

Understanding the Imagined City: Exploring How Decision-Makers Can Make Sense of Citizens AI Generated Urban Imaginaries in Citizen Engagement

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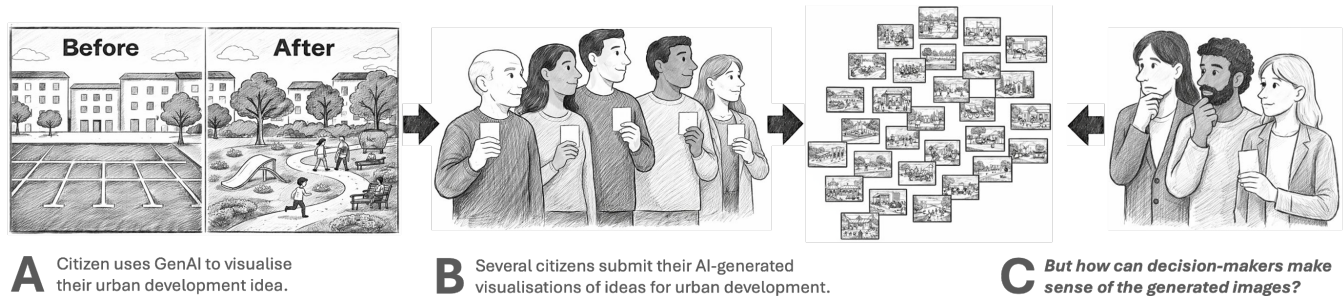


Figure 1: The potential of citizens using GenAI to visualise urban development ideas has been explored within the HCI research community (Frame A). However, little is known about what happens when citizens submit multiple inputs (Frame B) and specifically how decision-makers can make sense of these visual urban imaginaries (Frame C). This paper explores how experts evaluate the use of GenAI in citizen participation, how they can make sense of such urban imaginaries to derive actionable outcomes, and in which contexts this approach can be meaningfully applied (Visual elements were AI-generated using DALL-E from OpenAI [33]).

Abstract

Generative artificial intelligence (GenAI) enables image creation and modification through prompts. Prior research has explored the use of GenAI to support citizens in visualising their ideas for urban development, a concept introduced in this paper as *urban imaginaries*. Although GenAI holds the potential to foster participation and creativity, there is little research on how decision-makers can turn such urban imaginaries into actionable outcomes. To address this gap, interviews with experts (N=21) in urban design, participatory approaches, and municipal administrations were conducted. The findings reveal reflections on the use of GenAI for participatory urban planning, the limitations of relying solely on urban imaginaries, and the contextual data considered essential for decision-making. Building on these insights, this paper outlines implications for identifying when and how urban imaginaries can be meaningfully integrated into participatory urban planning. These implications aim to support decision-makers in understanding citizens' needs and translating their visions into meaningful action.

CCS Concepts

• **Human-centered computing** → Empirical studies in interaction design.

Keywords

Urban Planning, Citizen Participation, GenAI, Decision-Makers, Sensemaking, Participatory Design

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1 Introduction

In recent years, the trend towards the explorative use and research of generative artificial intelligence (GenAI) image processing tools in participatory design [55] and specifically in citizen participation can be observed [18, 21, 27, 37, 39, 40]. Research shows that such tools enable citizens to visualise their abstract ideas and needs into a high quality image based on a few written prompts [27, 37]. Further, findings indicate that these generated images can stimulate creativity, spark discussion and enhance engagement with urban challenges [21, 39, 40]. In addition to these qualitative advantages, research highlights the potential of GenAI to attract more citizens



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quantitatively leading to a increase in citizen engagement and consequently also to a higher volume of visual idea submissions [37]. This paper introduces this approach as *urban imaginaries*. Beyond explorative research, start-ups and tools such as *Wild Street* [50] and *UrbanistAI* [54] are already deploying the concept of *urban imaginaries* in custom applications and pilot projects, for example through map-based citizen science collections [54] and co-design workshops with children [53], indicating that these practices are beginning to take place in real-world settings.

However, research has primarily focused on the opportunities of the GenAI usage from a citizen perspective (Figure 1; Frame A). As a result, we lack an organisational perspective that considers how decision-makers perceive the use of citizen-generated images and how they can engage in *sensemaking* [10, 16, 58] to derive actionable insights from numerous and diverse idea submissions (Figure 1; Frame B & C). Beyond the challenge of managing a potentially larger volume of idea submissions, each generated image represents the outcome of an iterative process carried out by a citizen [37]. Consequently, the reasoning behind visual choices such as why certain elements were included, revised, or omitted remains unclear, as this information is not conveyed alongside the submitted images [37]. This lack of contextual information limits the holistic understanding for decision-makers and highlights the need for facilitation and mediation in participatory processes. Although the exploration and use of urban imaginaries is currently emerging rather than widespread, it is important to understand when and how such approaches can be purposefully integrated into practice to support actionable outcomes in future urban design and policy making. This leads to the following research questions (RQ):

- **RQ1:** What potentials and considerations do experts in participatory approaches anticipate regarding the use of urban imaginaries in citizen engagement?
- **RQ2:** How can decision-makers integrate and make sense of citizen-generated urban imaginaries in participatory urban development?

To answer these questions, an interview study with experts (N=21) in the field of urban development, citizen participation and participatory design have been conducted. Building on previous work by Preussner et al. [37], several visual idea representations created by citizens in response to an urban development scenario were presented. The experts were asked to reflect on the usage of such an approach in general, but also focusing from an organisational perspective. Specifically, their reflections on the interpretability of such visuals, the information they found missing, and how they would make sense of the collection of submitted ideas were discussed.

The findings reveal how citizen engagement is currently approached and the organisational challenges it entails. Experts emphasised that identifying citizens' needs depends heavily on available resources and municipal maturity, requiring participatory processes to balance meaningful evaluation of citizens' input with resource-efficient reporting. While they highlighted its ability to activate harder-to-reach citizen groups, they also raised concerns about design fixations and the need for careful moderation. For sensemaking, experts discussed strategies ranging from clustering visual elements to prioritising written prompts as more efficiently

analysable data, supplemented by storytelling approaches to contextualise images. More broadly, the findings underscore that HCI research has a valuable role in supporting organisational perspectives and advancing digital capacities, making clear that citizen engagement cannot be viewed from the citizens' perspective alone.

Contribution: This paper contributes empirical insights [59] from expert interview study (N=21) that reflect on the use of GenAI in citizen engagement, as one of the first with a particular focus on how decision-makers can make sense of citizens' AI-generated images that visualise their urban development ideas. Rather than focusing on citizens' creative use of GenAI, which has been explored in prior work, this study foregrounds the structural and organisational factors that limit or enable such urban imaginaries to become meaningful integrated and actionable within existing participation cultures. By contrasting reflections on the potential of urban imaginaries with current challenges in citizen participation, the paper contributes seven key implications that outline the organisational conditions and important considerations under which GenAI-supported urban imaginaries could be responsibly embedded into participatory planning workflows.

2 Related Work

In the literature, the use of GenAI in participatory design is increasingly discussed [55]. The following review examines its application in citizen participation and urban planning, and considers research on sensemaking processes in civic engagement.

