INNOVADE
Innovative Democracy Through Digitalisation

D4.1 – Digital Democracy Preference Toolkit

WP4 – Tasks 4.1 & 4.2

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Document information

This report outlines foundations of digital democracy, including a focus on digital democracy in general, digital deliberation, online participation, open governance, digital activism, e-voting, global trends that influence digital democracy, and foreign interferences in democracy.

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Abbreviations and acronyms

Abbr.	Description	Abbr.	Description
DDA	Digital democracy application	Q	Question
n	Sample size	r	Correlation
M	Mean	RQ	Research question
PDCA	Plan, Do, Check, Act	SD	Standard deviation
PnP	Plug & Play	WP	Work package

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Table of content

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Executive Summary

The executive summary provides a concise overview of this deliverable, which examines **citizens' and governments' perspectives on digital democracy applications (DDAs)** in Europe from a practical standpoint. Yet, insights from academic papers are used to contextualise the insights gained from citizens and policymakers involved in (digital) citizen participation.

To address the research questions on citizen and governmental perspectives on DDAs in Europe, we employed a **mixed-methods design**: (a) two online surveys were designed to complement each other in identifying similarities and differences between the two stakeholder groups, their aligned or conflicting interests, and their perspectives on one another, and (b) two participatory workshops were held to explore citizen preferences in even greater depth. This combined approach aimed **to develop a solid understanding of DDA requirements** and, hence, a list of recommendations for developing a DDA that meets expectations and aspirations by being useful, user-friendly, and secure for both back-end and front-end users.

Key findings of our analyses include:

- Citizens and government actors agree that digital democracy should move beyond simple ideation to focus on tangible outcomes and deep engagement. Citizens prioritise features such as reporting local issues, voting on projects, and tracking progress, while government representatives aim to involve citizens in more substantial co-production and co-design. Both groups recognise that for a tool to be considered successful, it must enable citizen input to have real, visible impact on decision-making, rather than being a mere symbolic gesture.
- There is a strong consensus that transparency and trust are the most critical objectives for any DDA. Citizens want to see exactly how their individual contributions shape final decisions and to know that their input does not vanish without a response. Correspondingly, government officials call for better identification of citizen participants to facilitate a two-way feedback loop and keep the public informed about project lifecycles.
- Both sides point towards hybrid participation models to overcome distinct barriers to engagement. Integrating offline formats ensures that technology complements rather than replaces the human touch essential to inclusive and representative democracy.

Based on these main findings, we derived **ten recommendations** for designing a DDA. Several of these can also be traced back to recommendations and/or concerns formulated earlier in INNOVADE's Interdisciplinary Knowledge Base (Deliverable 2.1) (Fuchs et al. 2025).

Finally, **we reiterate that DDAs should not be used merely for the sake of the technologies** themselves. A well-considered vision of where the administration wants to go with this citizen participation (taking into account citizens' needs and profound desires) and how it will integrate and follow up on the results is essential. Ultimately, successful citizen participation requires collaboration, shared understanding, sound coordination, and leadership, akin to an orchestral performance in which all actors contribute harmoniously to create public value.

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1 Introduction

Dr. Laurien Coenen, KU Leuven, Public Governance Institute, Belgium
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1.1 Problem statement

Studying citizen and government perspectives before developing a Digital Democracy Application (DDA) is critical because **technical availability alone does not guarantee successful digital democracy**. Understanding citizen needs is necessary to overcome persistent social, economic, and institutional barriers to technology adoption and to identify actionable features that make digital democracy meaningful. Research shows that many digital tools fail due to weak feedback mechanisms and a lack of institutional responsiveness, making it essential to determine which specific features and outcomes citizens value most before design begins. Simultaneously, **mapping** the **expectations and preferences** of government stakeholders **is vital** to determining whether an initiative will reach its full potential and **to ensuring that the newly designed DDA does not risk becoming obsolete before launch**. By investigating front-end and back-end requirements, INNOVADE aims to tailor the design of its DDA as closely as possible to prevailing needs, expectations and aspirations.

1.2 Research questions and objectives

Within the framework of INNOVADE, we will therefore examine both **stakeholder groups'** perspectives more closely. In doing so, we are particularly interested in their **assessments, aspirations, expectations, and concerns about (future) DDAs** at the local policy level, as the INNOVADE app to be developed will be piloted in the municipalities of Geel (Belgium) and San Martín de la Vega (Spain). These insights, drawn from local experience, will, however, be tested against the perspectives of public citizen participation organisers at other policy levels within Europe. We do so to increase the generalisability of our findings and ensure the INNOVADE application is sufficiently scalable to more complex policy levels and topics.

For those purposes, this deliverable will be guided by the following **research questions** (RQs):

1) Which **expectations and preferences** concerning **DDAs** do **citizens** hold?
    - How, for what, and why are citizens (not) using digital technology for democracy now?
    - What are democratic functions or processes to which technology can or should (not) contribute meaningfully?

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- How must interaction with digital technology (not) be designed to be efficient and rewarding for citizens?

2) Which **expectations and preferences** do governmental actors involved in the organisation of (digital) citizen participation hold on current and future **DDAs**?
   - What digital democracy tools are public actors currently using?
   - How are public actors currently using these tools (i.e., which activation methods does the tool support and what accompanying measures do they take to get this started)?
   - What do they (not) appreciate in the tools that they use or have been using?
   - What is, according to public actors, entirely missing in the tools that are currently available to them?
   - Which challenges do public actors face or have public actors been facing when trying to involve citizens in policymaking and service delivery through digital means?
   - What characteristics should digital democracy tools have in the future (to ensure that also those who thus far stayed away from digital democracy will actually use it)?

3) What **common ground** can be identified in the expectations and preferences of both citizens and governmental actors involved in organising (digital) citizen participation, and how can these be **translated into tangible design recommendations**?

1.3 Deliverable approach

We address the research questions through **two parallel steps**, considering the citizen and government sides separately. Two parallel online surveys have been designed to complement one another, identifying similarities and differences between the two stakeholder groups, their aligned or conflicting interests, and their perspectives on one another. Each step has a dedicated chapter in this deliverable, with a brief introduction, an elaboration of the methodological choices and analyses, a discussion of the partial results, and a translation into practical takeaways for readers.

In the **remainder** of this **digital democracy preferences toolkit**, the reader will first be introduced to **citizen perspectives** on DDAs in **Chapter 2**. **Chapter 3** then considers the **governmental perspective(s)** on the issue. In **Chapter 4,** we conclude by summarising the main findings and/or partial results from both chapters that are relevant to answering RQ3, and by modelling them into a set of tangible **design recommendations**.

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2 Citizen perspectives on digital democracy tools

Xenia Klinge, Deutsches Forschungszentrum für Künstliche Intelligenz, Germany

2.1 Introduction

Digital platforms for civic participation promise to make politics more transparent, responsive, and inclusive. To develop software for digital democracy, the perspectives of its potential users must be assessed and taken into account. We conducted an online survey and two participatory workshops in the municipalities that will pilot the app, investigating citizens' perspectives on digital democracy and translating the empirical insights into design guidelines for future civic-technology pilots.

This chapter presents a comprehensive analysis of citizen perspectives on digital democracy tools, structured around **three main research questions** that guide our understanding of the current state and future potential of digital democracy:

- How, for what, and why are citizens currently (not) using digital technology for democracy?
- What are democratic functions or processes to which technology can or should (not) meaningfully contribute?
- How must interaction with digital technology (not) be designed to be efficient and rewarding?

Through this empirical investigation, we provide actionable insights for the development of a **Digital Democracy Application (DDA)** and broader digital democracy frameworks, while also contributing to the scientific understanding of citizen needs and expectations in this rapidly evolving domain.

2.2 Literature

Over the last years, DDAs have emerged as both a response to, and a catalyst for, changing patterns of citizen engagement within democracies. While digitalisation has expanded civic opportunities, it has also made visible the persistent barriers, be they social, physical, economic, or institutional, that shape the adoption and impact of democracy technology (Norris 2000; Van Dijk 2020). With the citizen survey and workshops, we aim to move beyond the well-documented digital divide (see, for example, Moraliyska 2024), instead identifying actionable design features and workflow requirements that can make digital democracy more meaningful and effective for citizens.

The digital divide remains a foundational concern in the literature on digital democracy. Early research conceptualised the divide as a question of physical access to devices and connectivity, coining the concept of 'information poverty' (Norris 2000). However, the debate has since evolved to foreground multidimensional inequalities in digital skills, confidence, and meaningful use, intersecting with axes such as age, gender, education, income, and territorial context (Van Dijk 2020). This 'inequality loop' shows how digital exclusion can reinforce pre-existing social disadvantage, particularly in rural or low-income settings, and among older or less educated populations (Ragnedda et al. 2022).

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Recent European research demonstrates that, while device penetration and connectivity have increased, significant gaps persist in digital literacy and in the capacity to leverage technology for civic participation (Horizon Europe 2024). The most disadvantaged groups remain less likely to benefit from digital democracy initiatives without targeted support and policy interventions. Nevertheless, these barriers are now well-documented. The present research therefore takes these findings as a given, shifting attention to the preferences and expectations of those citizens who are digitally equipped but remain wary or disengaged from digital democratic participation

A second central strand of relevant literature concerns the actual features and participation channels embedded in DDAs. Multiple reviews and comparative studies have catalogued the variety of options, including e-consultations, participatory budgeting, digital petitions, and structured feedback mechanisms (Gilman 2016). However, a recurring finding is that technical availability alone does not guarantee engagement: citizens are more likely to participate when they perceive that their input will have real, visible impact, and when they trust that the process is transparent, secure, and responsive (Asimakopoulos 2025).

Existing survey research and practical deployments show that citizens value clear workflows, transparency about how their input is used, and structured feedback loops that confirm their contributions and link them to outcomes (Aichholzer and Rose 2020; Helbing et al. 2023). Nevertheless, there is a gap in the literature regarding which specific features and outcomes citizens most desire at the municipal level, and how these preferences differ across contexts. The present survey addresses this gap by incorporating established scales for political efficacy and engagement, while extending into less explored areas such as trust, outcome expectations, and design requirements.

Successful past initiatives, such as those piloted in the D-CENT and DECODE projects, have demonstrated the potential for participatory budgeting, crowdsourced policymaking, and decentralized feedback systems to empower citizens and build collective action (Fischli and Muldoon 2024). However, many digital democracy tools have also been found to fail to deliver on their promise of impact, often due to weak feedback mechanisms, lack of institutional responsiveness, or insufficient attention to inclusion and accessibility (Aichholzer and Rose 2020). One recurring lesson is the importance of hybrid models that combine digital and offline participation, thus accommodating diverse preferences and reducing barriers for less digitally fluent citizens. Participatory research and co-design approaches where citizens are involved not just as users, but as co-creators and evaluators are increasingly recognized as best practice for ensuring relevance, legitimacy, and uptake (Horizon Europe 2024). For this reason, they are also being followed in the survey plus workshop approach to collect preferences and concerns.

In summary, while the literature has mapped barriers and motivators for digital democracy, there remains a need for actionable, citizen-driven design recommendations at the feature and workflow level, especially at the municipal scale. The citizen survey aims to close this gap by systematically identifying which DDA characteristics are most desired, clarifying expectations for feedback and transparency, and testing these propositions in a large, stratified European sample.

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2.3 Methodology

2.3.1 Citizen survey

Research context and sampling strategy

We created a questionnaire in LimeSurvey and used Prolific to recruit 400 participants meeting specific eligibility criteria for EU citizenship, gender and age stratification. The survey was estimated to take 20 minutes, and participants were compensated at Prolific's standard rate of £9 per hour. Additionally, the survey was distributed to workshop participants in pilot municipalities via city newsletter or direct contact.

By November 25, 2025, the survey had a total of 417 complete answers. The target number of 400 had not been reached on Prolific, which stagnated at around 393 completed and accepted participations, with new entries coming in slowly. Still, the vast majority were Prolific members, identified by having turned in a Prolific ID for later approval on the platform.

Questionnaire build-up and variables

The questionnaire was originally developed in English and subsequently translated into Dutch and Spanish, reflecting the language needs of participants from workshops and piloting municipalities. While these translations were made available to ensure inclusivity, uptake was modest, likely due to the predominantly English-speaking user base on the Prolific recruitment platform, one participant responded via the Spanish version (but did not complete the survey), and 14 via the Dutch version (8 with complete entries). Occasionally, respondents answered free-text questions in their own language, such as Spanish, Italian, or German, despite having selected the English survey version.

The questionnaire consisted of 29 main questions organised into thematic blocks: Status Quo, Potential, and Design. This structure was chosen to comprehensively capture both the current landscape of digital democracy engagement and citizens' expectations for future technology. The Status Quo block assessed awareness of digital democracy, access to technology, and experience with existing tools. The Potential block explored perceived deficits in current participation mechanisms, desired features and outcomes for a democracy app, and beliefs about the efficacy of digital tools. The Design block focused on interaction preferences, feedback needs, trust, and concerns about digital participation. Supplementary demographic questions, including age, gender, education, and country of residence, allowed for stratified analysis and contextualisation.

A diverse array of question formats was employed to balance depth and respondent fatigue. These included: 3- and 5-point scales (e.g., perceived importance of outcomes, trust in institutions, seriousness of risks), frequency scales (e.g., how often participants interact with public bodies or use various devices), single and multiple-choice items (e.g., preferred participation modes, influence preferences), feature matrices (e.g., prior use and perceived importance of app features), as well as several, often optional open-text responses (e.g., suggestions for features, perceived barriers, and additional comments).

Each variable was coded in accordance with the protocol, allowing for quantitative analysis of closed-ended items and thematic analysis of open responses. This design enabled both robust statistical insights and the capture of nuanced, citizen-driven perspectives on digital democracy technologies.

Data cleaning procedure

Of the 468 total survey answers, 417 were complete and 51 partial. We dropped all partial answers, as most of them stopped early on.

Two attention checks were implemented in the survey as sub questions to larger agreement matrices. The first check read "Please select "Used" and "Nice to have" here" on a double scale in Q05, the second one "Please select "Very Serious" here" in Q19. We dropped eight entries due to failed attention checks (six from Prolific) and sent the participants in question rejections on Prolific, explaining the rejection with the failed attention check. However, we kept three entries (two from Prolific whose submissions are also accepted) with one failed attention check each, as in manual inspection, their free-text answers reveal varied and well-argued thoughts and all three took at least 20 minutes for the full survey.

Some additional cleaning concerned the columns with redundant or unused information, like start and end date. Furthermore, we replaced string answer codes like 'AO01' in with their numerical values for better processing.

A part of the cleaning process was also an intricate scan for sensitive data. The survey itself only asked for basic demographics, such as age group or an optional gender association, but there is a risk that free-text answers disclose identifying information. While most comments do not contain directly identifying information, there were a few entries where individuals mention potentially sensitive data, or where risk of indirect identification may occur due to context, e.g. occupation or role disclosures, referral to specific only locally relevant URLs or mentioning of disabilities. No direct names beyond country of residence, nor phone numbers or addresses were found. To ensure GDPR compliance before publishing the dataset, occurrences of potentially sensitive information (four occurrences) were either dropped entirely or replaced with broader, less specific data, such as a job description with the general professional area.

The full cleaned dataset will be published in an open repository upon completion.

2.3.2 Participatory workshops

As an additional part of the empirical research, two in-person participatory workshops were conducted in the pilot municipalities: San Martín de la Vega (Spain) and Geel (Belgium). The core objective of these workshops was to empower citizens to ideate and contribute meaningfully to the development of a digital democracy app, ensuring a people-centred design approach. The workshops were designed to complement the broader online survey, providing a more qualitative, interactive setting for deeper exploration of citizen needs, expectations, and concerns regarding digital democracy technologies.

Both workshops were held in the local language of the municipality with public representatives, scheduled as evening events of approximately one hour to maximise accessibility. The agenda for **each workshop** followed a **similar structure**:

- **Introduction and Groundwork** (15 min): Moderators should welcome participants, introduce the project and the concept of digital democracy, and outline the workshop's goals. Participants would be encouraged to share their perspectives as future users and co-creators of the app.

- **Icebreaker Activity** ("Fix One Thing", 10 min): Participants would introduce themselves and share their main frustrations with municipal or governmental interactions. Each participant then was to suggest a solution for the previous person's concern, fostering a collaborative and open atmosphere, and continue with their own until the cycle was completed.
- **Survey Integration and Discussion** (10 min): Preliminary survey results should be shared, highlighting key findings on desired app features and major concerns. Participants would discuss and rate functionalities (e.g., "Not Important", "Nice to Have", "Essential") in line with the online survey structure and vote on the most critical features.
- **Group Ideation** (20 min): Attendees would split into two groups:
    - In San Martín de la Vega, one group was to develop citizen personas to represent different user types, while the other group would imagine both ideal (utopian) and failed (dystopian) versions of the app. Scenarios then should be role-played to explore how different personas would interact with the app in both best- and worst-case scenarios.
    - In Geel, groups were to map out specific use cases for the app, one envisioning an ideal, impactful, and motivating version, and the other a dysfunctional or risky version. Each group should sketch user interfaces or storyboards and present their scenarios for comparison and discussion.
- **Plenary Discussion and Wrap-Up** (10 min): Groups reconvened to present their findings, discuss the contrasts between utopian and dystopian scenarios, and reflect on what design elements matter most. Participants would be invited to share final thoughts and suggestions for the app and informed about next steps and further opportunities for involvement.

The workshops were held in September (San Martín de la Vega) and November (Geel) 2025 with three and 13 citizen participants, respectively. All material generated during the workshops (e.g., audio recordings, sketches, notes, scenarios) was collected for analysis. These qualitative insights were collected to be compared with survey data and municipal perspectives to inform the app's design and requirements. The participatory approach aimed to ensure that the resulting digital democracy tool addresses real user needs and concerns, balancing inclusivity, usability, and trust.

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2.4 Analysis of the citizen survey data

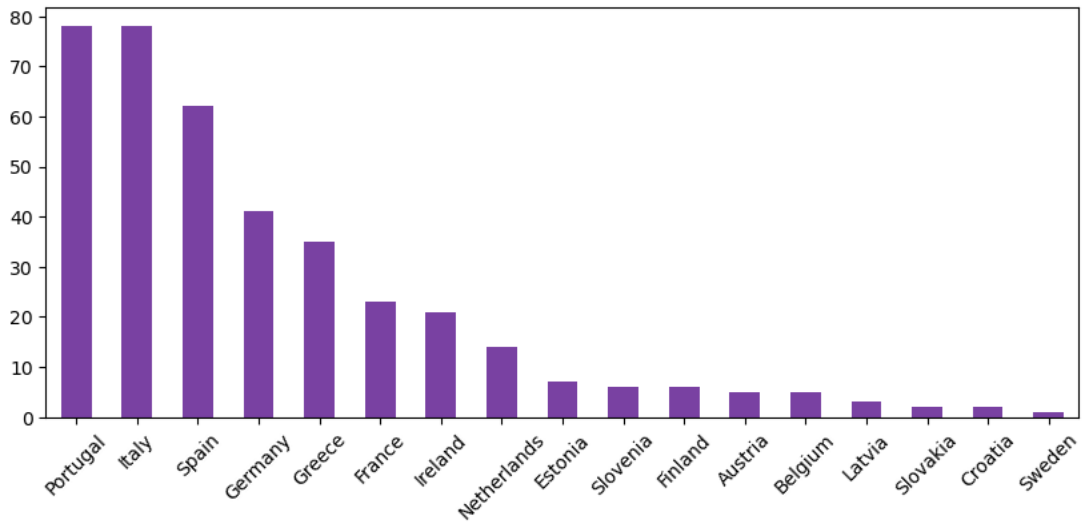
2.4.1 General respondent overview

After cleaning, 406 survey entries remain, 395 of which come from prolific participants. Average time taken for the full survey with 29 questions is about 20 minutes. Gender distribution is balanced with about 52% male participants and a small number of entries indicating "Other" or refusal to disclose gender. Similarly, of the four age groups given (18-29, 30-44, 45-59, 60-100), each covers about one quarter of participants, with the oldest group slightly less represented, and mean age at 43.6.

Education in the sample was relatively high, measured by formal degree. About half of the participants have a university degree from undergraduate (19%) to doctorate (6%). This is typical for online panel studies but limits generalisability to populations with lower formal education.

Country of residence shows a strong disbalance towards southern EU countries (**Figure 2.1**), with Portugal, Italy and Spain making out over 50% of all entries and only few participants from northern countries. This overrepresentation should be kept in mind when interpreting results, as cultural and institutional contexts vary substantially across European regions. Since all EU countries were included in the stratification without quotas, it is possible that this distribution is representative of prolific users, indicating higher usage rates in these countries.

Figure 2.1 Number of participants by country



The first question in the survey is an assessment of the current political profile of the participants, digital or other, asking participants for their agreement on a scale from level 1 to 5 (no to full agreement, see **Figure 2.2**) to statements describing their political engagement and opinions. The answers show a cohort that is moderately interested in politics but unevenly engaged and often sceptical about political influence (**Figure 2.3**).

