol, J. Breslin, C. Coughlan, B. Mulligan, Social Inclusion and Digital Divide: eParticipation Dilemmas in Municipalities, in: *Proceedings of the 6th International Conference*

- on Theory and Practice of Electronic Governance - ICEGOV '12, ACM Press, New York, NY, 2012, pp. 389–393. doi: 10.1145/2463728.2463802
- [18] S. K. Aikins, M. Chary, Online participation and digital divide: An empirical evaluation of US Midwestern municipalities, in: *Digital Literacy: Concepts, Methodologies, Tools, and Applications*, IGI Global, New York, NY, 2013, pp. 63-85. doi:10.4018/978-1-4666-1852-7.ch004
  - [19] R. Perez-Morote, C. P. Rosa, E. A. Cortes, Exploring the Relation Between the Digital Divide and Government's Effort to Develop E-Participation: A Global Longitudinal Analysis, in: *Research Anthology on Citizen Engagement and Activism for Social Change*, IGI Global, New York, NY, 2022, pp. 997-1018. doi:10.4018/978-1-6684-3706-3
  - [20] M. Yıldız, Digital divide in Turkey: A general assessment, in: E. Ferro, Y. K. Dwivedi, J. R. Gil-Garcia, M. D. Williams (Eds.), *Handbook of research on overcoming digital divides: Constructing an equitable and competitive information society*, IGI-Global, New York, NY, 2010, pp. 75-89. doi:10.4018/978-1-60566-699-0.ch005
  - [21] V. Braun, V. Clarke, Using thematic analysis in psychology. *Qualitative Research in Psychology* 3(2) (2006) 77–101. doi: 10.1191/1478088706qp063oa
  - [22] A. Macintosh, Characterizing e-participation in policymaking, in: *HICSS '04 Proceedings of the Proceedings of the 37th Annual Hawaii International Conference on System Sciences (HICSS'04)*, ACM Press, Washington, DC, 2004, pp. 1–10. doi:10.5555/962753.962993