2.1 Using GenAI to Promote Citizen Participation

With the rise of GenAI, HCI has explored how these tools can support citizens to create imaginative and situated forms of idea contribution in urban contexts. GenAI has been explored in speculative climate workshops to co-create future scenarios that align participants around collective action [25], and in design fiction to extend the space of possible urban futures when outputs are critically prompted [3]. Complementing this, Rafner et al. [39, 40] explored text-to-image systems to visualise utopian and dystopian futures. Demonstrating how imagery can scaffold discussion and reflection, Guridi et al. [18] argue that embracing “conversational imperfections” within co-creation workshops, as boundary objects [48], can provoke richer dialogue than polished renderings.

Moving from speculation to deployed participation, studies have demonstrated how GenAI lowers barriers for idea contribution and enhances citizens engagement. Preussner et al. [37] conducted a technology probe study to examine GenAI-supported participation and informed the design of the mobile application *UrbAI* for situated ideation. Lützelshwab et al. [27] demonstrated with *CitizenVision* a mobile deployment that enabled citizens to prompt ideas for urban change and share them with community members, achieving higher engagement than a traditional paper-based approaches. Research by von Brackel-Schmidt et al. [56] showed that GenAI can support citizens to overcome visualisation barriers, enabling more inclusive contribution in planning discussions. The adaptation of GenAI has been also explored in tangible and collaborative settings. Noyman and Larson [32] demonstrated with

DeepScope a real-time generative cityscape visualisation with a tangible interface for multi-participant sessions. Additionally, Reuter et al. [42] showed within a museum setting with *Urban Uchronia* a projection of AI-generated alternatives onto a physical city model to make planning choices more graspable. Lastly, Hung et al. [21] explored with *iWonder* a mobile application for cultivating playful engagement while addressing citizen concerns.

Together, these contributions indicate that GenAI can lower expressive thresholds, diversify participation groups, and visualise citizens idea in more engaging way.

2.2 Sensemaking in Citizen Participation

Sensemaking in civic engagement depends on how contributions are represented, organised, and interpreted within institutional constraints. Russell et al. [43] describes sensemaking as a cost-structured process in which representational shifts reduce cognitive effort, informing the design of interfaces and analytical tools. To strengthen the relationships and legitimacy, Harding et al. [19] argue that engagement should foreground both citizen and authority perspectives to foster trust rather than citizen centred technology alone. At scale, sensemaking is challenged by volume and diversity of input [43]. To handle these inputs, Münster et al. [31] highlight the need of framing effects, participant selection, and the need for infrastructural support, while Mahyar et al. [29] reports that leaders struggle to analyse large qualitative corpora and would benefit from training and scalable methods.

In this regard, research examined techniques that structure inputs and make interpretation more tractable. Park et al. [35] demonstrated how value-centred scaffolding improves inclusion, shared understanding, and willingness to compromise during convergence, aiding interpretation of community preferences. Overney et al. [34] introduced a mixed-initiative system that helps civic leaders create clearer, less biased prompts for engagement, enhancing downstream sensemaking while raising concerns about agency and AI reliance. Studies of service channels show how interface choices condition interpretation. Public service chatbots have been found to often lack transparency and community perspective, limiting what decision-makers can derive from interacting with them [62]. Dove and Corbett [17] demonstrated how standardised reporting systems shape trust and how authorities act on citizen-reported issues, motivating alternative contributions. Further, visual and analytic support tools to mediate collective interpretation have been studied. Saha et al. [44] showed how interactive map visualisations support stakeholders with varied expertise coordinate urban accessibility decisions and informed design considerations for geovisual tools. Research on co-design by Wang et al. [57] with city staff and residents indicates that concise, visual information and light-weight interactions support analysis at scale, with interest in AI to ease moderation. Further, Ma [28] showed how interactive 3D systems can lower technical barriers for public understanding, facilitating more interpretable exchanges with officials. To bridge the gap from data collection to action requires tools and practices that translate heterogeneous evidence into actionable insights and cultivate deeper engagement [4]. For complex policy terrains, collaborative systems thinking and causal loop diagrams surface tensions and intervention points in data governance, supporting politically aware

interpretation [5]. Attention to power is essential. Participatory data physicalisation reveals how agendas and representational choices shape whose meanings are legible, offering critical considerations for balancing influence in data-driven sensemaking [9]. Critical urban studies caution that the “charisma” of smart solutions can obscure underlying agendas, underscoring the need for reflexive interpretation in planning [52]. Finally, reviews of AI in participatory design note lowered thresholds alongside risks of bias and overreliance, reinforcing calls for careful integration into participatory sensemaking workflows [55].

In summary, the literature frames sensemaking as a challenge of representation, workflow, and power, spanning upstream question design, channel transparency, and visual analytics. Although research has studied different approaches, limited work examines how municipal decision-makers can understand citizens AI-generated images and what organisational supports are required to translate these into accountable decisions.

3 Methodology

To answer the research question, an interview study with experts in urban design, participatory approaches, and municipal administrations was conducted. The aim of the study was to capture experts’ perspective on the use of GenAI in citizen participation, specifically focusing on how they would implement the usage from an organisational perspective and their proposed approach for the analysis of such visual inputs at scale.

3.1 Contextual Background and Procedure

In the work of Preussner et al. [37], the use of GenAI in citizen participation was investigated, from the citizens’ perspective, with a focus on the extent to which GenAI supported them in visually expressing their ideas for urban development. In total, 16 participants engaged in two urban development scenarios, each submitting an AI-enhanced image, resulting in a total of 32 idea submissions. This prior work demonstrated the potential of GenAI to enable citizens to articulate their ideas visually. Building on these findings, the present study used samples of generated images from Preussner et al. [37] as visual probes during the interviews (see Figure 2). Using these probes ensured that the interviewed experts could better comprehend the concept of *urban imaginaries*. By grounding the discussion in tangible examples of GenAI-enhanced citizen contributions, the probes supported a more effective communication of the concept and allowed experts to reflect on how decision-makers can make sense of such urban imaginaries in practice.

The semi-structured interviews were conducted remotely, with each session lasting on average 57 minutes (SD = 8.2 minutes, min = 40 minutes, max = 74 minutes). The interviews were structured into three sections. First, participants were asked to reflect on their prior experience with citizen participation, with a particular focus on the methods they previously employed. In the second section, they were asked to reflect on the use of digital participatory approaches, addressing both the motivations for adopting such methods and, where relevant, the reasons for not using them. In the third section, the idea of applying GenAI in citizen participation was introduced by presenting probes of urban imaginaries. Here, the general approach was presented, in which a photograph of an urban setting