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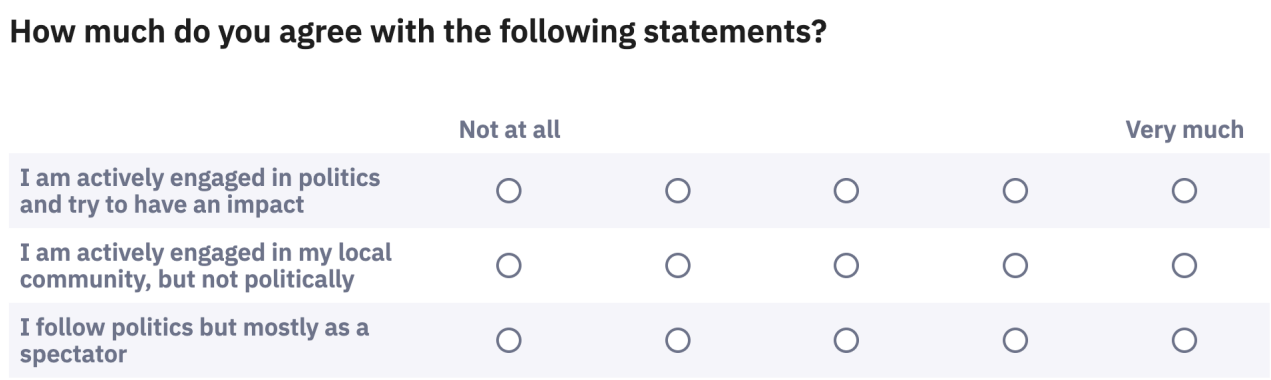
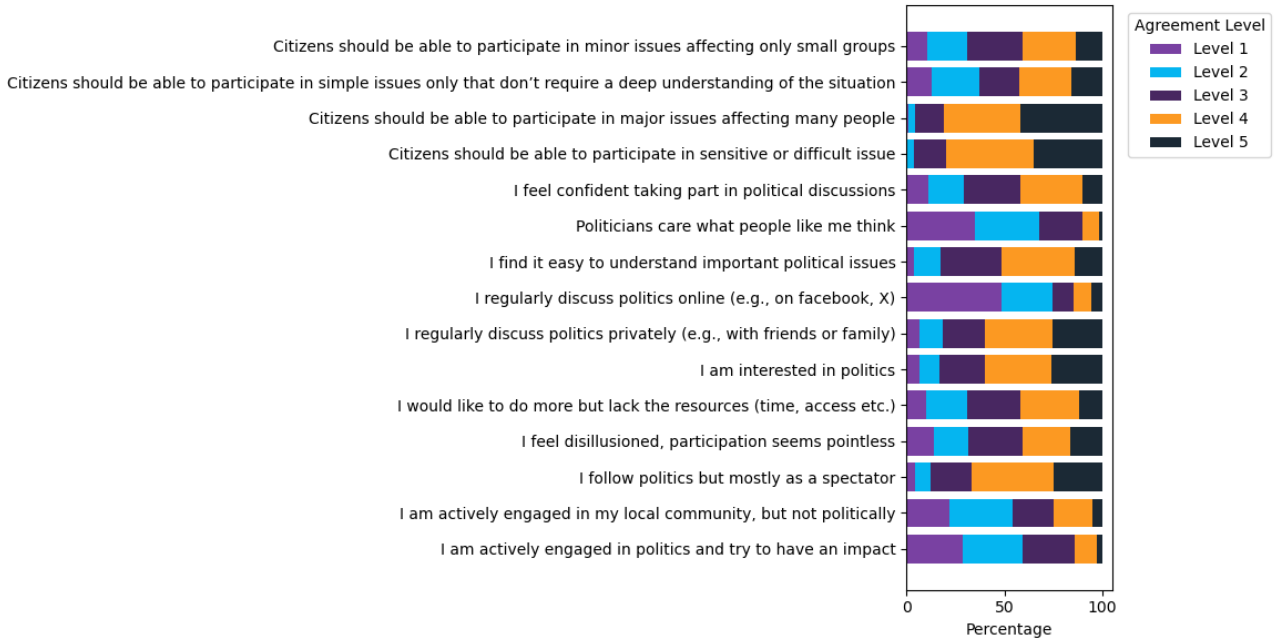
Figure 2.2 Screenshot of the survey, showing 5-point agreement scale for assessment of political profile



Agreement scores for active political engagement ("I am actively engaged in politics and try to have an impact") are low: only 14% respondents agree (levels 4 to 5, "Very much"), while 59% disagree (levels 1, "Not at all", to 2), with 27% at mid-level (3). The mean agreement (M) is 2.29 on a 5-level scale with a standard deviation (SD) of 1.08. By contrast, local, non-political engagement ("I am actively engaged in my local community, but not politically") is somewhat stronger, with 25% answers agreeing, 219 disagreeing and 83 at mid-level (M=2.53, SD=1.18). This suggests that participants lean toward community involvement but do not translate this into formal political action.

Figure 2.3 Civic profiles of study participants



A large share follows politics passively ("I follow politics but mostly as a spectator"), but disillusionment appears substantial ("I feel disillusioned, participation seems pointless"): 67% of answers cluster at higher agreement levels (M=3.74, SD=1.06), suggesting feelings of political inefficacy. On the other hand, indicators of political visibility are weak ("Politicians care what people like me think", M=2.09, SD=1.02). Participants tend to discuss politics privately with 60% at agreement levels 4-5 (M=3.61, SD=1.17) but less so online with 75% at level 1-2 (M=1.97, SD=1.21), indicating a preference for low-

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visibility, interpersonal discourse. This gap between interest and online expression may reflect concerns about polarization or toxic discourse in existing online political spaces, suggesting that new democracy apps should carefully design discussion features to encourage constructive exchange.

Large majorities support citizen involvement on major and sensitive issues: A cumulative 81%/80% agree on levels 4 to 5 that citizens should be able to participate in major/sensitive issues (M=4.17/4.10, SD=0.87/0.82). Support for citizen input on simple or minor issues is more mixed, yet still with means around 3, showing that the survey respondents value participation most when the stakes are high rather than when decisions are technical or parochial, preferring meaningful involvement in substantive decisions, not just token consultation on trivial matters.

Overall, participants are politically attentive and normatively supportive of democratic participation but rate low perceived influence, limited active engagement, and a strong spectator orientation. The combination of interest, disillusionment, and mid-level efficacy suggests a politically aware but system-sceptical public that may engage more if barriers to participation or trust issues were reduced.

2.4.2 Current digital democracy use

This section examines how, for what, and why citizens are currently (not) using digital technology for democratic participation. We investigate usage and access to digital devices and actual experience with digital democratic tools.

Use and access: what digital devices are actors currently using or have access to?

As noted above, digital divide was no core topic of the survey. Yet, to estimate participants' daily usage patterns, we included a question on device usage habits ("How often do you use the following devices privately?" for options: smartphone, tablet, computer, **Table 2.1**). Note that device usage doesn't necessarily capture the kinds of activities people perform with the device, the usage quality, skills, or meaningful access barriers, it just represents the presence and use frequency.

Access to digital devices is widespread with over 90% of participants answering they use a smartphone several times a day and 80% answering the same for a computer. Looking at common digital divide characteristics, we see that most known barriers are present in the cohort, though in very small amounts.

Table 2.1 Device uses in total numbers

	Smartphone	Tablet	Computer
Never or rarely	5	166	4
Several times a year	3	37	5
Several times a month	7	41	18
Several times a week	12	83	54
Several times a day	379	79	325

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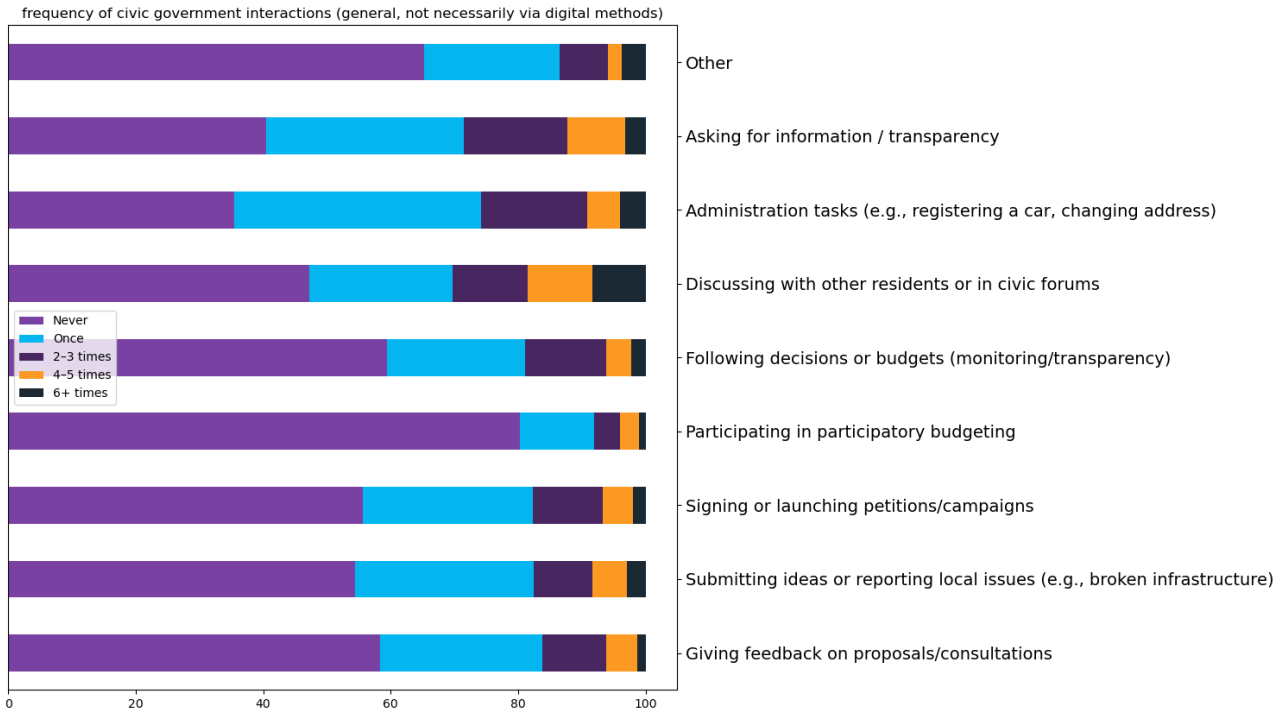
There is a modest but consistent positive correlation between income and device usage (r= 0.58/ 0.50/0.44, pairwise Pearson correlation for smartphone/tablet/computer) and a small generational digital behaviour difference where device usage decreases slightly with age, except for tablets (r=-0.17/0.30/-0.04). The patterns align with known digital inequality research, suggesting a nuanced digital divide exists in the sample, though it is very subtle. The prolific-recruited participants are digital platform users who can navigate online surveys and are thus digitally privileged to begin with: device usage is near-maximum across all groups. Therefore, while we cannot make any conclusions on the quality or content of their usage, we can assume widespread, though not total readiness for a digital democracy app on the device access level.

Tool experience: to what extent and for what purposes are citizens currently engaged with digital platforms for democratic work?

We assessed how frequently citizens interacted with their municipality across various democratic and administrative functions ("In the past 12 months, how often did you interact with your municipality or other public bodies in the following tasks?", **Figure 2.4**). Most participants engage only occasionally with their municipality or public authorities. The most common activities are 'Discussing with other residents or in civic forums', 'Asking for information / transparency' and 'Administration tasks (e.g., registering a car, changing address)' which all occurred at least once for more than half of the participants. Least common are 'Participating in participatory budgeting'(80% never), 'Following decisions or budgets (monitoring/transparency)' (60% never) and 'Giving feedback on proposals/consultations' (58% never).

Figure 2.4 Frequency of civic government interactions



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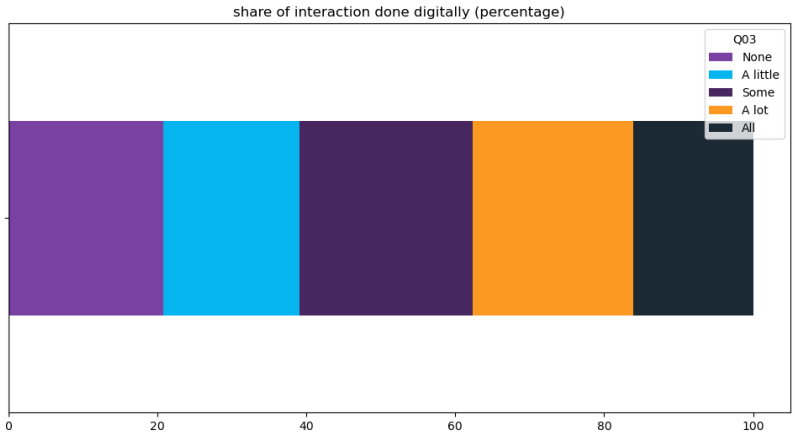
Frequent "never" responses suggest limited civic engagement beyond basic administrative or feedback tasks. Only a small minority reported more than six interactions per year in all categories except for discussion, at 8%, indicating that structured, repeated engagement remains rare. Whether this is due to a lack of need, motivation or possibility, however, is not answered by these numbers. In any case, the pattern of interaction between citizens and governments is mostly transactional rather than participatory. Citizens mainly interact when required by bureaucracy or when directly affected by local issues, not as part of ongoing participation. This suggests a large, untapped potential for participatory democracy tools if barriers to access and awareness can be reduced and motivation can be raised.

A follow-up question examined what proportion of these interactions was already digital ("How much of this interaction happened online or via digital tools?", **Figure 2.5**), suggesting a moderate but growing adoption of digital engagement with about 61% of participants using digital tools for at least some of their contacts with government bodies, and 16% for all of them. Still, about a fifth of participants said that none of this interaction happened online or via digital tools.

Figure 2.5 Civic interaction done digitally



We selected ten digital democracy functionalities present in existing tools and frameworks and asked participants whether they had used them in the past, to assess current adoption (**Figure 2.6**). The most widely used features represent low-barrier entry points into digital democracy participation: Citizens primarily use digital platforms for low-threshold civic action (signing petitions, reporting issues) rather than deep participatory governance (co-creation, budgeting), indicating that current digital democracy remains largely consultative rather than collaborative.

These results suggest a desire for transparency and efficacy, not yet a demand for deliberation or decision-making power. However, the results do not show if this is an underlying motivation or a consequence of the limited experiences citizens have made with such features so far. Low adoption rates may also reflect limited availability of digital opportunities rather than user reluctance, suggesting that institutional constraints limit uptake more than citizen interest.

Current platforms succeed at light-touch engagement but fail to cultivate deeper democratic participation at scale. The almost 50% who sign petitions versus the less than 10% who co-create with government indicates an engagement conversion failure.

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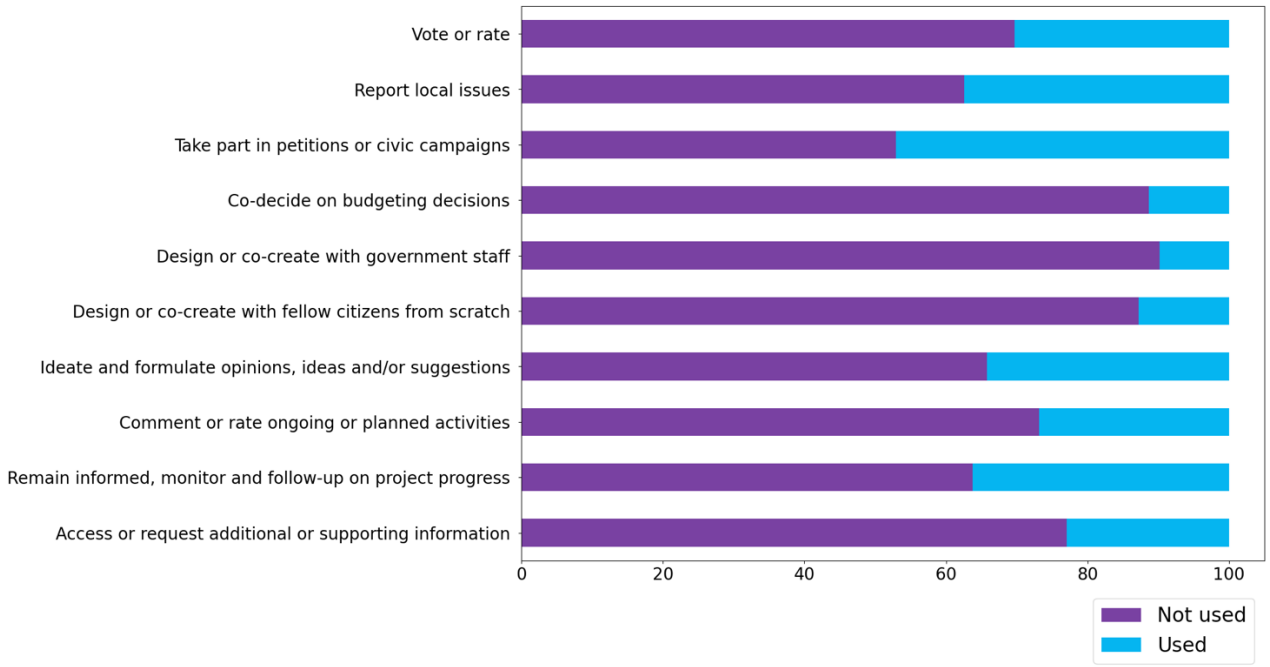
Figure 2.6 Previous usage of digital democracy functionalities



Features with little user activity have been used more than those which require sustained engagement, collaboration skills, and time investment that most citizens cannot or will not commit. In particular, active information requests rank lower than passive monitoring, suggesting citizens prefer information pushed to them rather than having to actively seek it out. This has important implications for platform design. However, those who do participate in co-creation represent a valuable "power user" segment for platforms to nurture.

Based on feature usage, **Figure 2.7** reveals **distinct engagement segments** among participants:

- **Non-Users** (0 features, more than 25% of all participants): Despite engaging with municipalities through other channels, this segment hasn't adopted digital democracy features at all, signalling, a digital divide, lack of opportunity, trust issues, or preference for traditional channels.
- **Light to Moderate Users** (1-4 features, more than 50%): Single-feature users typically engage through the highest-adoption mechanisms like petitions or issue reporting. These are entry-level participants who might be cultivated into deeper engagement. The middle segment shows selective engagement, choosing specific features that align with their interests and time availability. They represent the committed casual user who participates regularly but not comprehensively.
- **Experienced Users** (5+ features, about 20%): Representing the most engaged segment, these citizens use digital democracy tools across multiple functions. While smaller in absolute numbers, they drive platform value through sustained, diverse engagement.

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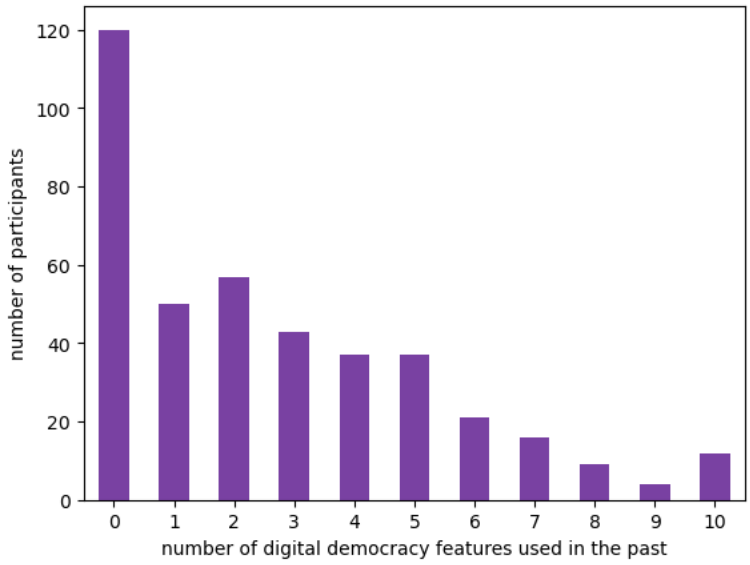
Figure 2.7 Previous usage of digital democracy functionalities



Qualitative open-text responses to follow-up questions on what worked well when using the functionalities and what did not or what was missing provide additional context on current tool usage and desired improvements ("When you used these tools, what worked well and which features did you most appreciate?", "What did not work for you and which features would you drop or change?", "What did you miss and would like to add to make the technology more valuable or useful?"). The three groups were complementary, in that the aspects that users appreciated often were the ones they missed or disliked when they were not done well.

- **Ease of use and accessibility**: 114 comments positively mention how easy, intuitive, or accessible the digital democracy tools were, including aspects of Design, Information Structure, Visualizations (e.g., "i appreciated the fact that i could track statistics visually, with graphics of different sorts, which made it really easy to interpret and to analyze"), and the ability to quickly find or interpret information with minimal bureaucracy (e.g., "Vlotte voortgang"). Many mention that the tools required little effort, had straightforward processes, and were inclusive for all users. On the other hand, 78 negative comments focus on technical problems including outdated interfaces, complex navigation (e.g., "too difficult to use, some required more than basic use of technology"), slow loading times, mobile unfriendliness, complicated login processes, language issues (e.g., "Complicated language"), system crashes, and poor website design. Users highlight barriers that make tools difficult or frustrating to use and demand (38 comments on what is missing) platforms which are easy to use for everyone, especially elderly and disabled users, beginners, and those with limited digital skills. Users request simpler interfaces, clearer instructions, better UX design, faster loading times, mobile optimization, language options, and features that don't assume high digital literacy: "Access should be simple and clear for everyone, even for beginners and those who have difficulty with the system. In short, everything should be simplified."
- **Transparency and trust** play a major role for many users. 67 positive and 42 negative comments highlight the importance of receiving feedback and being able to track the progress

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of issues or projects (e.g., "project updates and impact tracking helped build my trust and kept me engaged", "The reason why people would sign a petition is to be heard and make a change, so we want to know what happened afterwards"). Users valued clear explanations, updates on decisions, seeing budgets and outcomes, and feeling that their input made a difference, while in turn they would be annoyed by a lack of follow-up ("The blackhole effect"). 45 comments on what was missing emphasized that users want to see concrete impact (e.g., "To have constant feedback as to the progress of whatever you asked/ suggested which essentially means that my voice was heard").

