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# E-participation and engagement in urban planning: experiences from the Baltic cities

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## ABSTRACT

Based on an analysis of plan-making processes in 12 Baltic cities, this study explores public engagement strategies and dominant ICT-enabled engagement approaches and processes in the post-socialist context. The results show that e-participation is an integral part of the city planning practices in all three Baltic States, primarily contributing to the diversification of informing and consulting processes. More meaningful participation is achieved by combining e-participation with follow-up deliberation, demonstrating the potential of blended and iterative participatory strategies. Moreover, ICT-enabled self-organization is forcing a shift towards greater transparency, accountability, and civic involvement that is transformative for the post-socialist context.

## KEYWORDS

e-participation; urban planning; public participation; engagement processes; Baltic States

## Introduction

Public participation has been an integral part of urban planning for more than 50 years in Western Europe and over two decades in Eastern European countries (Kleinhans, Van Ham, and Evans-Cowley 2015; Kubicek and Aichholzer 2016; Afzalan, Sanchez, and Evans-Cowley 2017). However, planning agencies still struggle to incorporate participatory approaches that create meaningful participation in plan-making and decision-making processes (Afzalan, Sanchez, and Evans-Cowley 2017). The reasons are related to a range of practical problems (Conroy and Evans-Cowley 2006; Kleinhans, Van Ham, and Evans-Cowley 2015), citizens' lack of interest in participation, lack of trust in public participation, high costs (Afzalan, Sanchez, and Evans-Cowley 2017), and the planning agency's (un)willingness to delegate control (Aitken, Haggett, and Rudolph 2016). In the meantime, the advancements in information and communication technologies (ICTs) have facilitated the emergence of e-participation – *a branch of e-government oriented to consultation and decision-making* (Naranjo-Zolotov et al. 2019), *which mobilizes ICT for participatory processes and aims to increase citizens' abilities to participate* (Granier and Kudo 2016). It has led to the development of a multitude of digital solutions that either mimic the traditional approaches or provide new ones that are now possible with the increased use of different digital devices.

Many of e-participation solutions are perceived or promoted as an answer to the existing challenges of participatory planning, e.g. increasing public participation (Granier and Kudo 2016) and giving equal voice to all citizens (Narooie 2014; Ertiö 2015), promoting trust and contributing to securing implementation of policies (Ertiö 2015). Additionally, e-participation is expected to ensure better citizens' input (Granier and Kudo 2016) and reshape the relationship between the government and the citizens (Ertiö 2015; Effing and Groot 2016). However, there is still limited empirical evidence supporting the supposed advantages of e-participation in urban planning (Kleinhaus, Van Ham, and Evans-Cowley 2015), with some studies showing contradictory results, e.g. Åström and Karlsson (2016).

The existing research on e-participation has primarily focused on the technological solutions (Alarabiat, Soares, and Estevez 2016; Yigitcanlar et al. 2018) or implementation challenges (Te Brömmelstroet 2013; Kahila-Tani, Kyttä, and Geertman 2019), paying less attention to the role of e-participation in planning practice or the changes in the engagement processes. The studies tend to focus on the use of specific solutions, e.g. interactive websites (Conroy and Evans-Cowley 2006), different geospatial solutions (Brown and Kyttä 2014; Narooie 2014; Kahila-Tani et al. 2016; Kahila-Tani, Kyttä, and Geertman 2019), planning support systems (Te Brömmelstroet 2013; Zhang et al. 2019), mobile applications (Ertiö 2013, 2015, 2018; Thiel et al. 2015), or social networking sites (Warren, Sulaiman, and Jaafar 2014; Alarabiat, Soares, and Estevez 2016; Norström and Hattinger 2016; Haro-de-Rosario, Sáez-Martín, and Del Carmen Caba-pérez 2018; Bonsón, Perea, and Bednárová 2019). Few studies provide a comprehensive analysis of the planning context, participatory procedures, and the use of digital solutions that support these processes (Kubicek and Aichholzer 2016). Although there is a general consensus that e-participation is not supposed to replace traditional participatory methods but complement them (Cropf and Benton 2019), we have limited knowledge of how it manifests in practice. There is a research gap on how e-participation fits into overall urban planning or governance processes and how it has affected and changed the planning practice and citizen engagement. Potts (2020) attempts to address these issues from a theoretical perspective by analyzing planning paradigms and development of ICTs, suggesting the emergence of a new planning paradigm – *Planning 3.0* in which the systems and structures of planning are innately 'smart.' However, the empirical evidence for such changes in different planning contexts is still limited.