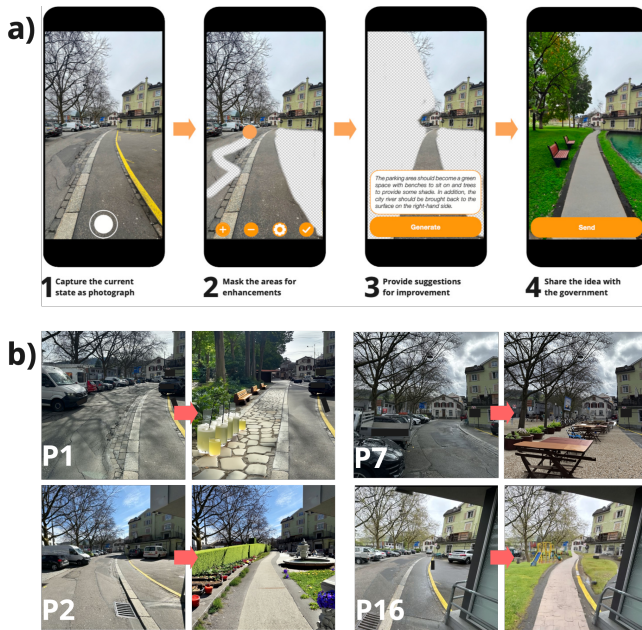


Figure 2: Samples of urban imaginaries from Preussner et al. [37] were used as probes during the expert interviews. Frame A illustrates the overall approach, showing how citizens generate their own urban imaginaries based on a self-taken image, a marked area they wish to enhance, and a written prompt. Frame B presents a before-and-after comparison of citizens' photographs, edited with GenAI to visualise their ideas and needs within the given urban development scenario. Presenting these probes to experts invited reflections on the use and sensemaking of such an approach.

is modified through a selected area of enhancement and a written prompt, producing an 'after' image. In addition, extracts of participants' before-and-after images were shown to illustrate how citizens envisioned their ideas within a given context. Experts were encouraged to provide their reflections on this approach, first in general terms and subsequently with a more organisational focus, considering the sustainable adoption, potential tool extensions, and anticipated challenges.

3.2 Participants & Ethics

In total, 21 experts were recruited, with an average of 10 years of experience in citizen participation ($SD = 5.4$ years, $min = 3$ years, $max = 20$ years). The experts were located in Denmark, Germany, and Switzerland. Since urban participation processes are organised by a variety of stakeholders, either led by municipal departments or delegated to external planning agencies, experts from different stakeholder groups were included in the study. The selection criteria required that participants had relevant prior experience in organising and facilitating citizen participation in urban development, engaging in related participatory practices, or in supporting such processes on behalf of municipal administrations. Table 1 in Appendix A provides an overview of the interviewed experts, including their role, areas of expertise and experience related to

participatory approaches. The study underwent a university ethics checklist and was exempted from the committee's additional full ethical review. Each participant was given informed consent for study participation. Of the 21 experts, eleven were working in municipal administration departments, where they were responsible for organising participations processes for their municipality (MR1, M5 – M9, M13, M14, M19 – M21). Eight participants contributed expertise from the private sector, working on behalf of municipalities, including urban planning and architectural processes (P4, PR10), the organisation and facilitation of public participation processes (P4, PR10, PR11, P12, P16, P17, P18), and the service provision of digital participation platforms (P2). Five expert hold research experience within participatory practices (MR1, R3, PR10, PR11, R15), whereby three of them also had a background in HCI (PR10, PR11, R15). Of the 21 experts, three (MR1, PR10 and PR11) had experience in both research and the private sector. Including also experts working outside municipal administrations was a deliberate methodological choice to broaden the spectrum of perspectives in the sample. These experts contribute valuable insights by reflecting on current practices, which may not always be articulated by municipal representatives themselves.

3.3 Data Collection & Analysis

All interviews were audio recorded, verbatim transcribed and translated if necessary. The data from the interviews was analysed by using a descriptive form of thematic analysis [6, 8], following an inductive approach that aimed to stay close to the experts' own quotes. This approach was chosen deliberately given the expert interview format, where the primary aim was to capture professional perspectives rather than to construct theoretical interpretation. The analysis proceeded in several stages, including reading the full transcripts, coding of relevant passages, grouping the codes into themes, write-up of the analysis, and selection of relevant quotes with reference to the research questions. To better contextualise how the identified insights relate to emerging practice, the paper incorporates a set of vignettes. Inspired by Ppali et al. [36], these vignettes are fictional, but draw directly on the experts' experiences and reflect broader patterns observed across the interviews and aim to bridge the speculative insights with a stronger connection to concrete practice.

4 Findings

In the following, the findings from the expert interviews are presented. As described in Section 3.3 vignettes are used to establish a grounded context for the findings, thereby strengthening the connection between the speculative insights and concrete practice. First, the experts' reflections on current practices and challenges in citizen participation are outlined, with a particular focus on participatory infrastructures and experiences with both analogue and digital formats. Understanding these existing conditions is crucial for assessing whether and how the use of GenAI and urban imaginaries can add value as a new participatory approach. This is followed by insights into the experts' perspectives on the use of GenAI in citizen engagement, including its perceived opportunities and challenges. Finally, the findings examine how experts can make sense of citizen-generated urban imaginaries.

4.1 Current Practices and Challenges in Citizen Participation

Vignette #1: The Drive to Deliver “Full-Spectrum” Participation

A municipality plans its next participation initiative, aware that neighbouring cities are promoting analogue workshops in combination with digital platforms. Aiming to demonstrate similar openness and innovation, the team decides to offer both an in-person event and an online channel for follow-up communications. Internally, employees recognise soon that their capacities for preparation and assessment are already saturated. As the process starts, most effort goes into ensuring that all formats are offered rather than into reflecting how citizens inputs will later be analysed. The resulting participation appears comprehensive from the outside, while the internal workload, scarce resources and a lack of experience limit the depth of actionable insights. Having noticed that AI has become ubiquitous in discussions in recent years, they ask themselves: Could AI help us in our processes?

Experts were asked to reflect on current practices in citizen participation. In the following, the motivations for and challenges of using participatory methods in citizen engagement are presented.

4.1.1 Establishing Participatory Infrastructures. The experts agreed that participatory processes are essential for addressing citizens' needs, fostering a sense of being heard, and strengthening trust in institutions. At the same time, they stressed that such processes require adequate infrastructures. While in some contexts participation is legally mandated (MR1), in others it remains at the discretion of decision-makers:

"But if the administration has to put a lot of effort into evaluating the results, they tend to be reluctant to engage in consultation or participation, especially if it is voluntary. Of course, if participation is required by law, they will do it, but they will do it as discreetly as possible so as not to receive too much feedback, because they know that this will create more work for them." P2

A recurring concern was the dependence on resources. Representatives of smaller municipalities noted that limited personnel and financial capacity restrict their ability to facilitate participation. Experts from the private sector further observed that some municipalities struggle with *"entrenched structures that even if [they] want to initiate change internally, [...] it doesn't always work (PR11)"*. Further, the lack of the necessary mindset or, fearing that consultation could generate unrealistic expectations and complicate the urban planning process were also raised by the experts:

"Clients often have an attitude that makes things difficult. They say: 'We'll do it. But [the citizens] shouldn't come up with special requests. We can't do that anyway, they should know that. We don't want to wake any sleeping dogs'" P12

Several experts emphasised that participation should be guided by clear objectives, with methods and stakeholder groups defined accordingly. Others highlighted that *"at the end of the day, the results*

must be converted into a report" (P2) which, given scarce resources, must balance comprehensiveness with efficiency in order to inform subsequent processes.