- Effects on the community and **direct contact between citizens and governments** are highly appreciated or often wished for (60 positive comments, 28 wishes). Users liked being able to contribute ideas, discuss with others, and feel that their voice mattered, they want better channels for direct communication with decision-makers and local officials (e.g., "I think that when I am expressing an opinion on a message board it would help to talk directly to someone in a position of power"), forums or discussion spaces (e.g., "a way to discuss with other citizens"), real-time chat or messaging features, human (not AI) support, and opportunities for collaborative dialogue (e.g., ". I truly felt that I could make a difference and that one of my initiatives could be shared with my community in an informal way""). The emphasis is on reducing distance between citizens and politicians and enabling meaningful conversation.
- A strong concern (50 negative comments) is **ineffectiveness or lack of actual results** of an app. Users are frustrated with tools that feel symbolic rather than impactful (e.g., "is too vague and my reports were ignored, felt useless"), including petitions that go nowhere (e.g., "The only one I have used is the signing petitions, but I think they don't go anywhere with that, never seen any of those petitions make it happen"), decisions that ignore citizen input, overly complex budget participation for non-experts, and general scepticism about whether digital democracy creates meaningful change (e.g., "in the end, money rules over everything").
- A small group (12 negative and 16 wish comments) is also concerned about **privacy, security and trust in information**. These participants emphasize the need for identity verification to prevent bots and fake accounts (e.g., "Identity verification for all users"), but also the opposite, asking for full anonymity (e.g., "complete anonymity"), stronger encryption and data protection, fact-checking mechanisms to combat misinformation (e.g., "flag misinformation in petitions or proposals to ensure the information being shared is accurate and reliable"), secure authentication processes, proof that votes/data cannot be manipulated (e.g., "I am aware that online results have the potential to be manipulated or hacked"), and measures to ensure platform integrity and user privacy.

Specific features that worked well and were appreciated centred around reporting local issues (36 comments, e.g., "There was a water leak near to where I live and our town developed an app that we can take a picture, and someone goes there and fixes the problem when we submit it. In 24h it was fixed so it was a pretty good experience"), petitions and campaigns (33 comments, e.g., "Taking part in petitions worked well because you can take your time to think about the petition content before you sign them. I also appreciate if there is a text that gives me further information on the topic"), and voting, surveys or co-deciding on budgeting (28 comments, e.g., "I liked the most the surveys/polls

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because they would show how and what people think about an upcoming project and there were times where these polls affected the outcome of a project").

Wishes for specific features (60 comments) included centralized platforms combining all services, voting apps (e.g., "all elections and petitions should be bundled in one app"), budget transparency tools, petition tracking, AI assistants, interactive maps (e.g., "Interactive map to see projects near me and maybe alerts when something I contributed to moves forward"), notification systems customized to user interests, direct democracy features (up/down voting), real-time updates, easier bureaucracy/administrative procedures, or live-streaming of meetings.

2.4.3 Democratic functions and potential

This section examines what democratic functions or processes citizens believe technology can or should meaningfully support. We explore current perceived deficits in democracy, desired functionalities and outcomes, and assess perceived digital tool efficacy.

Current deficits: what are key pain points or areas of friction in the current citizen-government relationships that digital democracy can address?

In an initial free-text question, we asked participants about their biggest current issue in their political interaction ("If a new digital app could solve one major problem in how you interact with your local, regional or national government what would that problem be?"), aiming to identify gaps and frustrations in existing democratic processes from the citizen perspective, and to understand which aspects of the relationship they consider most in need of technological intervention. Although optional, the question received a strong response rate of 396 comments, indicating that respondents were highly engaged with this topic and had clear opinions about deficits in their relationship with government. The responses varied considerably in length and detail, from brief single-word answers to comprehensive multi-sentence explanations.

Many of these comments mirror the same complaints and wishes as described in the previous subchapter. Participation features like secure digital voting, petitions, and structured input (e.g., up/down votes) appear in around 50 comments, but with caveats: moderation and anti-toxicity filters are needed, and people want assurance that participation leads to real decisions and impact. A strong thread of about 230 comments calls for direct communication with accountable officials, better routing to the right department, and faster acknowledgments and human support when automation is not enough. Ca. 160 comments also ask for clearer language, status tracking, and budget transparency, alongside simple ways to report local issues (with photos/video) and see what happens next.

In addition, around 70 comments ask for a single, central, trustworthy way to interact with government (e.g., 'Centralize all interactions with a single app'), consolidating all services into one secure, user-friendly app or portal (e.g., 'An app that puts everything in one place, explains it clearly, and guides me step by step would make things much easier'). The biggest frustrations are fragmentation across many websites, long delays, 'black box' processes, and not knowing who is responsible or whether input was read.

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The dominance of information-flow themes suggests that even before addressing more complex democratic functions, there is substantial room for improvement in basic government-citizen communication and transparency.

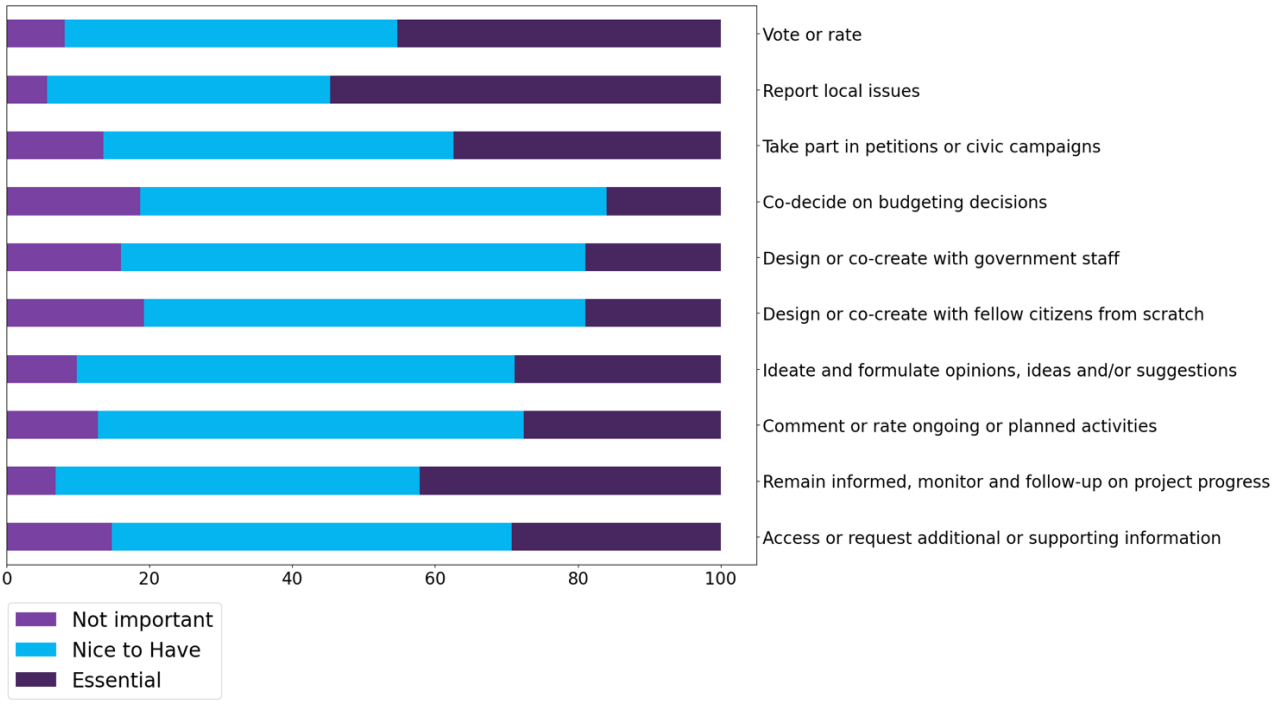
A few participants (fewer than ten comments) also used this opportunity to express grievances and distrust beyond the scope of a digital app, revealing a deep-rooted dissatisfaction with politics or their perceived surroundings (e.g., "Force the elected president and corrupt cabinet to resign and be tried in courts of law for their crimes", "find a better job", "i think the big problem is the security in our area", or "Migration").

Further pressure points can also be found when evaluating answers on functionality or outcome importances, as can be seen below.

Functionality: what specific features or functionalities do actors expect or need to make technology valuable and useful for them?

The survey did not only ask for past usage of digital democracy functionalities, but also how important it would be to have them available in a potential app on a 3-point scale spanning from "Not important" over "Nice to have" to "Essential" (**Figure 2.8**). The results reveal substantial gaps between citizen demand and current availability/usage. The most valued features are reporting local issues with 55% of participants rating it essential (M= 2.49 on a 3-point scale, SD=0.60), voting or rating for representatives or projects with 45% essential (M=2.37, SD=0.63), and remaining informed and following up on progress with 42% essential (M=2.35, SD=0.60). These top-rated features emphasize direct communication, transparency of outcomes, and pro-active citizen input, demonstrating clear preference for concrete, action-oriented functionalities.

Figure 2.8 Importance of digital democracy functionalities



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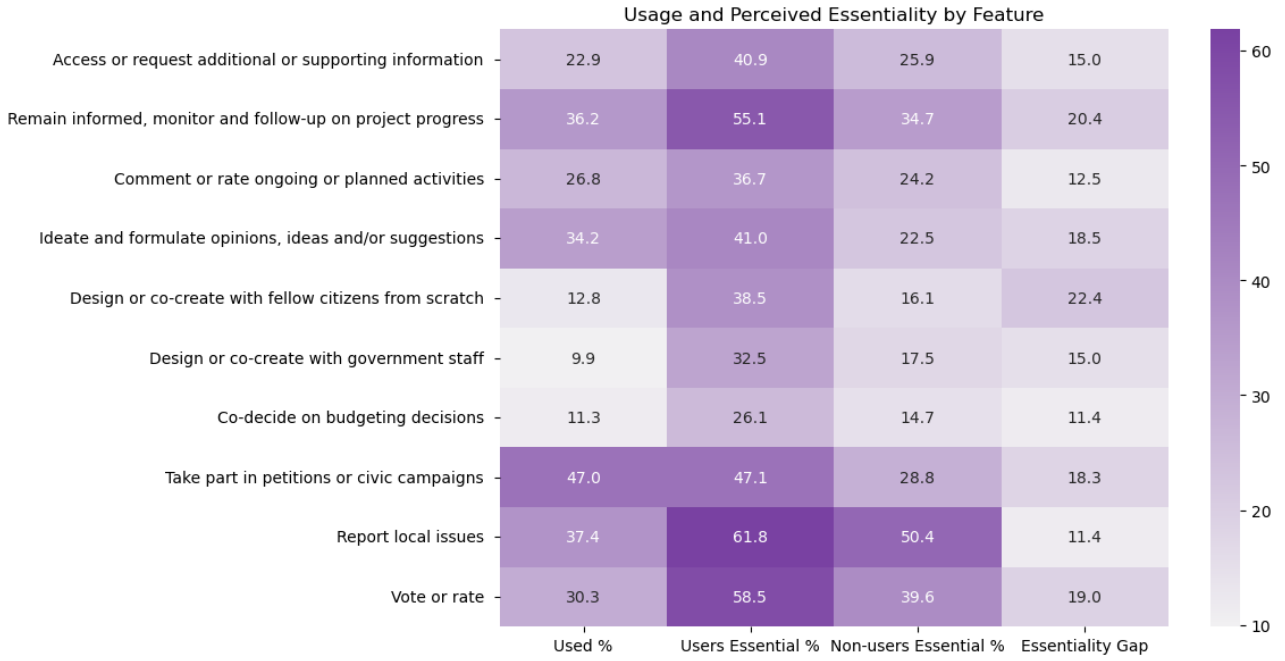
Features that involve deeper co-creation processes, e.g., co-deciding on budgeting (M=1.97, SD= 0.59, 16% essential), designing initiatives bottom-up with fellow citizens (M=2, SD=0.62, 19% essential), co-creating with government staff (M=2.03, SD=0.6, 19% essential), are still rated positively, but typically slightly lower than the more immediate functions above. This does not indicate rejection of co-creation, but suggests that citizens first want reliable, straightforward tools for problem reporting, opinion expression, and transparent follow-up before engaging in more intensive collaborative processes. Also, such activities require a lot more active involvement from citizens for which they might not have the resources available.

Respondents with low, mixed, and high current levels of digital interaction with public bodies all prioritise essentially the same feature set. High-digital users who have previously used more features tend to assign slightly higher importance scores overall with r between 0.02 and 0.15 for all functionalities except for reporting local issues (r=-0.12) and co-deciding on budgets (r=-0.01). But overall, the ranking of features hardly changes. This suggests that a core feature bundle centred on issue reporting, voting or rating, feedback provision, and progress monitoring is broadly relevant, and does not need to differ fundamentally across user segments or municipalities.

Figure 2.9 Functionality importance by users and non-users



Features rated as most important show adoption rates of about 30-40%, suggesting structural barriers beyond individual preference, likely related to institutional readiness, tool availability, or digital literacy. There is a connection between having used a feature and rating it as important (**Figure 2.9**), suggesting that experience with digital democracy tools increases appreciation of their value. This implies that once citizens try these tools, they recognise their utility. The challenge is getting initial adoption and ensuring positive first experiences.

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Desired outcomes of digital democracy: what are the primary goals and outcomes to achieve through increased digital civic engagement?

Beyond concrete features, respondents were asked how important various outcomes of a digital participation app would be to them, on a 5-point scale ("How important are the following outcomes of a digital participation app to you?", **Table 2.2**). The results reveal deep dissatisfaction with the status quo, with all outcomes' importance rated above the midpoint and most rated as serious concerns. The most severe were transparency, trust and satisfaction in public services.

Table 2.2 Outcomes by importance

Outcome item	Mean	SD	Min	Max
Transparency *(e.g., inform about ongoing projects, understand how policy is being made)*	4.53	0.75	1.0	5.0
Trust *(e.g., in public entities, policymakers and/or democratic institutions)*	4.50	0.71	1.0	5.0
Satisfying public amenities or services *(e.g., faster, simpler processes, less paperwork, more convenience)*	4.40	0.71	1.0	5.0
Real impact on decisions *(e.g., citizen inputs and needs are understood, considered and translated to policy)*	4.39	0.78	1.0	5.0
Accountability *(e.g., see who decides about what, how and whose input is used)*	4.37	0.81	1.0	5.0
Fairness and inclusion *(e.g., political processes accessible to all, fair influence)*	4.34	0.81	1.0	5.0
Efficiency and cost-effectiveness *(e.g., focus limit public resources on what is important)*	4.27	0.84	1.0	5.0
Good reputation as a democratic entity *(e.g., through accessible, trustworthy, and inclusive public organisation)*	4.24	0.75	1.0	5.0
Community building *(e.g., citizens connect on local issues, come together and collaborate)*	3.91	0.92	1.0	5.0
Novel and innovative solutions *(e.g., by collecting and using citizens' knowledge, skills and resources)*	3.85	0.94	1.0	5.0

Legend. 'SD' = standard deviation; 'Min' and 'Max' respectively denote the lowest and highest recorded scores per question item among respondents with scale items ranging from '1 = not important' to '5 = very important'.

Additional outcomes, such as efficiency and cost-effectiveness, a strong democratic reputation of the municipality, community building, and novel or innovative solutions, are also valued, though usually to a lesser extent than the cluster of transparency, trust, services, impact, and fairness. Citizens are less interested in technological novelty for its own sake and more concerned with whether digital tools tangibly improve the quality, fairness, and responsiveness of governance and service delivery.

The survey allowed participants to add their own expected outcomes in a free-text comment ("Is there anything you would consider an important outcome of a digital democracy app?"). Many comments reiterate the importance of outcomes from the list above, especially aspects of transparency, inclusion and trust, as also seen in other free-text questions, often in the same entry, e.g., "Citizens should clearly see how their input influenced decisions, even if the outcome is not what they suggested. The app must work well for people with different digital skills or disabilities." Often, participants suggest specific mechanisms to achieve these outcomes, such as public case IDs for project and responsible persons, visualisation of money flows or the app serving as a "collective memory".

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The comments reinforce that users want visible, traceable mechanisms for transparency, feedback, and impact, such as clear dashboards, tracking, or direct notifications for topics of interest. There is also a demand for tools that actively educate citizens, not only connect them, and for tools that make democratic processes understandable and accessible to all. Inclusion is not just about fairness but about practical technical accessibility, intuitive design, and even incentives for participation ("maybe something as simple as discount coupons for local shops or priority tickets for local shows for users of the app").

One comment mentions the use of citizen satisfaction data ("that is, a table or a direct percentage of satisfaction and dissatisfaction") as a measure of success. This ties into another follow-up question in the survey asking for suggestions on how to measure outcome achievement ("How would you know if the app was successful?"). The majority of answers suggest that users rely more on a felt sense of success than on measurable numbers to estimate the impact of a digital democracy app. Citizens will judge whether their expectations are fulfilled by recognising visible, tangible changes in their immediate environment (e.g., "meaningful change visible on the streets and not just a town hall talking shop"), by experiencing traceable issue lifecycles with feedback and proof (e.g., "If processes and paperwork got accessible enough that physical services stopped being a mess all the time, then I would know it worked"), and by observing a healthier political climate with less visible frustration (e.g., "If people used their political beliefs to attack each other less, and the information from the app served as a way to come to an understanding together and do things right for everyone").

When citizens consider KPIs, they suggest metrics such as adoption rates, response times, implementation ratios, satisfaction surveys, and media coverage. They also suggest making these metrics visible within the app itself, e.g., through dashboards, statistics, or regular reports, not just for internal evaluation.

Broad and inclusive adoption plays a particular role in impact estimation. Success is defined not only by the number of users but also by who uses the app: older, disabled, digitally shy, politically disengaged (e.g., 'if older or disabled people … used the app consistently, it would be a great indicator of its success'). Inclusion is thus about fair influence on the one hand and observable diffusion into hard-to-reach groups on the other. The app would be successful if it became part of everyone's daily life.

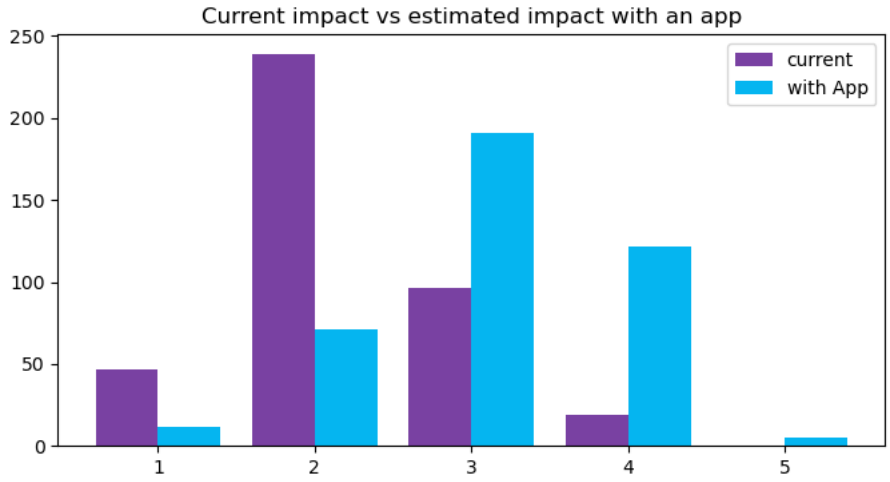
Efficacy of tools or tool use: (how) can digital democracy lead to meaningful outcomes or change and how much does that matter to participants?

To gauge how citizens see the role of participation in decision-making today and in a potential future with a democracy app, the survey asked respondents to rate the current impact of citizen input on political decisions in their municipality and the expected impact if a new municipal app were introduced ("Right now, how much impact does citizen input have on political decisions in your municipality?" and "If a new digital app launched by your municipality were available, how much impact do you think citizen input via that app would have?", **Figure 2.10**).

On a five-point scale from low to high impact, perceived current impact is modest (M=2.22, SD= 0.70), with most respondents selecting low to medium values and none choosing the highest category. In contrast, expected impact via a new digital app is clearly higher (M=3.09, SD=0.80), on average, respondents anticipate almost one scale point more influence if the app is available and used (M=0.88, SD=0.84), though the highest amount of impact is still expected by only a small minority. This indicates that citizens do not see digital participation as a marginal add-on, but as a potential lever to improve

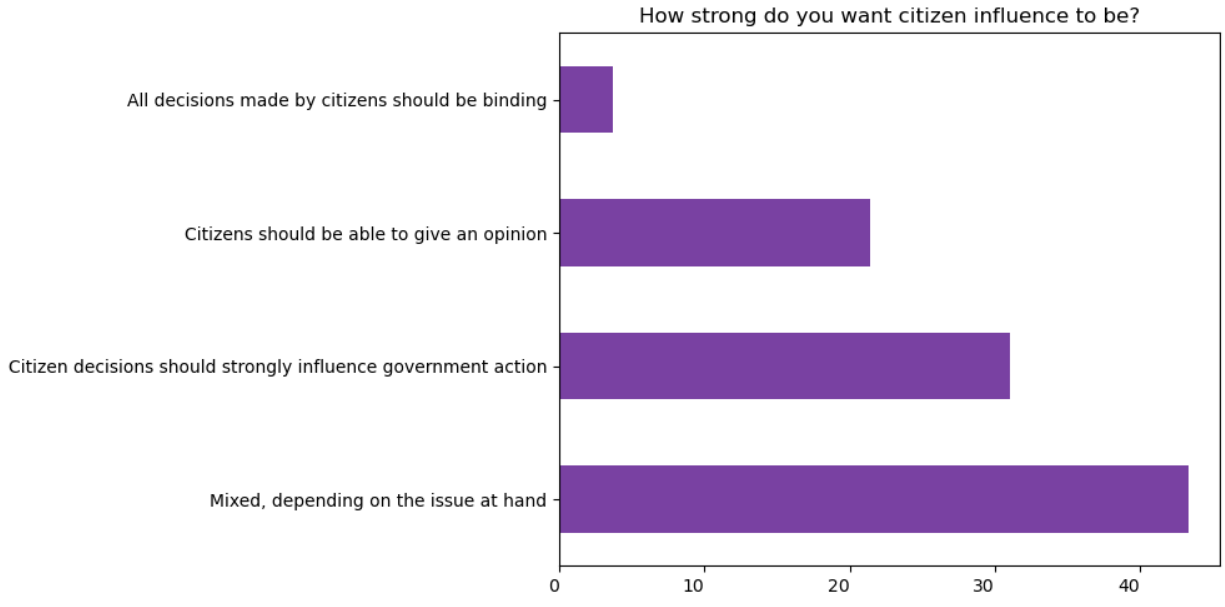
the responsiveness of local decision-making, provided the app is well designed and taken seriously by authorities. Almost 69% of participants think that citizen impact can increase through a new digital app while only 3% think that citizen impact could decrease, the rest does not expect any change.