This knowledge gap is particularly pronounced in the post-socialist context, where research on participatory planning is fragmented and relatively recent. For more than two decades, post-socialist countries have gradually adopted practices and methods in urban planning from their Western counterparts. However, it has often been done without adequate consideration of the local context (Nedović-Budić 2001), resulting in formal (as opposed to meaningful) participatory processes. It has taken years for the public engagement in urban planning to develop and gain acceptance among the local authorities and the society, requiring overcoming the passivity, indifference, mistrust, uncertainty, and pessimism on both sides (Grazuleviciute-Vileniske and Urbonas 2014). The citizen democracy in post-socialist countries is still fragile and sensitive (Rzeszewski and Kotus 2019), but it is gaining momentum, partially facilitated by the advancements in ICTs. With Estonia as Europe's digital success story, it is especially interesting to look at the Baltic countries and their progress in integrating ICTs in

participatory planning practices. Hence, this study explores the use of e-participation tools for public engagement in current city planning practices in Baltic cities. With a focus on typical planning processes, we seek to understand the dominant ICT-enabled engagement approaches in urban planning, how they fit into overall urban planning and governance processes, and how they contribute to more meaningful participation in the plan-making. The results provide new insights from a previously underrepresented geographical region, expanding the spatial coverage of e-participation research (Falco and Kleinhans 2018) and building an understanding of real-life planning practices in post-socialist cities.

The paper is structured in four thematic blocks. The following section describes theoretical considerations underpinning public engagement in the digital age, which provides the basis for analyzing the engagement processes. The third section outlines research design and methods, followed by the description of the contextual similarities and differences among the Baltic States. Finally, the last results' section looks in more detail at specific e-participation approaches and engagement processes.

## **The spectrum of public participation in the digital era**

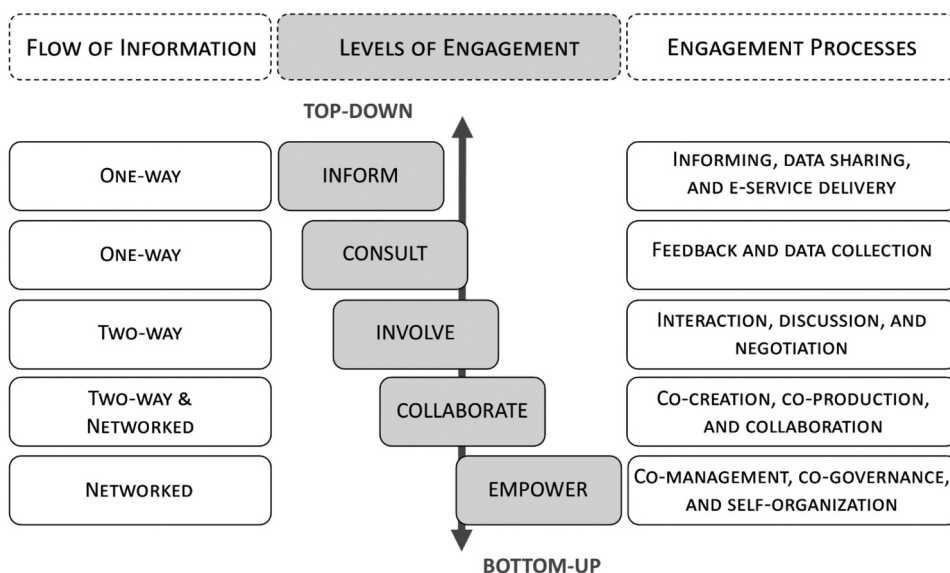
E-participation tools and approaches are constantly evolving parallel to new technologies and the digitalization of various services. Nowadays, e-participation in urban planning does not only use the tools that have been developed for planning purposes but also employs and adopts platforms that have been initially intended for other uses, e.g. social networking sites or social media (Afzalan, Sanchez, and Evans-Cowley 2017). As a result, it creates a broad spectrum of e-participation solutions that are typically used alongside the so-called traditional participatory methods. This intermingling and interdependent use of participatory approaches is called blended or hybrid participation (Kersting 2013), and it is a dominant practice in urban planning.