4.1.2 Participatory Analog Formats. The interviews highlighted that analogue participation formats, such as public events, workshops, and co-design sessions, remain among the most established approaches. Experts valued these settings for their immediacy, as moderators can directly respond to citizens' inputs, probe for clarification, and explain project limitations (MR1, P4, M7, PR11, P12, P16, M20, M21). Dedicated events also provide a fixed time and space for active engagement, enabling constructive discourse:

"When it comes to balancing opinions, especially listening to what the other side has to say, it is quite important to have the analogue aspect in there as well." M5

At the same time, several challenges were noted. A recurring concern was the lack of diversity among participants: analogue formats often attract the same individuals, typically from older generations, while younger people and migrants are less likely to participate. Barriers included inconvenient timing, limited motivation to attend after work, and communication strategies that fail to reach or appeal to these groups:

"The willingness of the population to participate in the first place; that is always a big challenge. It is not the case that when we have a community or a project, thousands of people participate. It always depends very much on the topic. I believe that activation, or rather the communication and preparation of information, i.e. making a complex project so easy to understand that residents realise: 'Hey, this has something to do with my daily life or my future, it is important'." P2

Moreover, experts observed that discussions in such settings can be shaped by a few dominant voices, creating power imbalances (R3, P16). Effective moderation was therefore seen as essential to ensure more balanced participation (R3).

4.1.3 Participatory Digital Formats. Experts described digital formats as a complementary approach to analogue participation. They noted several advantages, including the ability to reach younger audiences, the flexibility of contributing independent of location, and the potential for automated analysis of qualitative text inputs, which can ease evaluation processes (M7, M8, PR11, P12). At the same time, they emphasised that the effectiveness of digital participation depends on carefully selecting appropriate formats and contexts (P2, P12, M14, R15).

However, experts also pointed to notable limitations. Digital formats often require more planning, as questions must be carefully designed to yield analysable and meaningful responses (P2). Furthermore, qualitative text submissions may lack depth, and the asynchronous nature of online exchanges limits opportunities for immediate clarification or moderation (R3). Finally, similar to analogue approaches, digital participation risks excluding certain groups, raising concerns about accessibility and inclusivity (P4).

4.1.4 Participatory Mixed Formats. Some experts highlighted the value of mixed approaches that combine analogue and digital participation. Two general patterns were described. In the first, analogue

events are used for brainstorming ideas, followed by digital channels to share outcomes and enable follow-up discussions (R3, M14, P16). In the second, digital tools are employed first to collect and cluster basic information about citizens' needs, which then informs the design of subsequent analogue events (M7, M14).

Such mixed approaches were seen as a means to maintain continuity in the process, provide regular updates, and increase transparency. At the same time, experts cautioned that digital follow-ups after highly engaging analogue events may risk losing momentum, as online formats can feel less immediate and personal (R3).

4.2 Usage of GenAI in Citizen Engagement

Vignette #2: The Promise and Uncertainty of AI-Enabled Outreach

When planning a new participatory project, a city council decides to pilot a tool that allows citizens to visualise their ideas using GenAI, in the hope of attracting younger and previously underrepresented groups. The team is optimistic that this novel and innovative approach will enable low-threshold digital access and increase participation. However, when the first contributions arrive, they realise that most of them come from residents who are already involved in traditional channels, and that the ideas submitted are so diverse and go beyond the specified project context for participation. The team questions whether technological novelty alone can change long-standing participation patterns and whether and how they should use GenAI in future participation projects.

During the interviews, experts were introduced to the concept of urban imaginaries. Their reflections addressed the potential of GenAI to mobilise citizens, the importance of identifying suitable frameworks and settings, the need to manage expectations, and the role of public services' digital maturity.

4.2.1 Mobilising Citizens for Participatory Processes. Experts noted that GenAI could help increase engagement by adding an element of enjoyment to participation, encouraging more creative and “out of the box” contributions (R3). They also highlighted its potential to activate new groups, particularly younger citizens and migrants, as this approach offers a different communication channel and language barriers might be reduced through visual expression (PR11, R15). At the same time, concerns were raised that such tools could reinforce new power imbalances, since more digitally literate participants may be better able to articulate and visualise their ideas than others (M14, R15). On the other hand, experts recognised the opportunity for such images to communicate needs and ideas in a common visual language by illustrating the variety of ideas derived from the same base image, enabling greater empathy with perspectives from different interest groups:

"What I find interesting is how people interpret the same task or propose solutions in different ways, or how they imagine public space to be designed. [...] In the images ([see Figure 2]), there are already four different ideas for the park. This diversity of ideas illustrates that there are often multiple stories behind them. And sometimes it helps to have this variety of ideas expressed in the

same “language”, so that comparisons can be made and one can say: OK, it is not actually about the image, but about the underlying need." **M13**

4.2.2 Identifying Suitable Frameworks and Settings. Experts emphasised that the use of GenAI in participation should always be guided by the specific goals of the process and the target groups to be reached:

"The question always arises: where am I in the process? What do I want to get from the population? What do I need to move forward? [...] What do I do analogously, what do I do digitally? Which population group do I want to address and by what means?" **P12**

Two possible settings emerged. (1) Co-design sessions, where participants generate images together, were seen as promising but also raised concerns that dominant voices might gain even more influence. GenAI was also considered useful as an ice-breaker to encourage broad thinking, or in early stages to create mood boards that capture general directions for discussion (R3, M8, M9, PR11, R15). (2) Others suggested the opposite order, starting with citizens' needs and then iteratively using GenAI to refine visions (M7, PR10, R15). Across perspectives, experts stressed that GenAI should not be an end in itself; rather, municipalities must critically reflect on what they expect to gain from image submissions and evaluate whether and how its use is appropriate.

4.2.3 Managing Expectations & Design Fixations. Experts stressed the importance of managing citizens expectations when using GenAI in participation processes (P17, P18). It was seen as crucial to communicate that visualised ideas are unlikely to be implemented exactly as depicted. Otherwise, there is a risk that the effort invested in creating images could lead to disappointment if outcomes differ from expectations:

"And since certain expectations are triggered, and if things don't turn out that way, then everyone is disappointed, because the feeling is great, now I've taken such a beautiful picture, but it's completely different from what I imagined." **P4**

Besides the management of the expectations for the overall project, experts highlighted that using GenAI may lead to design fixation during the process, meaning that there is the risk that the focus of discussion is on high level details instead of discussing the actual underlying needs for a place, as R15 explains:

"As you have many possibilities and can freely express your ideas, you hope the system will generate them accordingly. Yet this is also a downside. You never know whether what you have in mind will actually be [generated]. If you imagine a brown bench but the model generates a black stool, two reactions are possible. Either you think “I hadn't considered that, interesting”, or you feel “this is not what I imagined”. The generated output may even affect your original idea, pushing you towards a kind of fixation because the visual is now there and feels concrete. It can then be difficult to move away from that fixed solution and return to your initial intention. So it can go both ways." **R15**

Most experts emphasised the risk of design fixations or unrealistic expectations on the citizens' side, however decision-makers may likewise become anchored in these fixations. When reviewing citizens' images, they may focus narrowly on depicted elements rather than on the underlying needs the visuals are meant to express. Recognising that urban imaginaries can cause such fixations, and thereby shape the direction of discussion, is therefore essential.