Figure 2.10 Citizen input impact now and with an app



Preferences regarding how strong citizen influence should be are nuanced (**Figure 2.11**). The largest group of respondents (43%) prefer a flexible model in which the strength of citizen influence depends on the issue at hand. The second-largest group (31%) supports the idea that citizen decisions should strongly influence government action, while a smaller group (21%) is satisfied with a consultative role in which citizens primarily give opinions. Only a small minority (4%) call for all decisions to be binding and made by citizens. This pattern suggests that many citizens are aware of the complexity of public decision-making and favour shared responsibility rather than complete direct control yet wish to be heard in the decision-making process.

Figure 2.11 Preferred strength of citizen input



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A small number of free-text comments show a more nuanced view on citizen impact and capability explaining their selection of the available "Other" option, e.g.: "Power to the people, ideally. But people tend to get stupid in numbers as well" or "Although they may have to complain about something, they should not just protest!" (translated from Spanish).

The survey also explicitly asked what participants saw as the biggest and most important potential of digital tools for democracy. According to the answers, the main potential is to empower citizens for stronger participation: more voices heard, more people involved, more meaningful participation and influence over decisions ("To give everyone a chance to make a change"). Some longer, reflective answers explicitly frame digital tools as a way to turn democracy from something occasional and distant into something continuous, everyday, and citizen-driven. This is achieved by better information (e.g., "a resource where people could find all of the information they need from Government sources rather than the system we have now, where information is scattered around dozens of sites"), communication (e.g., "Connect citizens to politicians"), and education (e.g., "Making people learn about politics and democracy"), as well as more convenience and efficiency in participation (e.g., "can be used anywhere and anytime saving you a lot of time and even money compared to in person services").

2.4.4 Interaction design for optimal participation

This section examines interaction with digital technology must (not) be designed to be efficient and rewarding for citizens. We look at desired participation modalities and feedback expectations and explore perceived risks and trust in digital tools.

Kinds of interaction: how and to what extent would participants like to interact with technology?

Regarding the preferred mode of giving input ("Which way would you prefer to give input on local issues?" with answer options: In person / Mostly in person / Mix / Mostly online / Online only / Not at all, **Figure 2.12**), the majority of respondents favour either mostly online (45%) or a hybrid mix of online and in-person formats (27%). A smaller, but still significant, group prefers online only (21%), while mostly in person (4%) and in person only (2%) options are chosen by fewer respondents. Very few respondents (<1%) indicate that they do not want to participate at all. Thus, an app-centred participation strategy is broadly acceptable, provided it does not entirely replace offline mechanisms, especially for those who remain more comfortable with face-to-face engagement.

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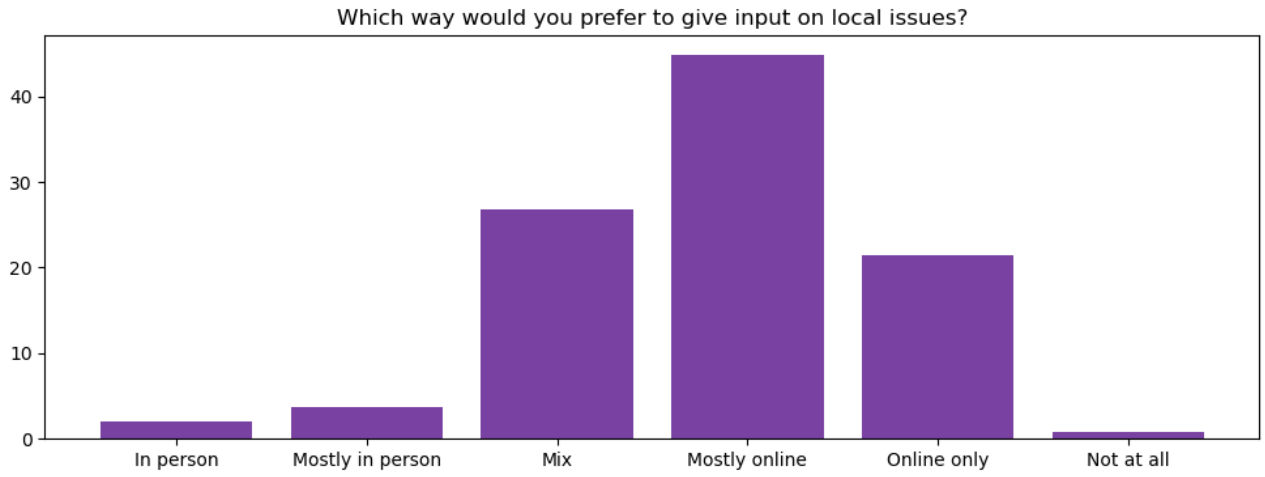
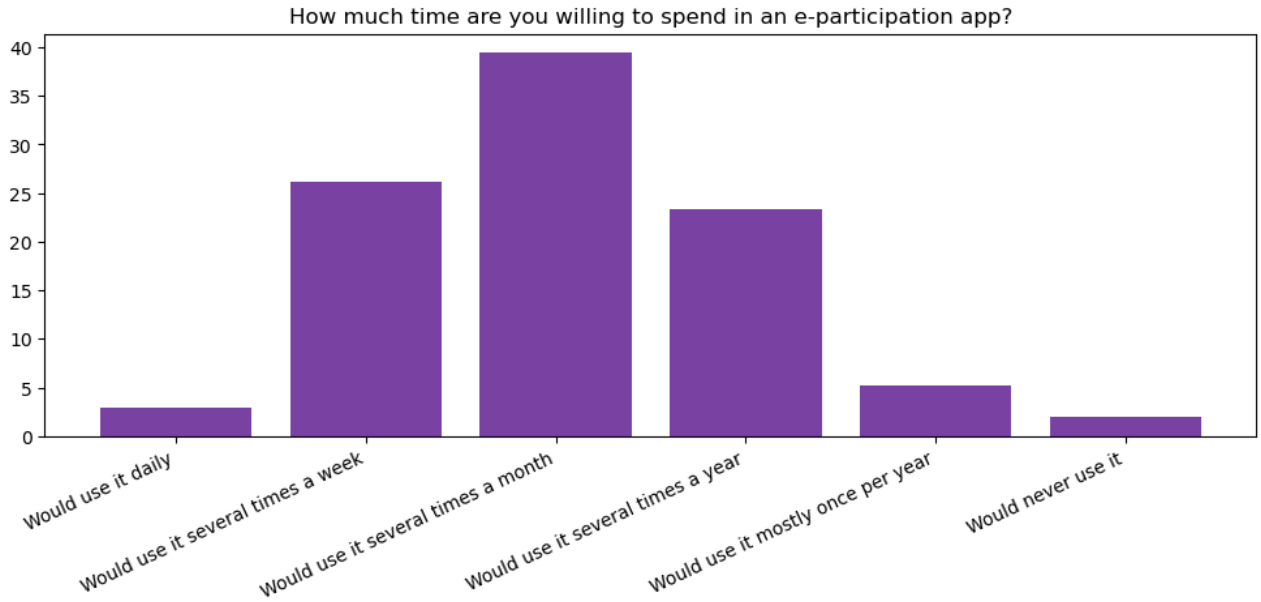
Figure 2.12 Interaction mode online/offline



In terms of how often they would realistically use an e-participation app, respondents cluster around moderate frequencies (**Figure 2.13**). Many state that they could imagine using such an app several times a month or several times a week (39% and 26%, respectively). Some would engage less often, for instance, several times a year (23%), and smaller groups sit at the extremes of daily use (3%) or almost never (7%). These responses suggest that an app can become a regular part of civic life but should be designed for episodic engagement around concrete issues rather than constant, high-frequency use for everyone. Free text comments for the "Other" option agree that frequency would depend on the app's use cases and that participants would use it as needed.

Figure 2.13 Time resources willing to spend



Feedback expectations are particularly clear ("What kind of feedback would you wish for your participation?", with multiple selections possible per answer, **Figure 2.14**). Almost nobody wants to receive no feedback about their participation (2%). Instead, citizens strongly prefer full transparency

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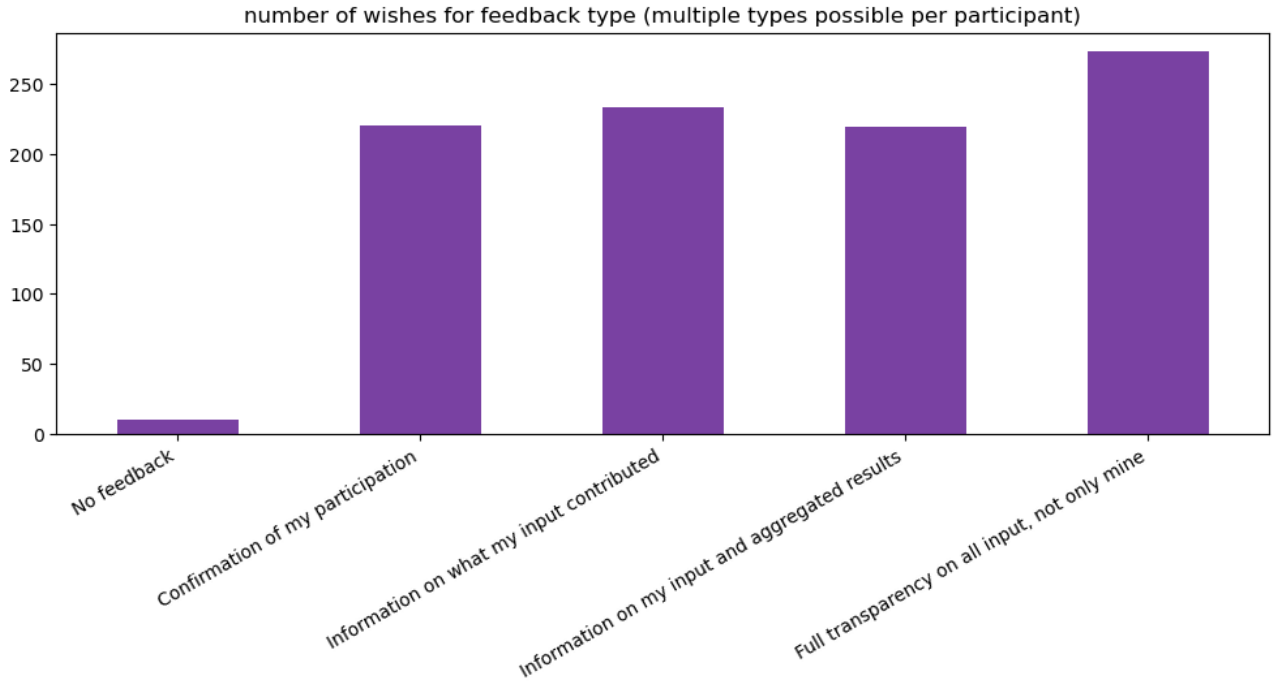
about all input (not only their own), 67%, and information about what their input contributed to, i.e. how it influenced thinking or decisions, 57%. At minimum, confirmation of participation and access to aggregated results, both selected by 54% of participants.

Figure 2.14 What type of feedback is preferred



In other words, citizens want to see both the micro-level outcome (that their contribution was registered and considered) and the macro-level picture (what the community as a whole said and how that shaped decisions). These expectations tie directly back to the high importance attached to transparency, trust, and real impact, and they strongly argue against "black box" participation processes, especially with parts of the population already feeling unheard.

Disinformation, exclusion, interference: how to assure that digital democratic processes are truthful and inclusive?

While the preceding findings show substantial openness to digital democracy tools, respondents also identify serious risks associated with digital participation platforms. The survey provided a question in which possible risks of a digital democracy app were listed and asked participants to rate these risks by seriousness on a 5-point scale ("How serious are the following risks in using digital platforms for democratic participation to you personally?", **Table 2.3**). Among the risks presented in the survey, the most serious are governments ignoring results, meaning that participation is formally collected but substantively disregarded, spread of misinformation and fake news in the context of digital participation, and biased or manipulated results, for example through non-transparent algorithms or unequal mobilisation.

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Table 2.3 Perceived importance of digital democracy risks, full overview

Risks	Mean	SD	Min	Max
Governments ignoring results	4.28	0.89	1.0	5.0
Spread of misinformation or fake news	4.14	1.10	1.0	5.0
Biased or manipulated results	4.10	1.02	1.0	5.0
Hacking or data leaks	4.06	1.07	1.0	5.0
Excluding some groups (e.g., low connectivity, disabilities)	3.83	1.13	1.0	5.0
No control over personal data (e.g., can't delete or correct it)	3.8	1.20	1.0	5.0
Harassment or incivility in discussions	3.74	1.14	1.0	5.0
It will not lead to real change	3.67	1.10	1.0	5.0
Too much personal data collected	3.62	1.24	1.0	5.0
Minority voices excluded	3.56	1.24	1.0	5.0
Participation dominated by organized minorities	3.56	1.2	1.0	5.0
Citizen scoring systems	3.21	1.22	1.0	5.0

Legend. 'SD' = standard deviation; 'Min' and 'Max' respectively denote the lowest and highest recorded scores per question item among respondents with scale items ranging from '1 = not serious' to '5 = very serious'.

Other risks considered clearly above the midpoint in seriousness include the exclusion of certain groups (due to connectivity, disability, or other barriers), lack of control over personal data, harassment and incivility in discussions, and the potential marginalisation of minority voices. Overall, respondents are acutely aware that digital platforms can amplify both democratic and anti-democratic dynamics. Those most familiar with digital tools appear to be most sensitive to their potential downsides. In addition, there was a free-text question on further risks that the provided list may not have covered ("Can you see any other risk?"), as well as, at the end of the survey, a concluding question asking respondents for the biggest and most important danger of digital tools for democracy from their point of view.

Manipulation, misinformation and security/privacy risks are by far the largest group in these comments, with worries about the potential for digital democracy tools to be manipulated, be it by governments, platform owners, organized minorities, bots, or foreign actors (e.g., "Takeover by foreign groups, e.g. U.S. funded political groups operating with fake identities and paid posting"). This also includes the spread of misinformation, fake news, algorithmic bias, and astroturfing, i.e., hiding the actual source of a message so as to give it more credibility. Some focus on technical hacking (e.g., "I believe it is the security-privacy issues which arise (for example hacking and 'stealing' user's personal data)"), others on social/algorithmic manipulation (e.g., "algorithmic opacity, where the platform's algorithms prioritize certain voices, issues, or content without transparency").

Social factors range second, with inequality and exclusion on the one side and harassment and incivility on the other. A substantial group highlights risks of exclusion, be it those with low digital skills, poor connectivity, disabilities, or the elderly who may be left out, deepening existing inequalities (e.g., "excluding people without internet or digital skills"). Some mention language barriers, digital literacy, and the risk that only a vocal or digitally-savvy minority participates. Harassment, hate speech, bullying, and polarization are additional concerns (e.g., "could probably lead to hatred between the citizens if they can see each other's names associated to their opinions and/or they may start suspecting who is behind a nickname/pseudonym and engage in harmful behaviour"), even up to radicalization and extremism (e.g., "Engagement of the public could rise to promote radicalization of the people towards extreme right or left").

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Among risks not covered by the list above, the most prominent are cost and resource allocation ("High investment costs (tax money) for an unknown outcome") and overload or fatigue ("Too many people asking too many questions of matters already discussed or solved... bogging the system down"). A recurring theme is scepticism about whether digital tools will have real impact. This is less of an additional risk of digital tool usage but might still lead to the failure of an app. Fears include governments ignoring input, tools being used as window-dressing, and, in the worst case, being used for other motives (e.g., "Create a false Hope that something IS going to change but the only fact would be to collect data"), or citizen participation being performative rather than meaningful (e.g., "greatest risk is that digital democracy becomes a façade rather than genuine empowerment").

Trust, legitimacy and representation: how much do participants trust digital platforms to fairly represent citizen voices?

Trust in potential operators of a democracy app mirrors risk perceptions. Asked how much they would trust certain digital democracy app operators on a five-point scale from no to full trust, respondents, on average, express the greatest trust in local municipalities as operators: 83% would "rather trust" with trust levels of 3 or higher (**Table 2.4**). They are followed closely by citizens themselves as operators (81%), likely viewed similarly to the open-source community (80%) and non-profit organisations (77%). European-level public institutions (75%) and national governments (68%) are also trusted by many, though distrusted by others. In contrast, international private companies are trusted the least (40%) as potential operators of a democratic participation platform. These patterns suggest that governance and ownership structures that are clearly public or community-oriented, and that can credibly demonstrate independence from purely commercial interests, will be more acceptable to citizens.

Table 2.4 Trust in potential operators of an app

Operator	Mean	SD	Min	Max
A local municipality	3.35	0.97	1.0	5.0
A Non-profit	3.33	1.16	1.0	5.0
The Open-Source community	3.32	1.08	1.0	5.0
European government	3.3	1.22	1.0	5.0
Citizens	3.29	1.01	1.0	5.0
National government	3.01	1.15	1.0	5.0
A local Small or Medium-sized Enterprise	2.84	0.89	1.0	5.0
An international private company	2.28	1.05	1.0	5.0

Legend. 'SD' = standard deviation; 'Min' and 'Max' respectively denote the lowest and highest recorded scores per question item among respondents with scale items ranging from '1 = no trust' to '5 = a lot of trust'

Regarding the users of a digital democracy app, the survey assessed if participants prefer to be identifiable or not, and if they want others to be (**Figure 2.15**). Using real names or nicknames are regarded similarly preferable with most participants wanting to use a real name or a nickname for themselves and for others equally (36% and 35% respectively). About 20% of users wish for full anonymity for both themselves and others. Where there are different preferences for the own account and those of others, most wish for a higher anonymity for themselves than others (4%), only less than 1% want it to be the other way round.

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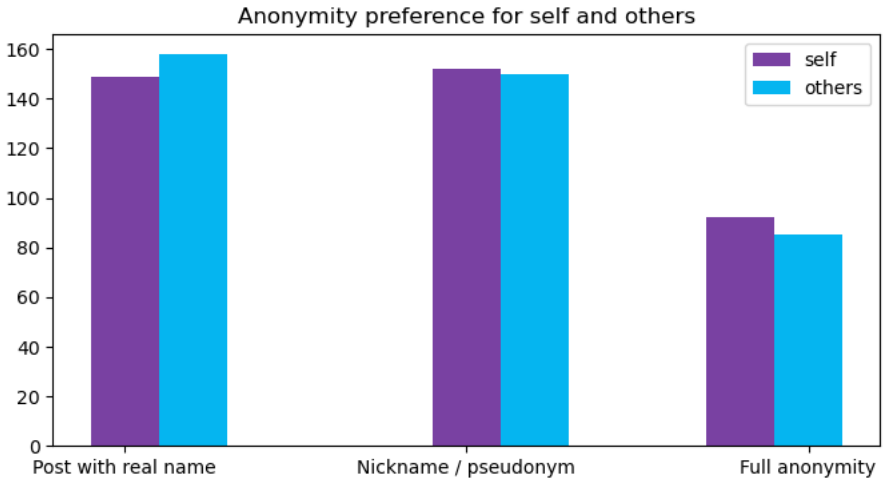
Figure 2.15 Anonymity preferences



Free-text commentary on this question's 'Other' option reveals a nuanced view of anonymity, including its possibilities, risks, and requirements. Most respondents requested more flexible options, such as using a nickname while having the account internally verified as belonging to a real person, or choosing the degree of anonymity based on the task. There was also a suggestion to use "Random names every time".

Apart from these selection questions, participants were also asked for their expectations regarding an ideal app that would be worth their trust ("In your opinion, what would a safe and trustworthy digital democracy app do better than existing technology?").

As already seen in the risk assessment sections above and in accordance with the accountability vs. anonymity preferences, people want strong privacy and security by default (e.g., "Respect the privacy of citizens"), in addition to robust identity verification to prevent manipulation and duplications (e.g., "Prevent multiple submissions by the same person trying to skew the results"). These have to be combined with a clear and accessible information layer for best transparency and accountability: Respondents ask to see clearly how input is handled, trace decisions, and audit outcomes, ideally with public logs, case IDs, and openness (e.g., "would be transparent and created using open source methods, so that people who are familiar with the subject matter would always be entitled to raise the alarm if, in their opinion, something undemocratic was happening").

Most importantly, interactions with the technology would feel worthwhile ("Real citizen participation with real results"). Participants ask for the app to increase engagement and ensure contributions translate into visible outcomes, be it by voting, petitions, and direct channels to officials which, in turn, would motivate citizen participation by success ("a helpful way to use technology for citizens to have a tangible impact on policy making, as well as to increase political literacy for most individuals, since there isn't a specific app that combines all these aspects in a single platform and has the potential to lead to real measures and have an actual impact.").

Across responses, people are asking for a single, easy-to-use hub that is private and secure by design, verifies real people without exploiting their data, shows exactly how input leads to outcomes (with traceable accountability), and enables meaningful, civil participation without the noise and manipulation of typical social media.

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2.5 Participatory workshops

In addition to the more quantitatively oriented citizen survey, we also conducted two participatory workshops in the two municipalities planned to pilot the app developed in the INNOVADE project. These workshops aimed to involve local citizens in the requirements assessment and the initial design of the technology to come, and provided a vivid window into how citizens experience local democracy and what they expect from digital tools intended to improve it.

Although the groups were small (three in Spain and thirteen in Belgium), their discussions were lively, honest, and often candid, reflecting deep engagement with the challenges and opportunities of digital transformation in public life. Our thanks go to the project partners at Cibervoluntarios and the municipalities of San Martín de la Vega and Geel for conducting the workshops locally in the participants' own language and for providing the results afterwards.