Despite the prevalence of blended participation, there have been limited attempts to link e-participation with the existing concepts in public engagement, e.g. the Arnstein's Ladder of Citizen Participation (Arnstein 1969) or IAP2 Spectrum of Public Participation (IAP2 International Federation 2018). Kersting (2013) has proposed a framework for blended or hybrid democracy focusing on political participation, but it is only partially transferable to public engagement in urban planning. Several attempts have been made to introduce concepts or frameworks focusing specifically on e-participation. Macintosh (2004) proposed one of the first such concepts introducing three levels of e-participation (e-enabling, e-engaging, and e-empowering). Effing and Groot (2016) have built on this concept and proposed a Social Smart City framework that incorporates the three levels of e-participation and three levels of leadership and control (government, citizen, and network), resulting in nine possible digital strategies. In their turn, Falco and Kleinhans (2018) have proposed a typology of levels of citizen-government relationships, including information sharing, interaction, co-production, and self-organization. There have also been other attempts at introducing some form of classification focusing on one or more aspects of e-participation tools, e.g. level or type of interactivity (McMillan 2002; Williamson and Parolin 2012) or different features of digital solutions (Aikins 2010). Many of these e-participation concepts follow a similar pattern as the more traditional ones but focus on the new aspects

and dimensions enabled by the use of ICTs. They are useful and applicable for analyzing specific e-participation solutions or cases but have limitations for exploring typical participatory strategies. It leaves a gap for an updated (blended) spectrum of public participation that merges the ideas and concepts of both digital and traditional participation.

The proposed spectrum of blended participation (Fig. 1) uses five levels of engagement (IAP2 International Federation 2018) to provide a more nuanced view of interactive participation. It expands the understanding of engagement processes on each level based on information flows and the balance between top-down ('invited') and bottom-up ('invented') participation. It illustrates the ICT-driven changes through the re-definition of engagement processes encompassing traditional, digital, and blended participatory approaches.

The most basic form of public participation is information sharing and dissemination to the general public (Aitken, Haggett, and Rudolph 2016; Falco and Kleinhans 2018; IAP2 International Federation 2018). Rowe and Frewer (2005) have conceptualized it as public communication that ensures one-way information flow aiming at reaching the maximum number of recipients. It is primarily a top-down or government-led process where governmental actors produce and deliver information to the citizens (Macintosh 2004). In the digital era, this process mostly happens online, although local authorities are still required to use both traditional and digital information dissemination channels. The digital solutions have created additional data-sharing opportunities, giving citizens and companies access to existing data and information (Effing and Groot 2016). Moreover, the overall shift towards e-governance or e-government has given way to e-service delivery, characterized as the crudest and most common form of e-participation (Cropf and Benton 2019). Essentially, this participation level is considered passive participation as public involvement or feedback is not



**Figure 1.** The Spectrum of Blended Participation (author's illustration).

expected (Rowe and Frewer 2005). However, its importance has probably grown as access to information and data in different formats throughout the urban planning process enables participation in other ways.

In its turn, public consultation aims to obtain public feedback (Rowe and Frewer 2005; Aitken, Haggett, and Rudolph 2016; IAP2 International Federation 2018). The process is primarily top-down with one-way information flow (Falco and Kleinhans 2018), where citizens are ‘invited’ to contribute their opinions or ideas (Kersting 2013). Although the consultation process involves two-way communication to some degree (Aitken, Haggett, and Rudolph 2016), it is not considered an interactive exchange of opinions characteristic of two-way information flow. The developments in ICTs, especially mobile technologies, have enabled more diverse and accessible forms for feedback and data collection. We can now use crowdsourcing or participatory sensing (Pathak et al. 2019) to collect citizen views, local knowledge, or data on citizens’ habits and behavior in both passive and active ways. Map-based or geospatial solutions, e.g. Public Participation GIS (PPGIS) and Volunteered Geographic Information (VGI), play an increasing role in this process, specifically in urban planning (Zhang 2019). At the same time, the consulting remains episodic, typically collecting citizen ideas and suggestions at the beginning of the planning process to ensure an early engagement or feedback on the proposed planning solutions or draft planning documents. Moreover, Aitken, Haggett, and Rudolph (2016) emphasize that public consultation does not mean that the public’s preferences or concerns are addressed regardless of the amount of information collected. There are little evidence suggesting that generating ‘lay’ knowledge through, e.g. participatory mapping influences land-use planning decisions (Brown, Reed, and Raymond 2020).

The third level on the spectrum of blended participation – involvement – marks the beginning of the two-way or interactive communication between the planning agency and the public (Falco and Kleinhans 2018). Ideally, it should encompass continuous, direct work with the citizens or other stakeholders based on dialogue, discussions, and negotiations (Rowe and Frewer 2005; Effing and Groot 2016; IAP2 International Federation 2018). In reality, active stakeholder involvement typically occurs at specific instances of the planning process. It is still mainly government-led, but the interactive format opens up opportunities for bottom-up initiatives to make a direct appeal for their interests through negotiations. The challenge is to ensure that involvement does not become a consultation process but maintains interactivity through dialogue. The e-participation solutions play more of a supporting role in a blended participatory process at this and following levels of engagement. Nowadays, it is not uncommon that workshop setting is, e.g. combined with online gaming experience for place-based planning (Rexhepi, Filiposka, and Trajkovik 2018) or other digital solutions that can support and facilitate discussions.