4.2.4 Assessing the Digital Maturity of Public Services. Beyond citizens' digital skills, experts underlined the need to consider the digital readiness of public services themselves. Many municipal staff have had little or no exposure to AI, suggesting that capacity building should begin here. Experts argued that cities need to be engaged earlier, for example through staff training and by creating spaces to explore digital approaches such as GenAI:

"Perhaps I need to educate myself further in AI, or I need to hire a specialist to moderate my participation processes. When we open up the vessel, a whole range of different questions arise. For us in planning, this means we need to question our own methods and skills." **M7**

One proposed strategy was to start with simple digital tools and gradually introduce more advanced ones, acknowledging that digital participation formats are a learning process for municipalities as much as for citizens:

"It's always a balancing act between how innovative you should be, how much you overwhelm the customer, and how much we orient ourselves to the process they already know. And try to optimise it step by step. This means that a customer who may have said, 'I just want to optimise my existing process,' [...] and we support them. [...] And they then realise, that worked well and wasn't that difficult after all, they might [...] venture a little further [...] And so you try to help the customer move forward based on their skills and experience." **P2**

4.3 Sensemaking of Citizen-Generated Urban Imaginaries

Vignette #3: The Challenge of Translating Visual Contributions into Action

During a participation initiative, residents submit a large and diverse set of AI-generated visualisations illustrating how their neighbourhood square could change. As planners and decision-makers attempt to synthesise the input, they struggle to distinguish which visual elements convey concrete priorities. Soon, the discussion shifts to interpreting certain visual elements and why certain elements are unrealistic, rather than understanding the intentions of citizens. As one planner reflects: *"Is this supposed to represent a pond, or to suggest that the urban river should be brought back to the surface? And why here, and why at all? It's completely unrealistic and certainly not feasible with our budget!"* Because no accompanying textual data were collected, planners notice that they are interpreting images rather than understanding residents' needs.

In the interviews, experts were asked to reflect on whether and how decision-makers can make sense of urban imaginaries. Through

the analysis three main themes emerged: (1) understanding and evaluating the needs behind urban imaginaries, (2) considering how the decision-making processes might be structured, and (3) ensuring transparency by effectively communicating decisions:

4.3.1 Understanding and Evaluating the Needs Behind Urban Imaginaries. Experts noted that interpreting urban imaginaries poses challenges, as the underlying needs cannot always be directly derived from visual elements (M14). Consequently decision-makers are then required to interpret rather than read off intentions. For example, a depiction of green space in the urban center might reflect different needs: a lawn for dog walking, an adaptation to climate change through cooling effects, or purely aesthetic preferences among others. Further, it also remained unclear to experts whether the generated image truly represented citizens' intentions, or whether the AI had introduced elements beyond what participants envisioned:

"Maybe the AI didn't capture fully what they were trying to make. Maybe they wanted more elaboration on certain things, or it's exactly like they imagined it. So I would probe whether their expectations were met by the image." **PR10**

To address these challenges, experts proposed several strategies. (1) Collaborative generation in moderated settings: Urban imaginaries could be created together with others in facilitated workshops, where moderators can ask clarifying questions and encourage participants to explain the intentions behind visual elements (M19). This setting was seen as helpful for surfacing underlying needs and preventing misinterpretation of individual images. (2) Supplementary text inputs: Images could be accompanied by short written explanations to make the underlying ideas more explicit (P17, P18, M20). Experts suggested guiding questions and storytelling methods, in which participants describe how they imagine being in the depicted situation or what should happen there. Such approaches were viewed as a way to enrich the imagery with contextual information and reduce ambiguity. (3) Prioritising prompts over images: Some experts argued that decision-makers might find the written prompts more informative than the images themselves, since *"the quality [of the analysis] could be higher if you evaluate the prompt than if people subjectively analyse [and interpret] images and say, 'I saw that.'"* (P2). While the image provides an accessible entry point for citizens in participation processes, the text was considered to more directly reflect citizens' intentions, with the visual serving as a secondary reference in cases of ambiguity:

"It is probably easier for the administration to evaluate the prompt than to evaluate the image. The image is actually more of an aid for the participant in formulating their response. [...] It is more difficult for the administration to look at the 500 images than to take the 500 prompts. [...] It is much easier to do an automated text analysis than an image analysis." **P2**

Experts further noted that strategies 2 and 3 are particularly relevant in e-participation contexts, where large numbers of images may be submitted. In such settings, text-based information can simplify analysis, reduce the effort of interpretation, and enable the use of automated clustering techniques that are already in practice.

4.3.2 Making Decisions. Once citizens' needs have been collected and analysed, a decision must ultimately be made about which ideas are implemented, raising the broader question of who holds the authority and power to decide. Three broader potential actors have been identified. (1) One perspective emphasised the role of municipal authorities and urban planners. This group was seen as best positioned to evaluate whether proposals serve the wider community, comply with legal and regulatory frameworks (M14, M19), and align with long-term urban strategies. Their professional expertise and institutional responsibility were considered essential for translating citizen input into feasible action:

"We treat all inputs equally, regardless of how relevant they are. And afterwards, we have to define comprehensible criteria. For example, we have a new strategy. To what extent does this input comply with the strategy? Or does the input correspond to the treatment needs that we have previously identified? Or is it legally compliant? What about technical feasibility? What about the costs? What is the cost-benefit analysis? For us as experts, this is work that we have to do on behalf of politicians. We cannot always do this with the population. And I think our job is to take the public interest into account." **M7**

(2) Another view highlighted the role of citizens themselves. As those who live with the outcomes and face local challenges daily, citizens were seen as having a legitimate claim to influence decision-making. Some experts argued that the role of citizens should be to set overall main thrust without being constrained by any regulations. Others suggested that digital technologies could help translate complex legal frameworks into accessible language, enabling citizens who wish to engage more deeply to participate meaningfully in evaluating proposals, as speculated by PR11:

"When you may have one day a system, having a button that breaks the complex legal frameworks into easier. Even simpler, so to speak. So that everyone understands and can participate as fully as possible. Because before that, it was just a source of ideas, which is fine, but that's exactly the point. Where does the idea go? What happens to it? [...] I find it more exciting when citizens are involved in the process from start to finish. Of course, they are only involved at certain points, but they are part of the process. Participation that is limited to just submitting ideas is not enough. Just because they may not understand [the complex regulations], that is not a reason for me not to try. Especially since we now have the right tools to implement it relatively easily." **PR11**

(3) The last perspective considered the potential role of AI. Experts argued that AI could reduce the influence of subjective bias and provide a more objective basis for decision-making. However, concerns were raised about the indicators such systems would rely on and how these would be weighted. To ensure legitimacy, experts stressed that citizens should play a role in defining these parameters so that automated decision-making reflects collective values rather than the regulatory criteria.