From the outset, participants in both municipalities expressed **a strong desire for more accessible and responsive communication** with their local governments. In San Martín de la Vega, citizens voiced frustration with the impersonal nature of existing digital services. One participant described the ordeal of navigating an automated phone system: "I call and they answer, but it's very difficult to feel that you're speaking with someone and they can help you" (all quotes are taken from the workshop reports and translated from Spanish/Dutch). This sentiment was echoed by others who complained about the loss of face-to-face interaction and the growing reliance on technology, which, in their view, often complicates rather than simplifies public service. The group agreed that while automation can be efficient, it should never come at the expense of genuine human support: "Getting rid of the machines" was suggested, only half in jest, as a solution to the alienation felt by many.

A **recurring theme** was the importance of **fairness and transparency** in local decision-making. Several participants noted that in smaller towns, personal relationships with politicians can still determine who is heard, creating a sense of exclusion among newcomers or those without local ties. "The persistent one wins, who is there every day … but that's not right," one attendee observed, arguing for more professionalised and equitable channels for citizen input. As towns grow, the group agreed, such informal systems become unsustainable, and digital tools could help ensure that "everyone has equity in access and the procedure both for arrival and resolution is the same for everyone."

The workshops emphasised practical features for a digital democracy app. Participants were enthusiastic about reporting local issues, such as broken benches or graffiti, by uploading photos and receiving updates on resolutions. They valued participatory budgeting and transparent decision-making, provided the app could guarantee that input would lead to real outcomes. "If we want 300 votes, with the 300 you have to get into the application and use it," one participant noted, underscoring the need for broad and meaningful engagement. However, there was also scepticism about whether municipalities would genuinely adopt these tools or use them merely as symbolic gestures. "The administration never asks me what my needs are as a citizen," said one attendee, "and when they do, they don't report back what comes out of it."

A significant portion of the workshop in Spain focused on creating **user personas**, helping participants think concretely about who would use the app, what they would need, and the barriers they might face. The persona of Juan, a teleworker who had recently moved to the town and was

largely disconnected from local life, highlighted the challenge of fostering a sense of belonging and encouraging participation among residents on the periphery. María, a teenager seeking activities, illustrated the need for the app to be visually appealing, easy to navigate, and responsive; if she searched for a dance class and found nothing, "she turns off the computer and doesn't go anymore." The group emphasised that the app should enable users to propose new activities and receive feedback, rather than passively consuming information.

Older citizens were also a focus, with personas such as Luisa representing those with limited digital literacy or apprehension about technology. The group emphasised the need for accessibility features, including voice commands, simplified interfaces, high-contrast visuals, and the importance of word-of-mouth and peer support in encouraging adoption. Adults aged 35 to 50, often with children and high digital fluency, were seen as likely users, but only if the app was efficient and clearly beneficial given their time constraints.

The "Utopia/Dystopia" exercise, held in both workshops but mostly in the Belgian one, brought these themes into sharp relief. In **the utopian scenario,** participants envisioned an intuitive, inclusive, and empowering app: clean interfaces, simple and secure logins (such as fingerprint or facial recognition), multilingual support, and direct integration with public services. The ideal app would not only connect citizens to information but also foster trust and transparency by visibly acting on their input. Some even imagined AI features that could offer emotional support or direct users in crisis to appropriate resources, reflecting the hope that technology might one day provide more than administrative convenience.

By contrast, **the dystopian scenario** warned of an app that was bureaucratic, inaccessible, and ultimately alienating. Complex logins, cluttered interfaces, and a lack of meaningful response to user input would quickly erode trust and discourage engagement. "If signing up for the application isn't simple, nobody's going to use it." There were also concerns about digital exclusion, particularly among older adults, people with disabilities, and those less tech-savvy, as well as privacy and security, especially if the app were to handle sensitive tasks such as voting.

The Belgian workshop in Geel placed particular emphasis on the risks of polarisation, misinformation, and the challenge of moderating public discussion in digital spaces. Participants discussed the need for clear frameworks and proactive communication from the city, as well as the importance of digital security and inclusivity. They also noted the challenge posed by "digibeten" (those with low digital skills) and the need for tailored support and education to ensure no one is left behind.

In closing, **the workshops revealed** both **high hopes and healthy scepticism** about digital democracy's potential, closely mirroring the survey results. There was a clear appetite for tools that make participation easier, more transparent, and more impactful, provided they are designed with real people, real needs, and real limits in mind. As one participant put it, "The consensus was that while AI could enhance accessibility and responsiveness, it must be designed to escalate to human intervention when needed." Ultimately, the workshops underscored that technology alone cannot fix democracy, but thoughtfully designed digital tools can play a vital role in making it more open, fair, and responsive to all.

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2.6 Discussion

Citizens across the sampled EU countries are digitally equipped and generally open to a democracy app, but they will embrace it only if it delivers real, visible influence over decisions, strong transparency and feedback, and serious protection against manipulation, being ignored, and data misuse.

The citizen survey shows that European citizens are generally interested in civic participation. Survey respondents regularly use smartphones and computers and already conduct administrative interactions with public bodies online. However, participatory digital democracy (e.g., proposal feedback, participatory budgeting, civic campaigns) remains rare. The main reasons are not technological barriers but perceptions of limited impact and low engagement with digital channels.

App development should therefore focus on making participation meaningful, rewarding, and visible, rather than on overcoming basic digital access. The design must close the gap between everyday digital competence and actual democratic engagement. Although the survey cohort had theoretical access to the required devices, this did not necessarily reflect digital competences. The citizen workshops further showed that a digital tool on its own might not reach all audiences, not only due to digital barriers but also because of a preference for physical, offline interactions. It is therefore recommended that an app be only one piece of a larger democratic process that involves citizens hybridly, with digital and analog elements that complement each other. The use of either element should not favour or penalise users compared with the other group or hybrid usage.

In both the survey and the workshops, citizens consistently prioritise concrete, actionable features in democracy apps: reporting local issues, voting or rating proposals, tracking project progress, and participating in petitions and structured feedback processes. These preferences are stable across countries and user segments. Similarly, desired outcomes are clear: transparency, trust in institutions, improved services, accountability, fairness, and real impact on decisions. Citizens expect noticeable improvements in their influence on local decisions through a well-designed app, but do not demand direct control over all public decisions. Most prefer a flexible influence model that adapts to the importance and nature of each issue.

A digital democracy app should focus on a core set of features that directly connect citizens to tangible decisions and outcomes. It should be built on transparency, traceable feedback, and visible progress, and clearly communicate the purpose and scope of each participation channel, distinguishing between consultative, advisory, and binding processes.

Citizens want participation to be episodic yet regular, centred on clear workflows and feedback loops. The most valued feedback features are full transparency of all input, clear information on how individual contributions shaped outcomes, and accessible summaries of community input. An app should ensure every contribution receives immediate confirmation, is traceably linked to aggregated results and decisions, and clearly explains how input is counted, how decisions are made, and what safeguards are in place.

Risks such as manipulation, misinformation, exclusion, and data misuse are perceived as serious, especially among digitally savvy respondents. Trust in a digital democracy app may be strengthened through the same transparency that benefits its processes: data protection and cybersecurity measures should be made visible and support accessibility for diverse users, ideally by an institution that users

already trust, such as local municipalities or non-profit/open-source actors, thus public, democratically accountable entities. A strong, visible moderation system to prevent incivility and manipulation, with accessible reporting for problematic content, can also contribute to a trustworthy environment.

While this study draws on a large, stratified EU sample, several **limitations** should be noted. The respondent pool is skewed towards Southern/Mediterranean European countries, with fewer North/East European participants. Participation was voluntary and online, which may bias the sample towards more digitally comfortable and civically engaged individuals. Self-reporting may overstate intentions or understate barriers (social desirability bias). Finally, the findings represent attitudes and expectations, not observed behaviour in a deployed app. These limitations mean that while the results are robust for the sample studied, caution is needed when generalising to all EU citizens and to actual usage. Local political culture, trust levels, and historical experiences with democracy may shape preferences beyond what is captured here. Pilots should be attentive to local adaptation, ongoing feedback, and iterative development.

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3 Governmental perspectives on digital democracy tools

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3.1 Introduction

Focusing on governmental perspectives regarding current and future digital democracy tools, this chapter begins with a brief academic overview in section 3.2. What do research antecedents on the topic already reveal about existing practices, concerns, expectations, and desires from both a front-end and back-end organiser perspective? These insights will help contextualise our own findings and complement them where necessary. However, before we do that, section 3.3 explains how we collected data on current expectations and preferences of governmental actors involved in organising (digital) citizen participation. We then move to the analysis in section 3.4 and a discussion of the findings and initial recommendations in Section 3.5.

3.2 Literature

Digital technologies are known to alter how citizens interact with their government(s) and to facilitate active **engagement** in the policies they are subject to and the services they receive (Casula et al. 2022; Elstub and Escobar 2019; Lember et al. 2019; Linders 2012). Interacting with external stakeholders, such as citizens, and gathering their input for smarter decision-making and customised service delivery can now occur at unprecedented scale, anywhere and at any time, through engaging interfaces with AI-enhanced support (e.g., Bono Rossello et al. 2024; Dugstad et al. 2019; Lember et al. 2019; Simonofski et al. 2019). **However**, despite 'civic tech optimism' (see Lember et al. 2019), the growing number of practical applications and the slowly acceding body of research (Leino and Puumala 2021; Rodriguez Müller et al. 2021), **questions remain about what spurs stakeholders to** (organise) **digital participation**, how to guarantee inclusion across all ends of the initiative, and how to deliver on desired outputs and outcomes in a viable way (e.g., Brandsen et al. 2018; Rodriguez Müller et al. 2024; Russon Gilman and Peixoto 2019; Schelings et al. 2023).

An essential part of answering these questions is **mapping stakeholder pre-conditions** for (sustained) participation, as their expectations and opinions vis-à-vis oneself and the initiative are vital to (a) whether and (b) how digital citizen participation will occur and reach its full potential (e.g., Callens 2023; Van Eijk and Gascó 2018). In this respect, one needs to be mindful of the 'full potential' being sought, as the design choices made in its pursuit are by no means trivial (Best et al. 2019; Farr 2016; Mukherjee and Mukherjee 2018). In this way, technology acceptance models such as Task-Technology Fit (TTF) (Goodhue and Thompson 1995) and the (updated) Unified Theory of Acceptance and Use of Technology (UTAUT2) (Venkatesh et al. 2003; 2012; 2016) have repeatedly emphasised the importance of concrete expectations (e.g., regarding performance, effort and price-value) for the effective deployment or use of digital solutions—which also include the DDAs we are interested in (Tamilmani et al. 2021). From that perspective, it seems essential to learn more about the precise

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front-end and back-end expectations and/or preferences of government actors, **so that a newly designed DDA does not risk becoming obsolete before launch**.

Simonofski et al. (2021) also examined this topic—albeit focusing explicitly on the desired functionalities of smart city participation platforms. Among other findings, the authors identified (a) user-friendliness for citizens and public servants, (b) a choice of activation methods, (c) data-processing support, (d) moderation and feedback functionalities, and (e) the integration of social media (data) as essential to platform design. We attempt to assess whether these insights also hold for our sample of European public officials. We will, however, look beyond participation platforms alone and outline a broader narrative for future DDAs.

3.3 Data and methods

3.3.1 Data collection strategy

Research context and sampling strategy

A **questionnaire** was created to explore the expectations and preferences of a diverse set of European governmental actors involved in organising (digital) citizen participation at various policy levels vis-à-vis current and future DDAs. What tools do they currently employ, how, and under what conditions? Analysing these aspects enables us to develop balanced design recommendations for future democracy tools and their core features. The reader can find these recommendations in Chapter 4.

The online questionnaire comprised **four modules** (see the section below for a detailed description) and was translated into **five different languages** (i.e., Dutch, English, German, Italian, and Spanish). It was administered via LimeSurvey among various public actors across Europe. Our **invitation strategy** primarily involved contacting local civil servants or political mandate holders (e.g., mayors and aldermen) because the INNOVADE application to be developed will be piloted at this policy level. To ensure a generalisability of our results—so that the application could be scaled up later—we also sought insights from a limited number of public actors at the supra-local policy level. Specifically, the following groups were sent a letter inviting them to participate in the questionnaire:

- Local political mandate holders responsible for citizen participation (insofar as these powers were explicitly assigned to a particular member of the College for Mayor and Aldermen) in the Flemish (n=174) and German-speaking community municipalities (n=6) of **Belgium**. For those municipalities where these powers were not allocated within the local executive, we determined whether the city or municipality nevertheless had a local participation platform to which (mostly generic) email addresses were linked for questions or concerns (n=13). All these invitations were sent out for the first time during the week of November 3 to 7, 2025. Each of these emails also requested that the question be forwarded internally to the civil servant(s) responsible for citizen participation within that local administration, as they tend to possess the hands-on knowledge and experience needed to assess the practicalities of (digital) citizen participation within their municipal or city borders. A one-time reminder followed two weeks later, on November 18, 2025. Additionally, a semi-autonomous governmental organisation, known for frequently organising citizen participation initiatives, was approached to participate in our questionnaire setup (n=1) on November 17, 2025.

- Local, provincial, regional, and federal policymakers or representatives of public organisations in **Spain**, appearing in the networks of INNOVADE partners Cibervoluntarios and San Martín de la Vega (n=unknown). Invitations were sent from November 17, 2025, onwards.
- Local, provincial, regional, and federal policymakers or representatives of public organisations in **Germany**, appearing in Universität Paderborn's network (n=unknown).
- Policymakers and representatives of public organisations or authorities **across Europe** who subscribed to the newsletter via the INNOVADE website (n=74) received a one-time invitation to participate in the questionnaire on November 18, 2025.

The analysis below is based on all responses received by November 27, 2025.

Questionnaire build-up and variables

The questionnaire commenced by exploring **respondents' professional backgrounds** (i.e., the policy level at which they were active and the type of public entity they represented throughout the survey) in the **first module**.

In the **second module**, we introduced a **branching logic based on** respondents' **experience in organising (digital) citizen participation**. The answer options ranged from (a) past experience(s) in organising citizen participation digitally (leading to branch 1), (b) contemporary experience(s) in organising citizen participation digitally (leading to branch 2), (c) experience(s) in organising citizen participation that is solely offline (leading to branch 3), and (d) no experience in organising digital or offline citizen participation (also leading to branch 3). Within **branches one and two**, respondents were asked to reflect on the characteristics of their (most recent) citizen participation initiative, such as the topic that invited participation, the activation methods, tools, and supportive measures used to engage as many citizens as possible, as well as the challenges or difficulties they faced organising the initiative and what they appreciated or disliked about the digital tools they use(d). In contrast, within **branch three**, we mainly focused on the challenges keeping these public entities from organising citizen participation (digitally).

After branching in the second module, respondents again received the same questions in the **third module**. This time, we asked them about their **visions for the future of DDAs**, including activation methods (i.e., what citizens should ideally be allowed to do in such apps), objectives, desirable outcomes, evaluation and monitoring strategies, and design characteristics (e.g., whether anonymous participation should be permitted when it increases the likelihood of false, harmful, or hateful contributions). These were tested through eight 5-point Likert-scale statements (ranging from '-2 = totally disagree' to '2 = totally agree'). Respondents previously placed in the third branch received one additional question in this module, asking them to describe a (front- or back-end) feature that a future digital democracy tool should have. For respondents from branches one and two, these insights were already captured in their responses to questions about application features they felt did not work well or were completely missing.

The fourth and **final module** included two closing questions, allowing respondents to leave comments, concerns, or questions related to the questionnaire, as well as their contact details to

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participate in future parts of the INNOVADE project (i.e., WP3 efforts to gather communication roadmaps or strategies for organising digital citizen participation).

Depending on the branch respondents were assigned to, the entire questionnaire took approximately 8 to 15 minutes to complete.

Data cleaning procedure

We received 50 fully completed questionnaires (i.e., respondents who navigated through the survey from the beginning to the fourth module). Despite their early withdrawal (i.e., not reaching the final module), we also included responses from an additional 17 respondents. Although not complete, their partially filled-out questionnaires provided many interesting insights into the challenges respondents encountered in organising or initiating citizen participation.

Considering the already modest number of completed questionnaires and the absence of a need for complex statistical analyses, the data was not further cleaned through case-wise deletion of respondents with missing values. This resulted in a **dataset of 67 respondents, of whom 50 answered all questions**. The sample size 'n' will, therefore, be explicitly indicated in the title of each table and figure included in the analysis section below to inform the reader.

Participants

As shown in **Table 3.1**, most questionnaires were completed in Dutch (57%) or Spanish (31%). Despite the offer, there were no participants who spoke Italian. **Respondents** were **mainly active at the local policy level** (in 88% of cases) and represented **the executive rather than their administration** (in 66% of cases). In other words, the email request for internal referrals to staff members with the most hands-on experience regarding citizen participation did not fare well.

When selecting 'other', respondents represented associations, non-governmental organisations, non-profit organisations, or higher education institutions experienced in citizen participation.

Table 3.1 Overview of respondents (n=67)

	Policy level					Type of public entity [a]				
Language	Local	Provincial	Regional	National	European	1	2	3	4	**Totals**
Dutch	37	0	1	0	0	33	5	0	0	38
English	1	0	0	0	1	0	1	0	1	2
German	5	0	1	0	0	2	2	0	2	6
Italian	0	0	0	0	0	0	0	0	0	0
Spanish	16	4	0	1	0	9	1	1	10	21
Totals	59	4	2	1	1	44	9	1	13	67

Note (a). Types of public entities in the questionnaire corresponded to: '1 = A ministry, cabinet, local or provincial government'; '2 = An administration or administrative department for policy implementation and service delivery'; '3 = A (semi)autonomous governmental organisation; '4 = Other'.

Out of the 67 respondents in the sample, **45 had experience with digital citizen participation**, either through an initiative or initiatives that are currently ongoing (in 17 cases or 38%) or in the past (in 28 cases or 62%). Among the remaining respondents, 16 had experience organising citizen participation

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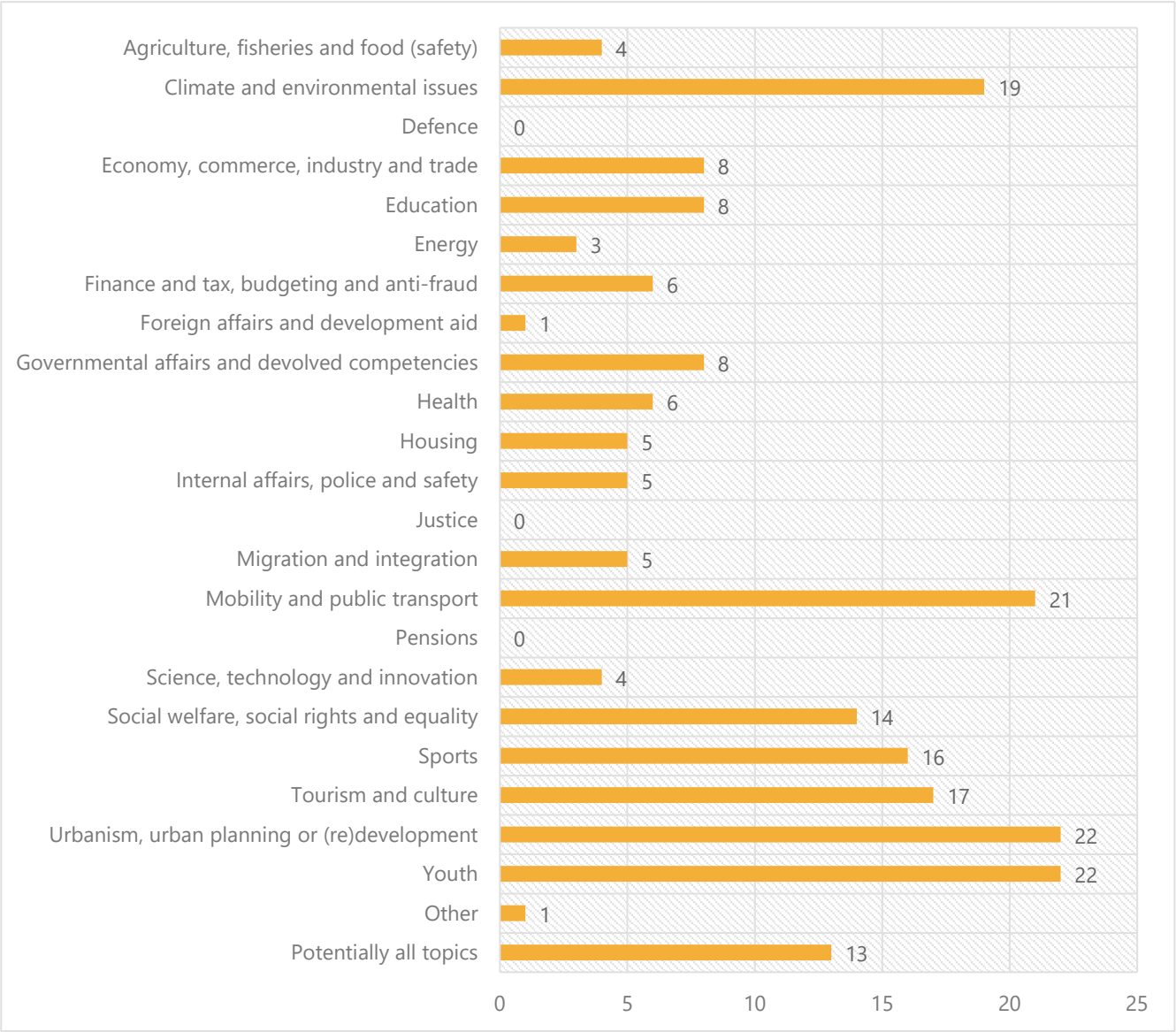
on behalf of the public entity they represented, although only offline. An additional 6 respondents had no experience at all with citizen participation. Concerning the latter two groups, we are particularly interested in understanding what prevents them from engaging in digital participation.