4.3.3 Communicating Decisions. Experts emphasised the importance of not only communicating the final decision but also making the decision-making process transparent (P17, P18, M14). Citizens should understand why certain ideas were adopted while others were not, especially given that visual submissions can create high expectations, as presented in section 4.2.3 in more detail. Clearly explaining how proposals align, or conflict, with regulations and broader strategies was seen as essential:

"That is like our role, to take public interest into account, as well as political acceptance and political processes. But ultimately, we must ensure that the evaluation and the result are comprehensible to the population. Not that everyone agrees, which is difficult to achieve, but that the evaluation is comprehensible." **M7**

More specifically, M13 emphasises that participation is not about implementing every idea but about communicating transparently why decisions are made, in order to sustain citizens' trust in participation processes over the long term:

"Not every idea raised [...] needs to be implemented. What matters is that decisions are justified. Why was something included? And why not? [...] As long as we ensure continuous transparency and communication, people feel taken seriously. It is not really about them wanting to be the ones who ultimately raise their hand and decide. What matters to them is that their concerns are properly reflected. That their perspective, their experience, is represented in the project." **M13**

Several experts stressed that such transparency can strengthen trust in participatory processes by revealing the inherent complexity of decision-making. Three strategies for communication were identified. (1) When images are submitted online, experts suggested providing individualised feedback to citizens. This would ensure that even without face-to-face interaction, citizens receive direct responses to their contributions. However, questions were raised about whether municipalities have the personnel to deliver such feedback consistently (M13), and whether AI systems might help automate parts of this process. (2) Experts proposed presenting results in aggregated form. By displaying the range of submitted ideas transparently, overlaps and conflicts can be highlighted in more accessible ways than long written reports. Visual formats such as mood boards or "composite images that integrate common elements (M21)" were seen as especially effective for communicating both shared priorities and points of tension among submissions (M20). (3) Lastly, storytelling was discussed as a means of making outcomes more engaging, since "participation is also the art of telling a story" (M8). Suggested formats included a "newspaper from the future (M8)", reporting on how urban spaces might look and function in years to come. Such narrative approaches were considered effective in helping citizens connect emotionally with proposed directions and in sustaining interest in longer-term processes.

5 Discussion

In this paper, an interview study with experts was conducted to examine their reflections on the concept of urban imaginaries as a participatory approach in citizen engagement. The discussion addresses the research questions by situating the findings within

prior work and outlining key implications for both practice and future research.

5.1 RQ1: What potentials and considerations do experts in participatory approaches anticipate regarding the use of urban imaginaries in citizen engagement?

Overall, the findings point to opportunities in using this approach, particularly for mobilising population groups that are otherwise difficult to engage, whereby highly polished images may create expectations among citizens that are difficult to meet, underscoring the importance of careful moderation. The following subsections elaborate on these themes in more detail, first addressing the mobilisation of citizens and the choice of suitable settings, and then examining how expectations can be managed alongside the digital maturity of administrations.

5.1.1 Mobilising Citizens through Suitable Settings. Experts highlighted that the playful character of GenAI could attract participants and potentially reach new groups. However, they cautioned that the use of digital tools alone does not guarantee the involvement of younger citizens. As shown in section 4.1, the challenge often lies in how this group is approached and addressed, making communication strategies critical for successful engagement and for supporting the kinds of dialogical interactions emphasised in collaborative planning approaches [20]. More broadly, experts emphasised that the use of urban imaginaries must be evaluated in relation to the specific project, the stakeholders involved, and the type of citizen input sought. They argued that GenAI should be understood as one tool among many, alongside established approaches such as online forms, VR and AR applications [47], walk-and-talk formats [38], or co-design workshops [12]. From this perspective, urban imaginaries are not inherently superior or inferior but form part of a wider participatory toolkit that can be combined to support both expression and deliberation. Several settings were identified as particularly suitable for applying this method. In in-person workshops, urban imaginaries could serve as an ice-breaker, encouraging participants to think broadly and generate a wide range of ideas. These could be clustered into a mood board, which would serve as a starting point for more detailed discussions. A different application would place the method at the end of an iterative process, similar to user-centred design, where needs are first collected through simple techniques such as pen-and-paper exercises, followed by low-fidelity prototyping with materials like cardboard, clay and building bricks [12, 37]. Once a common understanding has been reached, AI-generated images could be introduced. When integrated into e-participation formats [46], like in a mobile app such as *CitizenVision* by Lützelshwab et al. [27] or *UrbAI* by Preussner et al. [37], where citizens contribute asynchronously, additional forms of input would be necessary. Relying on images alone risks leaving needs open to interpretation rather than directly capturing them. To address this, experts suggested incorporating free-text fields or guiding questions, and highlighted the importance of the written prompts as a key source of information. Prior research by Preussner et al. [37] has shown that citizens tend to formulate need-oriented prompts (e.g. “a family-friendly place”) rather

than specifying concrete elements (e.g. “a slide and a swing”). For decision-makers, especially when large volumes of submissions are expected, text-based inputs and prompts were perceived as easier to analyse, potentially even automatically, compared to the more interpretive task of analysing generated images. In this sense, the combination of images and accompanying text begins to position urban imaginaries as boundary objects that bridge citizens’ experiential knowledge and administrative planning logics [18, 48].

5.1.2 Managing Expectations of Citizens and Advancing Digital Maturity of Public Administrations. Experts saw urban imaginaries as both a source of inspiration and a potential risk for creating unrealistic expectations among citizens. High expectations may arise when individuals already hold a fixed vision that GenAI cannot reproduce exactly, or when they assume that submitted images will ultimately be implemented as shown, reflecting the phenomenon of design fixation [24] within conceptual design processes. In both cases, the findings indicate that the use of such methods requires careful moderation and guidance, resonating with collaborative planning perspectives that foreground the importance of structuring dialogue and clarifying procedural constraints [20]. One strategy suggested was to stress that images need not perfectly depict the final outcome but rather serve to indicate direction and open spaces for discussion. This aligns with concept of *conversational imperfections* by Guridi et al. [18], where the value lies in metaphors that support mutual understanding [41] rather than in visual accuracy and where the images operate as boundary objects that can accommodate different interpretations while still supporting joint reflection [48]. Moderation was also seen as crucial for setting clear boundaries, clarifying why the method is used, what kind of input is expected, and what the limitations of the process are. In in-person settings, moderators could respond directly to questions and highlight the constraints of idea submissions, making it easier to manage expectations while still encouraging broad thinking. The challenge here lies in steering discussions in ways that allow ambitious ideas while maintaining clear boundaries, so as to avoid frustration when not all suggestions can be realised. In online contexts, experts proposed that AI itself could take on a co-facilitator role, communicating the scope and limitations of the process to participants.

Beyond the management of expectations, the findings also highlight that digital literacy is required not only on the side of citizens but equally within public administrations. Experts emphasised that entrenched structures, along with limited financial and temporal resources, represent major constraints. As a result, the implementation of urban imaginaries cannot be achieved through ad hoc measures but requires a gradual process of institutional learning, supported by digital training and the accumulation of practical experience. A further implication concerns the role of HCI research. Rather than engaging in “bungee jump research (PR11)”, where collaborative research is mainly focused collecting data in short-terms, researchers were seen as having the opportunity to collaborate more closely with municipalities and contribute directly to advancing digital maturity. Given the wide range of skills and methods within HCI, the field is well placed to support administrations in strengthening their capacity for digital innovation [7, 30]. In addition to capacity-building, HCI researchers could also foster networking

across municipalities by facilitating the exchange of best practices and lessons learned. Such initiatives can help establish shared innovation spaces, demonstrate what is digitally feasible, and enable administrations to explore new approaches step by step. Overall, the discussion of the findings underscore that the successful use of urban imaginaries is closely tied to the digital maturity of public administrations and to their capacity to host transparent engagement processes rather than one-off consultative events.

5.2 RQ2: How can decision-makers integrate and make sense of citizen-generated urban imaginaries in participatory urban development?