Figure 3.1 Policy areas to which citizen participation related (n=45)



When we consider the **policy areas** to which citizen participation related, we see in **Figure 3.1** that these covered a **rich diversity of topics**, with urbanism, urban planning or (re)development (n=22), youth affairs (n=22), mobility and public transport (n=21), climate and the environment (n=19), tourism, culture and sports (n=17 and 16 respectively) standing out. Given that we mainly recruited respondents locally, it is not surprising that topics related to defence policy, justice or pensions were never the subject of participation. These powers usually reside at higher policy levels.

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Additionally, 13 respondents provided specific examples of how they involved citizens and enabled them to give input within each of these presented areas—at least, if those belonged to their competences. Examples include involving citizens in the creation of the multi-year budget, including policy objectives, organising multi-faceted events, and coordinating voluntary work and initiatives to promote social cohesion.

3.3.2 Data analysis procedure

The data analysis section is **structured along the lines of the** six **sub-questions derived from the central RQ** (see Chapter 1). By systematically examining each sub-question, we aim to formulate a comprehensive answer to the central inquiry: what expectations and preferences do governmental actors involved in organising (digital) citizen participation have regarding current and future DDAs? For most of the analyses presented, **descriptive statistics** will be used, displayed in figures or tables and then illustrated in words. However, when examining **future visions of DDAs**, three **respondent groups** will be **compared**: (a) those experienced in organising citizen participation through DDAs (n=32), (b) those with experience in organising citizen participation, but deliberately limiting it to offline participation (n=14), and (c) those without such experience (n=5). To facilitate a meaningful comparison of frequencies among these groups, a **weighted Chi-square test of independency** will be used. To compare scale variables between respondent at local vs. supra-local level and those with vs. without digital democracy experience, **independent sample T-tests** are used despite our small sample size (n=51). After all, parametric T-tests have been proven quite robust against violations of normality and equality of variance assumptions (Fradette et al. 2003; Wiedermann and Von Eye 2013).

3.4 Analysis of governmental preferences

In the **first section** (i.e., Section 3.4.1), we discuss the digital democracy **tools** currently used by public actors and whether they supplement their digital efforts with (a) offline alternatives or (b) side tools (e.g., social media). In the **second section** (i.e., Section 3.4.2), we examine how these tools are employed to engage citizens. Which **activation methods** do they support, and for which types of citizen activities are they used? Can we also identify a difference between the present situation and an ideal future scenario? In the **third section** (i.e., Section 3.4.3), we describe the digital tool **features** that respondents with digital citizen participation experience (a) appreciated in the tools they used, (b) found defective or not functioning properly, or (c) perceived as entirely missing. These insights are complemented by those of respondents without digital democracy experience, who considered the features they would implement in an ideal future tool instead. The **fourth section** (i.e., Section 3.4.4) then highlights the **challenges** respondents faced when organising digital citizen participation, as well as those preventing them from doing so altogether. Finally, in the **fifth section** (i.e., Section 3.4.5), we focus on the **desirable** characteristics of **future** digital democracy initiatives.

The **results** are discussed in light of research antecedents and earlier INNOVADE work presented in the Interdisciplinary Knowledge Base throughout these sections and **synthesised in Section 3.5.**

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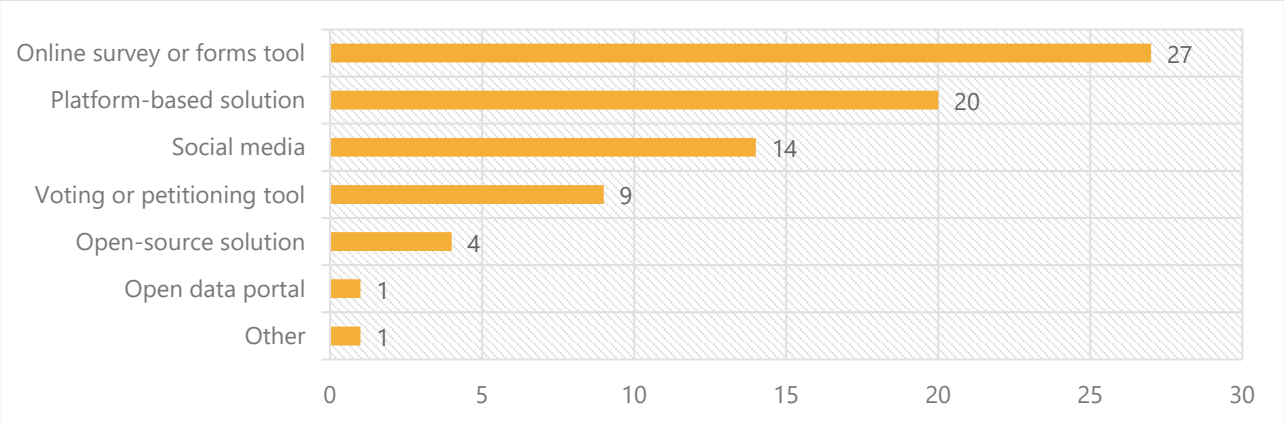
3.4.1 Digital democracy tools and supplements

Figure 3.2 (cf. infra) illustrates how **online surveys or forms**, such as Google Forms, are commonly utilised tools for facilitating citizen participation by public actors or entities. The appeal of these applications mainly resides in their ease of use. They are not only simple and intuitive to set up, but also offer several pre-formatted question options, appear neat and professional, and generate basic descriptive statistics in the background, making it straightforward for colleagues to interpret citizens' contributions. The ability to export results in a commonly accessible format, such as an Excel or CSV file, is also highly valued by respondents of the questionnaire.

Figure 3.2 Type of tools respondents used in their digital citizen participation initiative(s) (n=36)



Note. In the clarification section that accompanied the 'other' option, the respondent noted 'app'. In theory, this might have encompassed (a combination of) any of the previous ones.

In second position, we find **platform-based solutions**, followed by **social media**. We have no further information on how both are used in practice to engage citizens, however. In the latter case, for example, is it purely a matter of one-way communication (what Lago et al. 2019 call "Information 1.0" or "Information 2.0"), or are short polls used to have citizens vote and leave their opinions in a comment section? In such cases, social media also acts as a voting tool. **Open-source applications**, such as collaborative maps on which public services can be co-produced (like the application 'Fix My Street'), and **open data portals** are used significantly less often. However, when well designed, as described in the INNOVADE Interdisciplinary Knowledge Base's fourth chapter on Open Governance (Coenen and Werimo 2025), the latter can provide a wealth of contextual information that supports citizens in developing and substantiating their ideas.

Most of our respondents (i.e., 61%) used multiple tools during their initiative, with online surveys or platform-based solutions and social media being the most common combinations. Specifically, in 50% of local digital citizen participation initiatives, the **primary tool** (e.g., a platform) was **supplemented by another digital tool** (e.g., social media or a digital newsletter). For supra-local initiatives, this was the case in all instances, as social media, especially, show great potential to increase their reach and inform citizens about participation opportunities at policy levels farther from their daily lives. In addition to increased reach, communication is cited as the second most important reason to supplement with tools such as social media: they offer a convenient venue to notify citizens about project progress, updates, next steps, and to showcase what has been achieved.

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In comparison, 81% of the local initiatives and 50% of the supra-local ones **supplemented** their digital participation tools **with offline alternatives** such as paper-based surveys, neighbourhood councils and visits, workshops, walkshops, discussion tables at the municipal hall, info sessions or markets, and permanent advisory boards. Here, as the distance to citizens increases, it appears to become more difficult and costly to organise offline alternatives. Although offline alternatives are resource-intensive, they are most often chosen for reasons of inclusivity and accessibility. By offering an offline option, organisers acknowledge that not everyone finds it equally easy to participate online—a digital divide persists among certain age groups and segments of their target population, while for others it feels more habitual (such as submitting things on paper or using telephone to report an issue instead of accessing a platform or an app). Additionally, they recognise that not everyone has the time or desire to participate in person. In essence, providing both options creates a balanced approach to reaching as diverse an audience as possible.

The **integration of offline and online** methods within a single initiative is **also considered desirable** (and perhaps even necessary) **for achieving certain objectives**, such as (a) fostering social cohesion and understanding within and between groups, which is more easily accomplished when individuals have the opportunity to meet in person; (b) gaining a better understanding of the target audience and their resources by engaging with them directly through face-to-face discussions; (c) attaching a face to the project, city, or organisation leading the initiative to increase citizen trust and involvement; and (d) enabling more direct empowerment or support for citizens on complex issues that require contextual information for meaningful contributions. Finally, some respondents also recognised that offline and online methods not only serve different purposes but also generate different types of information. Thanks to their reach, digital tools are ideal for collecting large-scale quantitative data, while smaller-scale offline approaches are better suited for in-depth work and gathering qualitative insights. In other words, one can truly complement or enrich the other when considering their sequence within a participation project.

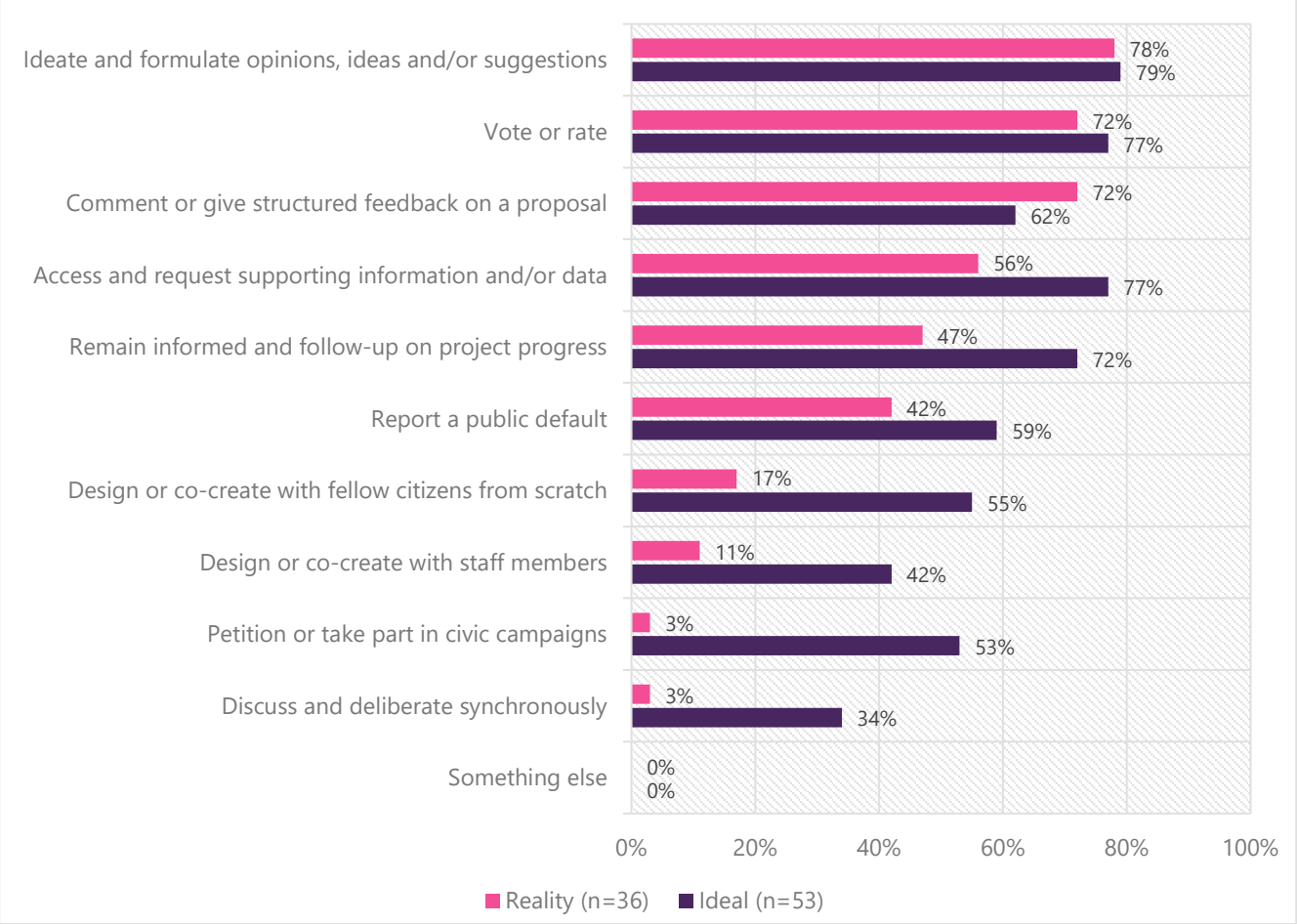
3.4.2 Activation methods: between reality and the ideal

In **Figure 3.3** (cf. infra), the reader finds an overview of how public actors or entities currently use these tools versus how they wish to see them used in the future. More specifically, it presents the **activation methods** supported by the tools, or those they would support in an ideal or desirable future. The term 'activation method' pertains to all activities or actions that citizens are permitted or enabled to undertake during a (digital) participation initiative.

We notice that citizens are first and foremost allowed **to ideate and formulate opinions, ideas and/or suggestions** on organiser queries (e.g., through platform message boards, comment functions or surveys). **Voting or rating** (e.g., to up or downvote particular proposals from fellow citizens) **and commenting** (e.g., providing feedback on existing proposals or notifications) are also popular activation methods. Given the sometimes complex nature of participation projects and the topics they address, it is striking that we find the possibility to **access and request additional or supporting information and/or data** (e.g., video tutorials or background readings that enable one to formulate an opinion, understand the topic fully and participate meaningfully) only in fourth place and in 56% of cases. This is particularly noteworthy given that the section above showed that public

actors and entities often work with very diverse audiences—some of which may benefit greatly from this additional support.

Figure 3.3 Activation methods in digital democracy or citizen participation initiatives, reality (n=36) vs. past (n=53) expressed in percentages



Note. With activation methods, we denote all actions or activities citizens could undertake with or in the tool.

Clearly **unpopular** are methods that involve citizens in designing public amenities, policies, or services (either organised by themselves in a bottom-up manner or directed from the top with guidance from public officials), enabling them to initiate and promote their own petitions or to engage in real-time discussions with fellow citizens.

When we compare current practices with an envisioned **desirable or ideal future**, however, we notice there is **plenty of room for improvement**. In fact, the lower we move down the list of common practices, the more the frequency bars in Figure 3.3 diverge from one another. In it, we see, for example, that respondents recognise the need to place greater value on providing citizens with **thorough, accurate, and timely information** so that they can participate in a meaningful way. In this, our respondents can certainly count on academic endorsement, as research unequivocally demonstrates the importance of **(tailored) support** in reducing pre-existing knowledge and skill imbalances among citizens, mitigating participation inequalities, and increasing engagement (see, for example, Callens 2023; Deligiaouri 2013; Karlsson et al. 2012; Parrado et al. 2013; Viglia et al. 2018).

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Moreover, ideally, **features** (e.g., pop-up notifications and interim newsletters) are included to allow citizens **to stay informed** about project progress, tool or content updates, and the impact of their contributions, when desired. Citizens could also be recognised more often as a vital resource by being invited to report public defaults (e.g., a missing traffic sign, a damaged park bench, or a pothole in the road surface), thereby co-producing public amenities and services.

Finally, there may be excessive commenting on matters that are not always relevant. It is therefore not surprising that commenting and providing structured feedback on proposals is the sole activation method that results in a lower desirability score than what currently occurs in practice. Conversely, fostering **meaningful debate** or actively involving citizens in **tangible design exercises**, whether bottom-up or top-down, may be more effective and desirable ways to activate—at least when these can (in part) be organised offline.

3.4.3 Tool features—the appreciated, defective, missing and desired

Table 3.2 (cf. infra) describes the digital tool **features** that respondents with experience of digital citizen participation (n=45) (a) **appreciated** in the tools they used, (b) **found defective or** not functioning properly, or (c) perceived as entirely **missing**.

In essence, the reader will find that many elements in this table can be traced back to ease of use on the one hand and a desire for context-sensitive, fair, high-quality and transparent participation processes on the other. Although **ease of use** was touched upon a few times from a front-end perspective (e.g., features that allow easy and barrier-free user identification or notification functions that can keep citizens from getting overwhelmed by the vast number of new entries or comments), it was discussed much more frequently from a back-end perspective. Not only are applications that are easy to set up and manage, with a wide range of pre-formatted options, being praised, but there is also a clear call for features that support staff in data analysis and sense-making and lower coordination costs by better integrating communication channels and data facilities.

Digital democracy tools or applications that include Plug & Play (PnP) building blocks and support customisation enable a highly **context-oriented approach**, thereby enhancing the **quality** of participation **processes**. Not every participation initiative, for example, may require the same level of commenting sections or voting options. Therefore, citizens and administrators of the application should not be distracted by them. To put it differently: the digital application should support the objectives of citizen participation, not the other way around. When objectives are tailored to (flawed or limited) digital options, this undermines the project's relevance from the outset. We see this, for example, when user identification or authentication proves difficult or impossible, jeopardising **transparency** objectives **and fair or equal participation** (i.e., one [wo]man, one vote). To ensure this fair and equal participation even more, language or translation modules are also being considered to facilitate the involvement of non-native speakers, and easy edits or add-ons with educational content and help functions to support those who are digitally less literate or unaware of what citizen participation is and what it can signify in policymaking and service delivery.

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Table 3.2 Digital tool features appreciated, found defective or entirely missing by respondents experienced in digital citizen participation, presented in order of reference frequency within each category (n=45)

Digital tool features		
Appreciated features	Defective features	Missing features
• **Options to share ideas and vote** (i.e., no one-way or top-down traffic as citizens can formulate their own suggestions). *(Referenced by 8 sources)* • **Front-end and back-end ease of use** (e.g., easy for civil servants to choose and adapt questions, such as multiple choose ones, or for citizens to sign up to updates). *(Referenced by 6 sources)* • **Build-in back-end support for data analysis** (e.g., AI supported or automated compiling of base statistics) **and export** (e.g., data transportable in widely accessible formats such as Excel). *(Referenced by 4 sources)* • **Clear follow-up tools** (e.g., indicating the different phases in the participation process or across projects), **timelines and update overviews** from newly added items or collected data. *(Referenced by 4 sources)* • **Customisation flexibility** rendering options to adapt or visually align the tool to an entity's identity whilst guaranteeing a **professional and engaging outlook** (e.g., Google forms which received prose for its lean yet professionally looking design). *(Referenced by 4 sources)* • **Option to provide two-way feedback** (i.e., respond to or comment on citizens' suggestions). *(Referenced by 3 sources)*	• **No or too cumbersome user identification**, which, in some cases, let to an influx of unsubstantiated, absurd or even harmful contributions, citizen drop-out or bias as some respondents from outside the municipality were able vote too. Furthermore, user identification is often considered a much-needed starting point to organise two-way feedback. *(Referenced by 7 sources)* • **Insufficiently user-friendliness** as a basic digital background is required to operate the tool (e.g., submitting ideas could be done more easily or intuitive to make it more attractive), help functions are not functioning properly and back-office build-up and maintenance proves time-consuming, confusing and complicated. *(Referenced by 5 sources)* • Tools that are perceived **sufficient for gathering ideas but less for debate and thinking** those **ideas through**. Genuine debate benefits from physical togetherness, synchronous discussion of information shared and support through direct communication. *(Referenced by 2 sources)* • **No or inadequate automated moderation.** A great deal of manpower is still required. Ideally, staff can restrict itself to a human verification of automated processes. *(Referenced by 2 sources)*	• **Low-threshold user authentication** to be able to respond to a query, complaint or request and avoid abuse. *(Referenced by 2 sources)* • **Idea box**, encouraging citizens to contribute their own ideas and not restricting them to pre-defined or formatted replies. *(Referenced by 2 sources)* • **Build-in data analysis support** (e.g., for finding correlations between questions or overlap in text suggestions) **and automatic report generation** for the back-office. *(Referenced by 2 sources)* • A **notification function** to remain updated about decisions that have been made, topics you are interested in or project page updates if so desired. *(Referenced by 2 sources)* • **Integration with social media** for communication purposes so you can immediately write, layout and promote in the right format (e.g., Meta suite). *(Referenced by 2 sources)* • Prior training or an **online information tool or webinar** on digital participation culture for citizens. *(Referenced by 1 source)* • **Integration within one** (e.g., municipal) **application** (i.e., a participation platform is one mere tile or part of many more public service options in a one-stop shop application

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- **Interactive maps** with pinpoints supported by evidence (i.e., citizens could indicate on a map dangerous but also very good mobility points and had to support their answer by arguments). *(Referenced by 2 sources)*
- **PnP building blocks** or preformatted elements (e.g., forms, voting tool, …) to be used freely depending on the project's objectives. *(Referenced by 2 sources)*
- **Participant transparency** or the possibility for all respondents to see the contributions and/or responses of others. *(Referenced by 1 source)*
- **Speed and/or smoothness of tools** (i.e., no lagging, waiting, error messages and having to try again). *(Referenced by 1 source)*
- **Ability to duplicate existing projects** so you don't have to design from scratch each time. *(Referenced by 1 source)*
- Option to **upload documents** for consultation (i.e., big bang participation isn't always needed, sometimes short questions on small practical matters that require feedback quickly, are just as interesting). *(Referenced by 1 source)*
- **Gamification elements** (i.e., rankings). *(Referenced by 1 source)*
- **Option to** answer questions and, hence, **participate anonymously**. *(Referenced by 1 source)*
- The possibility to **consult additional information**. *(Referenced by 1 source)*
- A **badly operating stay informed or remain subscribed function** for automatically receiving emails or pop-up notifications about status updates on projects that citizens are invested in. *(Referenced by 2 sources)*
- Tools that only used **pre-formatted entries or closed-ended questions** restricting citizens room to manoeuvre or suggest out of the ordinary. *(Referenced by 1 source)*
- Open-ended questions are interesting but also time-consuming to **digest and analyse without support tools**. *(Referenced by 1 source)*
- A lack of **integration with other communication channels and applications** of the city, organisation or entity, such as their social media or the website. *(Referenced by 1 source)*.
- **Features that** through their design actually **allow or encourage little interaction**. *(Referenced by 1 source)*

maintained by the public entity. This means that citizens only need to visit one place for everything, including participation. However, such integration does not only take place at the **front-end**; at the **back-end**, too, this would ideally mean that data from different departments is accessible and interoperable, so that coordination costs can be limited. *(Referenced by 1 source)*

- The possibility to provide **multi-lingual input and support**. (*Referenced by 1 source)*

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Finally, one needs to be wary that **what is appreciated and what is considered missing**, and hence desirable, **can**, at times, **be at odds** with one another. Creating opportunities for anonymous digital participation (often assumed to lower the participation threshold) is, of course, at odds with the request for more user authentication and contribution transparency. It might be possible, however, to devise solutions that provide identification for back-end purposes while preserving front-end anonymity. Nevertheless, caution is advised. It has been shown, for example, that while anonymity encourages, in particular, the seldom heard to participate (Baek et al. 2012), it may affect the quality of interaction (Elstub et al. 2021). Research by Moss and Coleman (2014) in a UK context, for example, shows how anonymous contributions can cause discussions on citizen platforms to rapidly lapse into ridicule, verbal insults, and even racism. It is unclear whether back-end identification alone will be sufficient to prevent this.