The following subsections discuss RQ2 in the form of key implications. They aim to provide both practical guidance for applying urban imaginaries in citizen engagement and directions for future research. While key implications 1–3 outline prerequisites that should ideally be in place before implementation, key implications 4–7 focus on the sensemaking process itself.

5.2.1 Key Implication 1: Assessing & Advancing the Digital Maturity of Public Administrations. Before considering the use of urban imaginaries, institutions need to reflect on whether they have the resources to facilitate such an approach. This includes the digital literacy of staff, prior experience with digital methods, an openness for genuine citizen engagement, and adequate financial resources. These factors can be summarised under the umbrella term digital maturity, which should serve as the first point of reflection and can be seen as a precondition for moving beyond more tokenistic forms of consultation towards greater citizen influence [1]. Once established, administrations can further develop the necessary skills and capacities. HCI researchers hold valuable expertise in both methodological approaches and the development of participatory infrastructures. They can therefore play an important role in advancing the digital maturity of public administrations by engaging in long-term collaborations that build infrastructures extending beyond individual research projects. One example would be the establishment of shared innovation spaces, where administrations can exchange best practices and learn from each other's experiences. Strengthening the digital maturity of public administrations forms a crucial foundation for sustainable digital practices, including the meaningful use of urban imaginaries.

5.2.2 Key Implication 2: Defining Appropriate Settings for Application. The findings emphasise that the use of urban imaginaries should not be an end in itself but rather considered as one option within a broader set of participatory methods. A bottom-up approach is required, beginning with a clear definition of the urban challenge, the identification of relevant stakeholder groups (such as citizens, associations, communities, or interest groups), and a reflection on the kinds of insights expected from participation [57], which aligns with collaborative planning approaches that foreground joint problem framing and the careful design of deliberative settings [20]. This study outlined two possible settings for applying the approach. First, urban imaginaries can serve as an ice-breaker in workshops, encouraging participants to generate broad and speculative ideas

that can be clustered into a mood board for further discussion. Second, they can be positioned at the end of an iterative process, where needs are initially explored through low-threshold methods such as pen-and-paper exercises or simple prototyping, before moving towards more concrete visualisations [12, 37, 47]. While prior work has begun to explore such cases, further research should systematically investigate the suitability of different settings. Sharing best practices across projects and municipalities can contribute to a more nuanced understanding of when and how urban imaginaries can be most effectively applied.

Beyond identifying potential application contexts, the environmental impact of GenAI models [11, 22, 26, 51] needs to be considered when defining appropriate settings. While some citizens and communities may welcome the benefits of such approaches, others oppose the environmental degradation associated with the data centres required to power these models [11, 22, 26, 51]. This highlights the tensions that large-scale GenAI adoption can create for municipalities, particularly regarding considerations of ecological responsibility and environmentally sustainable civic innovation.

5.2.3 Key Implication 3: Considering the Biases and Limitations of GenAI. Another important consideration before deploying GenAI in citizen participation are the limitations and biases inherent in these models [61]. Research highlights issues such as data colonialism and the reproduction of neocolonial stereotypes [15], underscoring the need for careful and context-aware use. Generated visualisations can appear misplaced if they overlook cultural or local identity, although recent work explores how place identity can be integrated in such models [23]. At the same time, intentionally using imperfect or biased outputs can provoke reflection on what matters in a place, echoing Guridi et al. [18], who found that "*conversational imperfections*" can support deeper engagement with cultural heritage by positioning generated images as boundary objects that surface tensions and invite collective negotiation [18, 48]. Considering these limitations of GenAI reveals several constraints but also, if applied carefully, opportunities for future exploration. From an organisational perspective, this underscores in line with the previous implications the need for a holistic understanding and sufficient digital maturity to employ such approaches purposefully.

5.2.4 Key Implication 4: Managing Expectations of Citizens and Institutions. The use of urban imaginaries carries the risk that high-fidelity outputs create expectations among citizens that are difficult to meet. This may occur when individuals become stuck in design fixations [24] on the vision they wish to see visualised but the GenAI fails to reproduce it accurately, or when submitted images are assumed to represent outcomes that will be realised in practice. In both cases, disappointment is likely if the limitations of the approach are not made explicit. To address this, careful moderation and facilitation skills are required [13, 14] to clarify the possibilities and boundaries of the method [20, 60]. Future research could also explore whether alternative generative strategies, such as simplified black-and-white renderings, inpaintings, or deliberately exaggerated representations, might help to both manage expectations and stimulate discussion.

5.2.5 Key Implication 5: Approaches to Evaluating Needs Behind Images. While prior work has highlighted the potential of urban

imaginaries to enhance citizen participation and attract broader audiences, decision-makers face the challenge of interpreting rather than fully understanding the images submitted. When ideas are presented in purely visual form, the underlying needs represented by specific generated elements are often difficult to discern [37]. For this reason, it is recommended to collect additional contextual information, for example through free-text input fields or guiding questions designed to clarify the intentions behind the images. Looking further, written prompts are potentially more relevant to decision-makers than the images themselves, as they already provide direct descriptions of citizens' needs. From this perspective, citizens may benefit most from the visualisations in terms of reflecting on their own ideas and experiencing empowerment, whereas decision-makers may find textual information more efficient to analyse. Beyond these more technical considerations, in-person workshop settings were also identified as valuable. Here, citizens and decision-makers can engage in constructive dialogue that enables the intentions behind urban imaginaries to be discussed directly, reducing ambiguity and fostering shared understanding [20].

5.2.6 Key Implication 6: Reflecting the Role and Authority of Decision-Makers. Our findings show how roles between citizens and decision-makers are typically distributed, with citizens providing input and decision-makers aligning these ideas with regulations, laws, and public strategies. However, some experts emphasised the need to move beyond this traditional division of roles. In particular, given the increasing use of technologies such as GenAI, participants suggested leveraging these tools to make regulations and laws more accessible by translating them into understandable formats for citizens. This could enable citizens to move beyond the role of idea providers and become more actively involved in the planning and decision-making processes. By evolving the role of citizens from input providers to active contributors in decision-making, this shift may also help to move participation higher up Arnstein's Ladder of Citizen Participation [1], from more consultative forms towards greater degrees of citizen power. The interview findings further suggest that increased citizen involvement in decision-making may foster greater trust in the process. Consequently, future work on the use of GenAI in citizen participation should explore ways of providing citizens with tools and processes that enable them to move beyond the role of idea providers and towards becoming active decision-makers.

5.2.7 Key Implication 7: Communicating Decisions Transparently. The findings suggest that decisions about which citizen contributions are taken forward and which are not should be communicated openly. Transparent communication enables citizens to understand the process, feel that their input has been acknowledged, and maintain trust in participatory practices, thereby encouraging their involvement in future initiatives and reflecting core commitments of collaborative planning to openness and accountability [20]. Beyond simply publishing a final report, decision-makers can use the generated images to visualise both commonalities and conflicting ideas among submissions. This not only makes outcomes more accessible but can also stimulate dialogue between citizens by creating space for discussion of different perspectives, which goes in line with the approach of Salovaara and Vahvelainen [45] on triangulating different possible futures for identifying plausible future

scenarios. Looking ahead, future research could explore how result communication might be enriched through approaches such as storytelling. The submitted visual material provides opportunities that go beyond the initial idea generation, serving as input for formats like a *"newspaper from the future (M8)"* or other narrative devices that help citizens engage with possible urban futures [2] in a more imaginative and sustained way.