What about the expectations of respondents without digital democracy (n=22)? **Table 3.3** shows the **features** those respondents would implement in a **future tool**. Again, we observe a strong emphasis on user-friendliness and equal opportunities for participation, supported by background information and content, as well as language facilities. Notably, a provision is also mentioned (i.e., the direct deliberative function), which, based on Figure 3.3, appears to be less of a priority.

Table 3.3 Digital tool features desired by respondents without digital citizen participation experience, presented in order of reference frequency within each category (n=22)

Description of the desired feature or feature characteristic
• A tool that is **secure and user-friendly** (both front-end and back-end), implying it is **simple and clean yet attractive**. Ideally, also multi-lingual. *(Referenced by 6 sources)*
• A **well-thought-out design** so **that** the input received is of high quality and **can inform policymaking** (e.g., a question on hypothetical subsidy uptake to inform budget measures, as this information allows an estimate of how many there will be, and hence the budget that will be required to accommodate the requests). *(Referenced by 3 sources)*
• Empowerment through the **integration of background materials and information,** allowing participants to consult documents, bibliographies, videolibraries, and other information formats in an accessible and learning-preference-accommodating way. *(Referenced by 2 sources)*
• A tool for **AI-powered reporting of local incidents and for adequate follow-up**. By simply taking a photograph of a broken bench, a litter bin, a fallen tree branch, a problem with the pavement or a kerb, AI can identify the type of incident, assign it directly to the responsible municipal authority, geolocate it, and allow citizens to follow up on the reported incident. *(References by 1 source)*
• A **two-way interaction or feedback module** to respond to citizen queries and/or complaints and report back. *(Referenced by 1 source)*
• **Deliberative functions** where people can meet in real time via camera to discuss their ideas and opinions. *(Referenced by 1 source)*
• A **'One-stop shop'** in which the digital tool makes just one tile within an integrated local public services application—ideally also interconnected with higher level services. *(Referenced by 1 source)*
• **User authentication** is required **to guarantee an equal level playing field**. Without it, interference by political parties and lobby groups always lurks around the corner. In such cases, individuals are allowed to propagate ideas anonymously and on a large scale, potentially taking over the entire discourse on your platform. *(Referenced by 1 source)*
• **Encouraging** active **participation without comprising privacy**. *(Referenced by 1 one source)*

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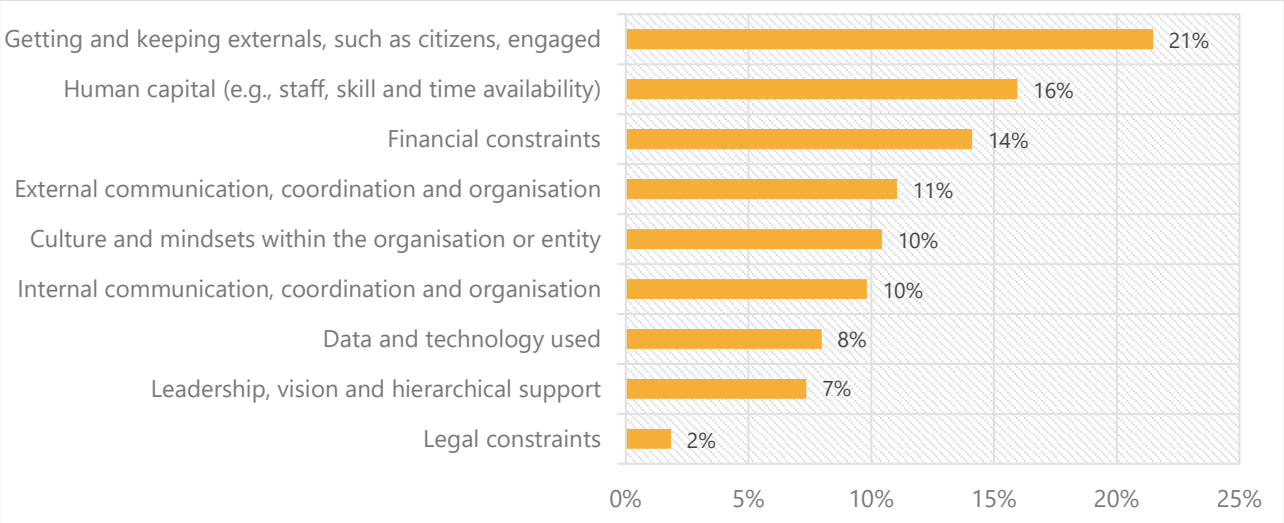
3.4.4 Challenges that come with or keep from digital citizen participation

Figure 3.4 summarises the **challenges** respondents faced when organising digital citizen participation, as well as those preventing them from doing so altogether. The first observation is that these challenges frequently relate to (a) securing and maintaining engagement from external stakeholders, such as citizens, and to the availability of (b) staff, skills, know-how, time, and (c) financial resources.

Figure 3.4 Relative share of challenges experienced in the organisation of digital citizen participation or keeping from digital citizen participation (n=67)



A comparison between respondents active locally and those active at supra-local policy levels revealed no substantial differences and is therefore not presented in this report. **Substantial differences** were, however, observed in the comparison **between those with and without digital democracy experience**. The results of which can be consulted in **Figure 3.5** (cf. infra).

By taking the difference in perceived challenges between these two groups into account, we see that the relative share of challenges related to a lack of staff, skills, know-how, time and financial resources somewhat decreases 'in favour of' challenges related to cultural beliefs and practices within the department, organisation or entity, as well as internal and external communication, coordination and organisational issues. In a sense, this observation is **unsurprising,** since it is precisely these elements on the input side (e.g., sufficient staff and budget) that enable a digital democracy initiative to take off. Only once started, do throughput-related challenges begin to surface. For those without experience, it is only possible to a limited extent to foresee internal and external communication, coordination or organisational problems throughout an initiative. Entrenched or rigid organisational culture, meanwhile, is something they too can struggle with. This does not alter the fact, however, that even those who have previously engaged in digital democracy or are currently doing so can occasionally encounter problems in this regard. For them too, adversities such as high staff turnover, budget cuts or the loss of a key figure in the organisation can pose major challenges. For these reasons, we will discuss the **observed or reported challenges of both groups together**. The complete list is provided in **Table 3.5** (cf. infra).

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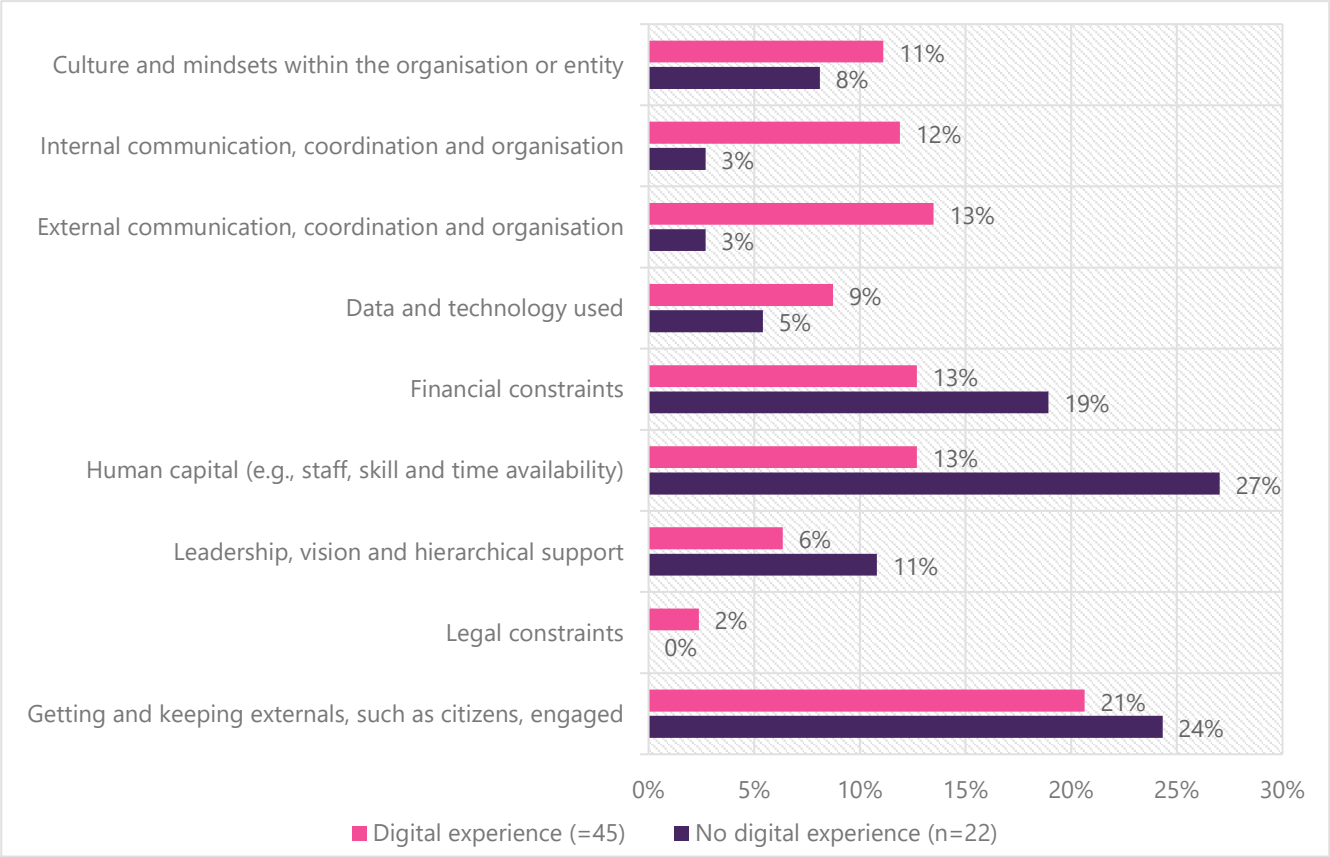
Figure 3.5 Relative share of challenges experienced by those with (n=45) and without (n=22) experience of digital citizen participation (n=22)



When the full descriptions in Table 3.4 are considered, **two things stand out**: (a) the deviation in the number of references per category compared with the percentage distributions shown in Figures 3.4 and 3.5, and (b) the striking similarities between these data and the overview of challenges formulated in the Interdisciplinary Knowledge Base's fourth chapter on open governance (Coenen and Werimo 2025). With regard to the first point, the **deviation in relative importance**, it should be noted that we imposed no restrictions on respondents in the open-ended follow-up questions. In the analysis, we noticed that when respondents indicated one or more challenges and were then asked to clarify them, they sometimes described situations that were more closely related to another challenge (e.g., challenges in reaching citizens often revealed a story of inadequate external communication, such as not knowing what or how to communicate). In the table below, however, these were summarised in the appropriate category after careful inspection.

With regard to the second point, the **similarity with prior Interdisciplinary Knowledge Base findings**, we see many challenges in coordination, communication and organisation (e.g., poor internal coordination, insufficient follow-up, knowledge exchange, support, and monitoring), the availability of human capital (e.g., a need for more staff and time, greater awareness and expertise) and, financial resources recurring.

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Table 3.4 Challenges and/or barriers encountered by the respondents in the organisation of citizen participation, or those keeping them from doing so, presented in order of frequency of occurrence within each category (n=67)

Challenge	Description
Human capital (availability of staff, skills and time)	• **Too few and continuously available staff, auxiliary measures** (e.g., flexible planning), **means and resources**. Yet, staff shortages and turnover slow down processes and can cause that the full potential of particular tools are not being used despite them being expensive. *(Referenced by 12 sources)* • **Insufficient knowledge** (e.g., to work with a digital platform), **qualification and target group experience** (e.g., working with minors, people with disabilities or disadvantaged communities in remote areas). An initiative often stands or falls on the strengths and weaknesses of individual team members, with no safeguards in place. *(Referenced by 7 sources)* • **Insufficient time to (re)skill, get to know and try new methods** to run participation processes to the fullest. Things are often rushed through while some steps (like developing methodologically sound questionnaires, sending out post invitations and waiting for a paper questionnaire to return) require time. (*Referenced by 5 sources)* • **Insufficient analytical and feedback capacity**, particularly when citizen input is vast. (*Referenced by 4 sources)* • Sufficient **staff** in the strict sense yet completely **overloaded or overburdened** with other things. *(References by 1 source)*
External communication, coordination and organisation	• **Difficulties in reaching a diverse audience** that is **representative of the target population** (e.g., at European level, a nice country dispersion), also including the non-usual suspects that might be harder to reach because they don't tend to 'consume' the social media on which events are often advertised or because they are digitally less literate. *(Referenced by ten sources)* • **Difficulties in determining what the message** to convince citizens to participate **should contain content-wise**—how to communicate effectively and carry out that message sufficiently? *(Referenced by seven sources)* • **Difficulties in determining which channels and/or tools are most effective** to reach citizens and ensure their participation. According to the respondents this proves particularly difficult when using a rather anonymous and remote platform. *(Referenced by six sources)* • **Difficulty with developing a transparent and clear line of communication** that can avoid conflicting expectations and dissatisfaction over how the participation process is run (e.g., there will always be citizens you can explain a hundred times what is expected and will happen to their input and still expect the final outcomes to 100% represent their sole opinion). *(Referenced by two sources)* • **Difficult balancing exercise** to determine what the organisation and staff should do themselves and **what to outsource** (e.g., when developing background materials, a unique project brand or story). *(Referenced by one source)* • **Limited channels available** to communicate with citizens (e.g., only Facebook updates possible). *(Referenced by one source)* • A lack of **effective two-way feedback mechanisms** between citizens and the organiser. *(Referenced by one source)*

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Financial constraints	• **Limited to no budgets to fund projects within the organisation or department** (e.g., not possible to organise a participatory budget when no resources have been allocated within the general budget even though there is money available to organise citizen participation *an sich*). Budgetary tightness that restricts the invitation of experts, attending of training, courses, workshops and options for more advanced technological tools, also restricts the quality of citizen participation designs and inclusion measures (e.g., the ability to provide physical assistance), the attractiveness and creativity of content as well as dissemination capacity. Basic functionalities reduce the impact of participation. (*Referenced by fifteen sources)* • Dependency on **free, less fancy, limited or limiting tools** for citizen participation. *(Referenced by five sources)* • **Lengthy, tough and staff intensive procedures for** obtaining **external funding** that also tend to overlook small local concerns in favour of large projects. *(Referenced by two sources)* • Dependency on authorities due to a **lack of own resources**. *(Referenced by one source)*
Getting and keeping external stakeholders engaged	• **Difficulty in upscaling and sustaining citizen participation outputs and outcomes**. How to secure and maintain good contacts, enthusiasm and artefacts in the long term—definitely when a project dwells on for a long time, results are not directly observable and no frequent communication or updates happen. *(Referenced by seven sources)* • Persistent questions on **how to reach** citizens who are **not connected, disinterested, disenchanted, distrusting or misinformed**. Some people simply don't care but that doesn't mean their opinions are of less value and these people should simply be forgotten. *(Referenced by six sources)* • Difficulty **getting and keeping vulnerable groups engaged** (e.g., minors, people with disabilities, migrants, ...). *(Referenced by three sources)* • **How to teach citizens** what civic participation actually is and what it could signify for their lives? *(Referenced by one source)* • **Discrepancy between** the **number of passive users** on a platform, the lurkers, **and those who actually contribute**. *(Referenced by one source)*
Culture and mindset within the organisation or entity	• **Participation** is sometimes **regarded as an additional task or obligation**, a one-off event or something that comes on top of all else (e.g., the involvement of citizens in spatial planning when required by law), **rather than** a **strategic and inherent tool to strengthen policymaking and service provision** and, with the intrinsic ability to ameliorate citizen connection and trust. *(Referenced by six sources)* • Citizen participation is often **hijacked** by politicians or senior civil servants **to window-dress or push through something** within the administration, backed-up by 'citizen support'. In the latter case, citizen participation **processes** are **designed with the outcomes already in mind**. Citizen input that does not fit this pre-defined set-up is disregarded, only causing frustration and a blow to oftentimes already low trust levels. *(Referenced by three sources)* • A **lack of culture in organising citizen participation and**, consequently, **success stories**. Even when allowed, citizens hardly respond because they are not used to being asked and don't trust it will be useful. There is a risk of a **vicious circle** emerging when, due to limited input, politicians decide to disregard the results of the participation process on the grounds that "they are not sufficiently representative". This can, of course, further undermine the public trust required to engage in the first place. *(Referenced by three sources)* • Organisation or staff members that **oppose the use of** too much **technology** and refuse to see the added value. *(Referenced by two sources)*

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Culture	• Citizen participation often changes the usual way of working **and anything that disturbs routine meets with resistance**. *(Referenced by two sources)* • Citizen participation, online or offline, is **not a priority** in the public entity. *(Referenced by one source)*
Internal communication, coordination and organisation	• **Insufficient clarification of roles** (who does what exactly, by when, how, why and who should know about it?) **and monitoring strategies** (e.g., intermediate feedback and discussion tables). *(Referenced by four sources)* • **Insufficient internal coordination** (e.g., on which tools are used across departments, for what reasons and how they can possibly be integrated), **knowledge sharing and learning opportunities** (e.g., on how to deal with a digital divide as everyone is doing whatever they can to support citizens, creating fundamental inequality whereby some citizens are better helped than others yet easily preventable when these rich experiences can be shared within the organisation). *(Referenced by three sources)* • **Insufficient guidelines or standards** on how to do citizen participation, providing handles to people internally. *(Referenced by three sources)* • **Marooned participation teams and responsible(s)** that have great difficult to convince other departments to go along with their ideas. *(Reference by two sources)* • **Siloed organisations** with little uniformity in methods and tools used across departments to engage citizens, **causing fragmentation**. *(Referenced by one source)* • A lack of **clearly defined goals and** consensus on **how to achieve them**. *(Referenced by one source)* • **Insufficient strategic planning** to make citizen participation more of an inherent and continuous process rather than a one-off event. *(Referenced by one source)* • **Conflicting goals and expectations** (e.g., a willingness to reach as big an audience as possible while being inclusive, yet the second objective requires you to work in a small-scale, targeted and tailored way). *(Referenced by one source)*
Data and technology used	• A notable **shortage of technical expertise, self-efficacy and resources** on the side of **citizens**. *(Referenced by three sources)* • **Insufficient user-friendliness**, both from a front-end as well as back-end perspective. *(Referenced by three sources)* • **Technical glitches** that can cause biased (e.g., a temporarily suspended identification requirement on a platform causing an influx of baseless complaints and absurd proposals) or lost data (e.g., temporarily no recordings). *(Referenced by two sources)* • Not always easy to **reuse or repurpose data** that has been collected in citizen participation. *(Referenced by one source)* • **Insufficient back-end support for meaningful data-analysis**. *(Referenced by one source)* • **Anonymity causes a tension between ease of use and the reliability of the results**. You cannot always demonstrate that the participants are a good reflection of the entire population. *(Referenced by one source)* • Some people become **overwhelmed by the large number of entries or new comments** and drop out. How can you keep this overview clear and prevent them from dropping out? *(Referenced by one source)*

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Leadership, vision and hierarchical support	• A **lack of (approved) vision** for involving citizens **as well as monitoring instruments to follow-up on that vision**. Ideally, there is no room for ad hoc interpretations and those in leading positions model the behaviour they wish to see in their staff members (i.e., one cannot hail the added value of participation externally and then internally lapse into micro-management—a vision must be a lived reality throughout the organisation). *(Referenced by five sources)* • Citizen participation, online or offline, is interpreted very narrowly and verges on tokenism due to cold feet at the political level. They often **lack** the **courage and leadership to truly empower citizens**. *(Referenced by two sources)* • A **lack of leadership altogether** in the organisation—everyone minds their own affairs, and few real decisions are made. *(Referenced by one source)*
Legal constraints	• **Privacy legislation**, particularly GDPR, **hinders the realisation of** ideal citizen participation **or a perfect plan on paper** (e.g. authentication based on national registration numbers appears to be difficult because of which people from outside the municipality can vote too while others can vote twice or more). *(Referenced by two sources)* • **Legal restrictions** (including those concerning the type of stakeholders you must legally consult in the process) can significantly **slow down participation processes**. *(Referenced by one source)*

Given the similarities, our **data amplifies prior research** on the perceived challenges of organising digital democracy (a core aspect of open governance). Some recommendations or coping strategies highlighted in that chapter will therefore also be relevant to the challenges presented in this Digital Democracy Preference Toolkit. That is precisely why it is remarkable to note that one of those explicit recommendations is hardly touched upon in this data, namely, the use of **gamification elements** to make digital democracy more (visually) attractive and engaging. Only one respondent referred to it as a feature (s)he appreciated in Section 3.4.3. Whether this implies that the potential of gamification is not well known or simply goes unnoticed, we cannot tell. Gamification elements such as collaboration, competition, personalisation and storytelling are, however, increasingly studied for their potential to enhance citizens' participation and sense of enjoyment (see, for example, Simonofski et al. 2022). Though one should be aware that not every gamification feature is suitable for each type of citizen, nor for every task or requirement (White et al. 2023). Requirement analyses and the development of citizen personas (e.g., Schelings et al. 2020; 2023; Simonofski et al. 2022) can support design processes and optimise public entities' ability to retain citizens—only they themselves still need to be made aware, so it seems.

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3.4.5 Visions for the future of digital democracy tools

This **fifth and final analysis section** focuses on the **desirable** characteristics of **future** DDAs—insofar as these could not already be deduced from the challenges outlined above. We link these characteristics to the objectives that DDAs should ideally serve. We conclude with a brief reflection on how to measure, monitor and consolidate those future objectives and their results, even though we by now found that developing adequate measurement tools and adopting a robust monitoring strategy can be challenging for many administrations and organisations (see Coenen and Werimo 2025 and the section above).

Before we discuss desirable characteristics and objectives, we remind the reader of the results presented in Section 3.4.2. In this section, Figure 3.3 already provided a clear comparison between current citizen involvement and how public entities would like to involve citizens in the future. For **activation methods** that require greater citizen involvement and more substantive or in-depth participation, there appeared to be considerable room for improvement. An example is co-production, where citizens actively help their administration(s) improve services by reporting public defaults. Regarding support (i.e., the ability to access or request supporting information and/or data) and keeping citizens informed about project updates and their proposal status too, there is still progress to be made, according to our respondents.

Table 3.5 Descriptive statistics concerning future DDA statements (n=51)

ID	Statement item	Mean	SD	Min	Max
4	Everyone who uses the tool should be saved from harm and, false or hateful contributions.	1.69	.735	-2	2
8	In organising citizen participation effectively, it is essential to create a consensus on mutual stakeholder expectations and be transparent about the precise course of action.	1.53	.612	0	2
2	Citizen participation is a worthwhile activity to organise because it adds to our policymaking.	1.43	.728	-1	2
7	In organising citizen participation, trust in the digital tool, its privacy and security settings plays a vital role.	1.33	.792	-1	2
3	Citizens should be able to express themselves freely on a digital participation tool.	.88	1.032	-2	2
6	To ensure the smooth running of the digital participation initiative, it is best for citizens and employees to be able to communicate with each other (synchronously or asynchronously).	.86	.904	-1	2
1	Citizen participation can remain purely advisory in nature. Citizens do not need to be given decision-making power.	- .02	1.304	-2	2
5	It should be allowed to remain anonymous when participating in the application.	- .04	1.199	-2	2

Legend. 'SD' = standard deviation; 'Min' and 'Max' respectively denote the lowest and highest recorded scores per question item among respondents with scale items corresponding to '-2 = totally disagree', '-1 = rather disagree'; '0 = nor agree, nor disagree'; '1 = rather agree' and '2 = totally agree'.

Considering **Table 3.5**, which lists **desirable characteristics of future digital democracy**—and, consequently, DDA designs—we notice that the last two statements receive markedly less support (i.e., mean scores below the neutral 'nor agree, nor disagree' point). Opinions are also clearly divided

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(i.e., standard deviation scores well above one scale point) on whether it should be possible to navigate a DDA anonymously. Here, to a certain extent, we again encounter expectations that appear to be at odds. For example, while respondents, on average, agreed that everyone on a DDA should be protected from harm and from false or hateful comments (M = 1.69), and that such protection should not limit or restrict one's freedom of expression (M = .88), the removal of anonymity is not wholeheartedly embraced as a solution. Yet, identification and/or authentication were repeatedly proposed in previous sections as possible solutions and missed features.

There is considerable consensus on the value of (digital) citizen participation for policy implementation and service provision, as well as on the importance of transparency and trust in the security of DDAs. This appears to be much less the case for the statement "**Citizen participation can remain purely advisory** in nature. Citizens do not need to be given decision-making power". In fact, this appears to be the **only statement** for which the independent sample T-tests revealed **significant differences** between our **local and supra-local** respondents ([t(9.515) = 3.586, p = .005]) and between those **with and without experience** ([t(49) = 3.025, p = .04]) in organising digital democracy initiatives. Accordingly, supra-local respondents (M = -1.17) attach greater importance to citizen participation that has an impact and moves beyond the advisory than their local counterparts (M = .13). The group without experience of digital citizen participation, but perhaps with experience in offline participation, also opposes limiting participation to providing non-binding advice (M = -.68 vs. M = .38). Engaging citizens offline certainly requires considerable effort, and you do not want to risk people dropping out because there is too little at stake (Fung 2015) or because the invitation to participate is not genuine (Bovaird et al. 2016; Craig et al. 1990).No such differences were apparent across the other statements. This again leads us to suspect that respondents' expectations and concerns across different policy levels do not differ fundamentally, and that the INNOVADE results may be scalable.

Figure 3.6 (cf. infra) examines the **objectives DDAs should** ideally **support** in future. Respondents could select as many options as they wished for this question, and they embraced this opportunity. Each objective received considerable support, with (a) improving citizen access to and use of public amenities or services, and (b) citizen satisfaction with those; (c) increasing transparency and (d) citizen trust in public processes, actors and/or democratic institutions, as well as (e) generating novel ideas or innovative solutions to societal problems, emerging as the apparent frontrunners. The ratio of yellow to blue bars further indicates no pronounced difference in opinion between respondents representing local and supra-local authorities, entities or organisations. Only with regard to citizen empowerment is the ratio somewhat more skewed: supra-local respondents seem to attach slightly more importance to future digital citizen participation that effectively educates citizens and strengthens their voice in policymaking. DDAs would, therefore, do well to provide the necessary capacity for this.

A **comparison of the frequencies** with which (a) those experienced in organising citizen participation through DDAs (n=32), (b) those with experience in solely offline participation (n=14), and (c) those without any such experience (n=5) chose particular objectives revealed **several interesting variations on the perceived ideal**. **First**, the weighted Chi-square test shows that, on average, respondents with only offline experience emphasise cost-efficiency more often than expected ([χ^2(2) = 15.283; p < .001]). A potential explanation is that this subset of our sample regards DDAs as a low-cost alternative or supplement to their resource-intensive offline approach. **Second**,

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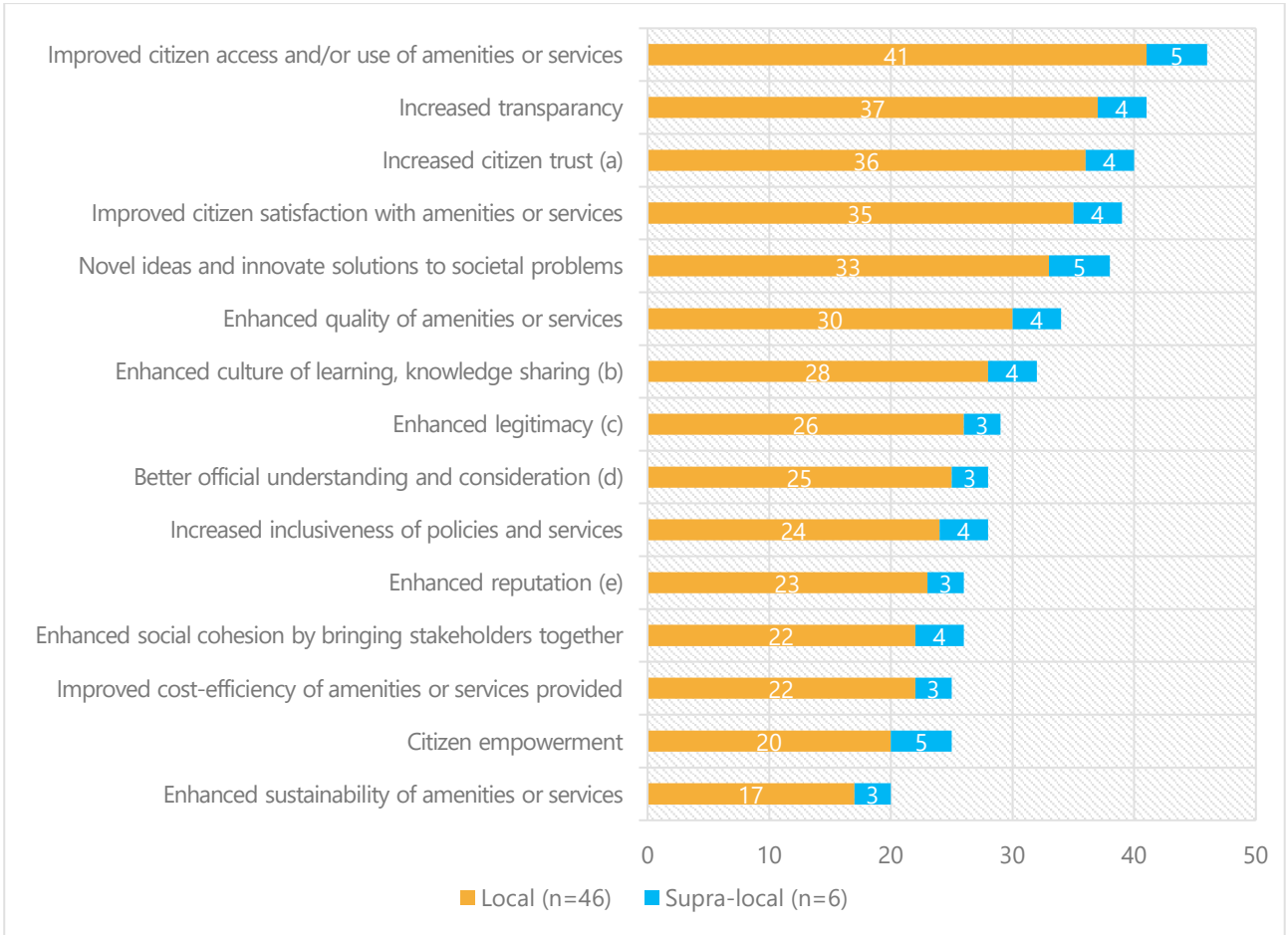
the test also highlighted significant differences between expected and observed values for the no-experience respondent group when it came to:

- … increasing transparency ([$\chi^2(2) = 15.923$; $p < .001$]).
- … increasing citizen trust in public entities, policymakers and/or democratic institutions ([$\chi^2(2) = 9.741$; $p = .008$]).
- … enhancing the legitimacy of decision-making and/or service provision processes and their outcomes ([$\chi^2(2) = 8.236$; $p = .016$]).
- … generating a better official understanding and consideration of citizen needs and preferences in policymaking and service delivery ([$\chi^2(2) = 7.688$; $p = .021$]).

These findings suggest a **learning or awareness effect**. Thanks to their experience of citizen participation, whether offline or online, organisers seem to have a stronger conviction about which objectives can and should be served. Organising citizen participation, however burdensome or frustrating at times, therefore seems to be a fertile basis for an ambitious digital future. For those without this kind of experience, expectations of increased transparency, trust, perceived legitimacy, and an official understanding of citizen needs and preferences remain rather tempered. They have, of course, never been able to observe these benefits, however modest.

Figure 3.6 Number of times a potential outcome of future digital democracy was indicated desirable (n=52)



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Note (a). Full item description read: "Increased citizen trust in public entities, policymakers and/or democratic institutions". Note (b). Full item description read: "Enhanced culture of learning, knowledge sharing and co-creation among stakeholders". Note (c). Full item description read: "Enhanced legitimacy of decision-making and/or service provision processes and their outcomes". Note (d). Full item description read: "Better official understanding and consideration of citizen needs and preferences in policymaking and service delivery". Note (e). Full item description read: "Enhanced reputation as an accessible, trustworthy, and inclusive public organisation".

Although just shy of significance, the difference between the offline experience group and the two other groups regarding the social cohesion objective ([$\chi^2(2) = 5.897$; $p = .052$]) cautiously suggests a learning or awareness effect as well. After all, this group can better estimate than any other what social cohesion entails in bringing people together for collaboration, debate and exchange—something that is much more difficult to promote via anonymous and remote DDAs (e.g., Bartoletti and Faccioli 2020; Jarke 2019).

Finally, we asked respondents with digital democracy experience (a) how they would **measure and monitor** these **objectives in the future** and (b) whether they were already using a similar system. The descriptions emphasised the need for appropriate indicators tailored to the objectives and context, user-friendly reporting tools or systems, and stakeholder inclusion to provide a 360° perspective on progress, outputs and outcomes. As expected, almost half of the respondents (46%) reported that they currently did not use anything like what they described. Another 38% indicated they were engaging in some form of monitoring, but it didn't entirely match their description. For only four respondents (16% of the remaining sample), it did. Section 3.4.4 already identified the **lack of** sufficiently clear roles and **follow-up mechanisms** as the main challenge in the category "Internal communication, coordination and organisation". The lack of sufficient knowledge sharing and learning opportunities (the second most frequently mentioned challenge within the same category) also reflects inadequate follow-up. After all, when this happens frequently and runs smoothly in an open and safe environment, it automatically creates opportunities for colleagues to exchange good examples and learn from each other's experiences. These processes themselves can then become the subject of even better monitoring, which, following Plan, Do, Check, Act (PDCA) models, can lead to the creation of a robust system of process improvement ("Plan, Do, Check, Act (PDCA) — A Resource Guide," n.d.).

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3.5 Conclusion

Throughout this chapter, we explored governmental actors' expectations and preferences regarding current and future DDAs for citizen participation. To this end, we questioned 68 European public officials and political mandate holders about (a) their current tool use, (b) the activation methods those tools support, (c) how they evaluate tool features, (d) the challenges they perceived in organising digital citizen participation, and (e) their visions for a desired future.

The online-administered questionnaire first revealed a **gap between what citizens can currently do** with or on the tools used (i.e., the so-called activation methods) **and (potential) organisers' aspirations for future use**. In this regard, allowing citizens to comment or give feedback on proposals may become less important in favour of more in-depth participation, such as co-design and co-production of public policy and services with fellow citizens and the administration. However, to achieve this, current practices regarding tools and their potential offline or alternative online supplementation (e.g., social media) will need to be critically reviewed. At present, the use of surveys and ideation platforms seems to predominate. To work in depth and effectively encourage citizens to co-design and co-produce, it seems appropriate to make stronger or more frequent use of what seem more exotic applications, such as open-source collaborative mapping tools or open data portals. These can, for example, allow citizens to scrutinise government spending and legislative work—at least when they are sufficiently well-versed in using those tools and interpreting the data provided. Therefore, ideally, tools are supplemented, more so than is currently the case, with supporting information and activities to empower citizens and strengthen recognition and engagement. **Participation intermediaries**, a variant of the data intermediaries frequently mentioned in the Interdisciplinary Knowledge Base, are a noteworthy concept in this context. In both human and technological forms (e.g., a data scientist serving as a participation process coach versus a help function or dashboard tool on a platform), these intermediaries enable the bridging of the gap between public organisations and citizens who lack civic, digital, and data literacy. This inclusion narrative appears to be quite important to our respondents. However, a range of other desirable objectives or outcomes of digital democracy also emerged. In this, improved citizen access to and/or use of public amenities or services, increased transparency, and citizen trust in public entities and processes were the three most strongly desired outcomes.

In sum, expectations for DDAs appear high, but this requires changes to the available options and the way public entities use them. **This chapter** therefore specifically **recommends that DDA designers or developers …**

- **… always consider ease of use** from both front-end and back-end perspectives.
- **… opt for** a flexible design with **PnP building blocks and customisation options**.
- **… challenge organisers to try new activation methods** (less focused on commenting and ideation, and more on in-depth work).
- … **ensure** a **user authentication** system that does not impose barriers to accessibility.
- … **include automated moderation and data analysis** functions.

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- **… integrate** a **social media** link so that communication can take place smoothly across various outlets or channels managed by the organiser.
- **… allow for a design** that leaves sufficient room **to supplement with offline participation methods**, as these often serve different objectives and can increase inclusion and engagement because it provides the initiative a human touch.
- **… present a budget-friendly product that** poses solid competition for prevailing market prices, and which **complies with all legal requirements** (including those relating to privacy and data protection) so that contracting authorities or organisations are not faced with any surprises.

The reader will notice that each of these recommendations is firmly grounded in DDAs as a technology and design model. However, in line with the challenges outlined in Section 3.4.4 and the Interdisciplinary Knowledge Base (see Chapter 4 by Coenen and Werimo 2025), **public entities will also need to step up their game**. After all, internal communication, coordination and organisation remain sensitive issues, as does securing sufficient (qualified) personnel and financial resources. To compensate for this scarcity of resources, it is best to create a solid learning environment in which best practices and valuable experiences can be exchanged in a climate of safety and openness, and progress, concerns and frustrations can be discussed regularly and addressed in a timely manner. Public services are increasingly required to operate with more limited resources, but rather than remaining passive, creative solutions can be sought. The benefits of citizen participation for innovative and quality policymaking and service delivery are, after all, recognised; it is simply a matter of getting started.

Finally, we briefly address the **limitations** of this sub-study. Despite considerable efforts, our final sample size of 50 fully completed responses remains small. Moreover, the sample is characterised by representation imbalances, as respondents active at provincial, regional, national or European policy levels were far fewer than those active locally. Although no clear differences were observed between these two subsets in our sample, this may be due to the limited basis for comparison. However, we found differences among our respondents based on their experience with digital citizen participation. Larger sample sizes per group would, nevertheless, have increased the certainty and depth of our analysis. It would therefore be interesting if future research could replicate these results on a larger scale. Ideally, this would also be done using a sample that is more representative of the European population. After all, the insights outlined above were derived almost exclusively from Belgian and Spanish respondents at the local level. However, given its exploratory design and that the INNOVADE DDA will be tested there, this does not, for now, appear to constitute a major problem.

Lastly, it should be noted that at least 66% of respondents represented an executive rather than their administration. This has undoubtedly led to a distortion of the results regarding perceived challenges. After all, as mandate holders, they themselves are responsible for the culture and mindset within an organisation, as well as for demonstrating sufficient leadership.

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4 Conclusion

What common grounds can we now identify in the expectations and preferences of both citizens and governmental actors involved in organising (digital) citizen participation as presented through the above chapters? Were there areas where the two contradicted one another? Or, where one mentioned interesting points that the other did not? In the following paragraphs, we briefly outline **the points on which** both **actors agreed, disagreed and ultimately complemented each other.** These insights are then translated into tangible design recommendations.

First, citizen and governmental perspectives on digital democracy tools align closely on the fundamental shift from symbolic consultation to actionable participation. Both groups emphasise that technology should move beyond mere ideation to deliver real, visible outcomes in local decision-making. There is also a strong consensus that transparency and trust are critical objectives for any DDA. Furthermore, both stakeholders advocate hybrid participation models that integrate digital tools with offline formats to ensure inclusivity and maintain a human touch. Features such as reporting local issues (e.g., broken infrastructure) are highly valued by both sides as concrete, action-oriented functionalities. Finally, both groups are concerned about flawed results stemming from biased representation and security risks, including misinformation, data manipulation, and hacking.

Second, while citizens are divided on the issue of anonymity, with some prioritising privacy, governmental actors strongly favour robust user identification to prevent bot manipulation and harmful contributions. Additionally, citizens express a deep need for human support when digital systems are difficult to navigate and when topics that invite participation are difficult to stomach. While governments certainly want to provide this human support, in some areas they are considering even more technology, in the form of AI, to manage large-scale data analysis and automated moderation, to compensate for staff capacity issues.

Third, some elements were unique to each group's discourse and could complement one another. Citizens highlight the potential of gamification elements, such as rankings, to enhance engagement by making participation more enjoyable. They also place greater value on peer-to-peer discussion and interactive spaces where they can deliberate directly with fellow citizens. Conversely, governmental perspectives focus heavily on back-end administrative requirements, such as the need for PnP building blocks, flexibility for customisation, and automated data analysis.

Accordingly, the design of a **digital democracy app (DDA) should ideally**:

- **… consider ease of use** from both front-end and back-end perspectives.
- **… opts for** flexibility with **PnP building blocks and customisation options**.
- **… challenge organisers to try new activation methods** (less focused on commenting and ideation, and more on in-depth work) **by centring on a small set of high-value features**:
    - Reporting local issues and problems, with clear tracking of their resolutions.

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  - Voting or rating on concrete proposals and options.
  - Providing structured feedback channels for specific projects or policies.
  - Offering transparent project dashboards that show progress and decisions, and clarify the link with citizen input.
- … **deliver strong feedback and transparency by design**, thereby …
  - … providing immediate confirmation of participation and accessible summaries of citizen community input.
  - … clarifying explicitly and in plain language how inputs were (not) considered and the decisions that resulted.
  - … making aggregation and moderation rules publicly available and comprehensible.
- … **ensure** a **user authentication** system that does not create barriers to accessibility.
- … **include automated moderation and data analysis** functions.
- **… integrate social media** in a way that enables seamless communication across the various outlets or channels managed by the organiser.
- **… ensure** that the **public organiser can be identified in a clear and recognisable manner**, albeit possibly in partnership with trusted non-profit or open-source organisations.
- **… allow** sufficient room for organisers **to supplement with offline participation methods and citizen support**, as these often serve different objectives and can increase inclusion and engagement by providing the initiative with a human touch.
- **… present a budget-friendly product that** poses solid competition for prevailing market prices and **complies with all legal requirements** (including those relating to privacy and data protection), so that contracting authorities or organisations, and citizens, are not faced with any surprises. To this end, DDA design clearly explains data protection measures, security safeguards, and how misuse (e.g., bots or coordinated manipulation) will be prevented or mitigated.

In summary, there is no silver bullet approach to DDA development: various options are possible, and preferences often appear to be context-dependent. Throughout this study, however, we have tried to identify key preferences and needs from both citizen and governmental perspectives. **With these** insights, translated into **recommendations**, **we hope that those already working on digital citizen participation can further grow their ambitions and that those not yet doing so can overcome their reservations**. The first step is the hardest, but also very enriching, as it turns out.

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