5.3 Limitations & Future Work

This study presents findings from an interview study on how experts assess the potential benefits of citizen-generated urban imaginaries; however, certain limitations regarding the scope and generalisability of the findings should be acknowledged. First, the interview study is based on a sample of 21 experts with the intention of capturing diverse professional perspectives across municipal administrations, private sector stakeholders, and researchers. The findings should therefore be understood as descriptive insights rather than as claims of empirical generalisability.

Second, the insights are grounded in specific planning cultures and institutional contexts. Most interviewed experts operate within Central European planning systems, which shapes how they understand participation and the potential integration of GenAI into existing workflows. While the presented themes and implications likely resonate beyond these contexts, transferability should be assessed carefully to local governance structures and participatory traditions, including the fact that the theoretical perspectives drawn upon in this paper, such as Arnstein's ladder of participation [1] and Healey's collaborative planning [20], originate from particular Euro-American planning debates.

Third, the qualitative and interpretative nature of the study places emphasis on meaning-making rather than behavioural observation. Interviews reveal how experts reason about and anticipate working with citizen-generated images, but they do not capture how these dynamics unfold in practice or in real decision-making situations. Future work should therefore complement these perspectives with empirical studies involving concrete workflows or deployments in real-world settings. By emphasising these methodological boundaries, the aim is to set appropriate expectations for validity. The contribution of this work lies in conceptual and descriptive insight into emerging professional sensemaking practices in the context of GenAI in citizen participation, not in predictive claims or generalisable patterns.

6 Conclusion

This paper has introduced the concept of urban imaginaries as a means for citizens to articulate visions of urban development through GenAI. While prior research has shown that this approach expands the possibilities for participation and creativity, this work examined the concept in a broader context by considering experts' evaluation of its application. The expert interviews highlighted both opportunities and limitations of urban imaginaries from an organisational perspective. Although the images can serve as accessible entry points for dialogue, they risk failing to convey the underlying needs if detached from additional contextual data. This work contributes seven implications that provide guidance on when and how urban imaginaries may be meaningfully integrated into

participatory planning. These insights emphasise the importance of organisational digital maturity, together with transparency, contextualisation, and communication, in enabling decision-makers to translate visual contributions into informed and actionable outcomes. The findings contribute to ongoing debates in HCI on the role of digital tools in mediating between citizens and public institutions. Future research should further investigate how materials generated through urban imaginaries can be combined with other participatory methods to foster more inclusive and sustainable urban development.

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A Overview of the recruited experts

Table 1: Overview of the recruited experts, including their current role, years of relevant experience- and expertise related to the scope of this work. To identify the background of the experts, the following abbreviations are used: M = representative of a municipality; P = professional from the private sector working on behalf of municipalities; R = researcher in the domain of participatory practices. Experts with experience spanning multiple roles are labelled using combined abbreviations.

Expert	Current Role	Experience	Relevant Expertise
MR1	Project Manager & Research Associate at a regional authority, serving a population of >100.000 citizens.	>20 years	Organisation of participatory processes and events on community-, local- and regional level including citizens & various public stakeholders.
P2	Founder & C-level role of a software company specialised as e-participation platform provider.	>9 years	Provision of an e-participation platform and consultation on digital and hybrid participation formats for public administrations, associations, community organisations, and political parties.
R3	Project Manager & Doctoral Researcher at a university with a focus on digital participation in social innovation and climate action.	>3 years	Research from an observational perspective on case studies of different digital participation formats, including those organised by public administrations and civil society organisations.
P4	Project Manager for Spatial & Transport Planning at an urban planning office specialised in local- & neighbourhood planning and consulting for public authorities.	>7 years	Organisation of large-scale participatory methods and citizen engagement processes in urban development on behalf of public authorities.
M5	Programme Manager for Smart City at a municipal administration, serving a population of <50.000 citizens.	>4 years	Innovation scouting for Smart City solutions, including digital participation formats and facilitation of participation processes.
M6	Chief Administrative Officer at a municipal administration, serving a population of <50.000 citizens.	>7 years	Interface between politics, administration, and citizens, also with organisational experience in local participation processes.
M7	Project Manager for Urban Planning at a municipal administration, serving a population of <50.000 citizens.	>8 years	Organisation of participatory processes and events on community- and local level including citizens and various public stakeholders.
M8	Head of Urban Development at a municipal administration, serving a population of <50.000 citizens.	>5 years	Participatory urban development, including organisation of participatory events, stakeholder management and facilitation of an urban lab setting for low-threshold citizen input.
M9	Head of Urban Spaces at a municipal administration, serving a population of >100.000 citizens.	>6 years	Interface between community development, municipal departments, and civil stakeholder groups. Focus on organising and consulting participation processes in analog and digital formats.
PR10	Postdoctoral Researcher at a University with a background in architecture and HCI.	>8 years	Architectural working practice and research at the intersection of architecture and HCI, with a focus on participatory design approaches.
PR11	Postdoctoral Researcher in HCI & Science Transfer Consultant at an association for municipal management.	>12 years	Research in diverse rural cultural contexts with a focus on HCI and participatory approaches. Consultation and knowledge transfer on digitalisation between university and municipal level.
P12	Owner of an agency specialised in communication consulting and participation processes.	>20 years	Planning and facilitation of participation processes with diverse stakeholders on behalf of public administrations, associations and community organisations.
M13	Specialist in neighbourhood development and participation at a municipal administration, serving a population of <100.000 citizens.	>20 years	Strategic consultancy in participation and neighbourhood development, including facilitation and administrative capacity-building.
M14	Head for Urban Development at a municipal administration, serving a population of >100.000 citizens.	>14 years	Coordinating urban development strategies, socio-spatial planning, and neighbourhood development with a emphasis on citizen participation processes.
R15	Doctoral Researcher in HCI at a University with research experience in participatory approaches and urban development.	>7 years	Research in participatory design and digital participation, including work on technology-supported citizen engagement in urban development.
P16	Project Manager at an urban planning office specialising in spatial planning, area development, and participation consulting.	>12 years	Design and facilitation of participatory processes, stakeholder involvement in planning, large-group moderation, and strategic communication work.
P17	Consultant and C-level position in a communications agency specialising in communications consulting and participation processes.	>7 years	Conceptualising, organising, and moderating participatory processes, with a focus on large infrastructure projects.
P18	Consultant and C-level position in a communications agency specialising in communications consulting and participation processes.	>13 years	Conceptualising, organising, and moderating participatory processes, with a focus on large infrastructure projects.
M19	Project Manager for Urban Development at a municipal administration, serving a population of <50.000 citizens.	>3 years	Planning and facilitating participation processes across urban, area, and neighbourhood development.
M20	Head of Urban Planning at a municipal administration, serving a population of <100.000 citizens.	>15 years	Organising citizen participation in urban planning, urban design, area development, and heritage conservation.
M21	Project Manager for Urban Development at a municipal administration, serving a population of <50.000 citizens.	>10 years	Organisation of participation processes in urban and neighbourhood development, including supporting local initiatives through participatory budgeting.