Collaboration requires taking another step further and establishing a partnership among different stakeholders for joint plan-making and decision-making (Margerum 2007; IAP2 International Federation 2018). This engagement level is nowadays associated with co-creation and co-production concepts that are often used interchangeably. The leading idea is that collaboration enables the use of each other’s assets, resources, and knowledge to co-produce better outcomes (Puente-Rodríguez et al. 2016; Falco and Kleinhans 2018). The participants are not simply consulted or involved in discussions.

They work together on the same task and develop a shared understanding of the situation and potential solutions (Jankowski and Nyerges 2001). Therefore, collaboration is the engagement level where the top-down and bottom-up initiatives meet and transcend the typical division of roles in the planning process. The ICT solutions can help and level the playing field by ensuring equal access to available data and information, but it essentially requires reframing the relationship among stakeholders towards equal partnership (Kalliomäki 2015) for the process to be successful.

Finally, empowerment characterizes the highest level of public engagement. Two types of empowerment are dominating scholarly literature on public participation: (1) the development of skills and abilities that enable citizens to become active participants, and (2) the enabling of citizens to decide and take action (Oakley 1991). The latter interpretation corresponds to the proposed spectrum of public participation more directly but does not exclude the former. In this sense, empowerment is often associated with co-governance and co-management, especially in natural resources management. Co-governance implies that decisions are made cooperatively among different stakeholders (Iaione 2016), or they are delegated to some form of a participatory body (Fung 2006), leading to power-sharing and possible decentralization (Jentoft 2017). Similarly, co-management suggests delegation of management of the public services and resources to co-operative or a body of stakeholders. Both processes, however, are fraught with challenges; therefore, there are few examples of such approaches in an urban context. One exception could be participatory budgeting that enables citizens to fully engage in the place-based planning process – from generating ideas to developing solutions and deciding the outcome through public voting (Ertiö, Tuominen, and Rask 2019). However, the opinions differ whether participatory budgeting is co-management or a consultative approach (Bassoli 2012).

Another form of empowerment is self-organization which is associated with bottom-up citizen initiatives. Self-organization is defined as initiatives or citizen solutions for spatial interventions that originate in independent community-based networks (Boonstra and Boelens 2011; Falco and Kleinhans 2018) or ‘invented’ spaces (Kersting 2013). These initiatives can be recognized and adopted by governments or require government action based on public demands (Falco and Kleinhans 2018). Nowadays, the widespread use of social networking sites (SNS) that allow a rapid spread of user-generated information and networked or multi-way communication among stakeholders facilitates different forms of self-organization (Norström and Hattinger 2016). This type of self-organization, driven mainly by the community’s self-interests, is changing the relationship between civil society and government agencies (Boonstra and Boelens 2011). The availability of open, uncontrolled, and visible virtual space for engagement creates a platform to promote community interests that have been disregarded by the government (Van Dijk, Aarts, and De Wit 2010). However, Kersting (2013) insists that social media is primarily an instrument for mobilization and only secondly for communication and discussion. It often produces the so-called communication bubbles open for misuse and manipulation.

The proposed spectrum also faces some challenges. First, the levels associated with meaningful participation (involvement, collaboration, and empowerment) are difficult to distinguish. The related engagement processes have different definitions and understandings, allowing multiple interpretations. The same challenge also extends to



participatory approaches or techniques associated with each level (Rowe and Frewer 2005). Moreover, the practical application of each technique can also vary among cases and contexts. Second, the spectrum is primarily applicable for analyzing government-led participatory activities, which is sufficient for studying common urban planning processes but will provide limited insights if applied to bottom-up or citizen-led initiatives. Not all bottom-up initiatives are necessarily correspondent to empowerment. Many can be placed on lower levels of the spectrum, potentially requiring further expansion of understanding for each level (see Kotus (2013)), but that is beyond this research project. Finally, the spectrum does not address the differences among spatial levels or urban planning situations. Although many approaches can be used with equal success on neighborhood and city levels, the practice shows that more meaningful or interactive participation is likely to occur in place-based planning that deals with neighborhood or community level issues.

Consequently, this study uses the proposed spectrum of blended participation as an analytical concept to identify what engagement levels and formats dominate the common government-led participatory processes in urban planning in the Baltic cities. Furthermore, we aim to explore the role of e-participation tools in facilitating the identified engagement processes in different planning situations.

## Research design & methods

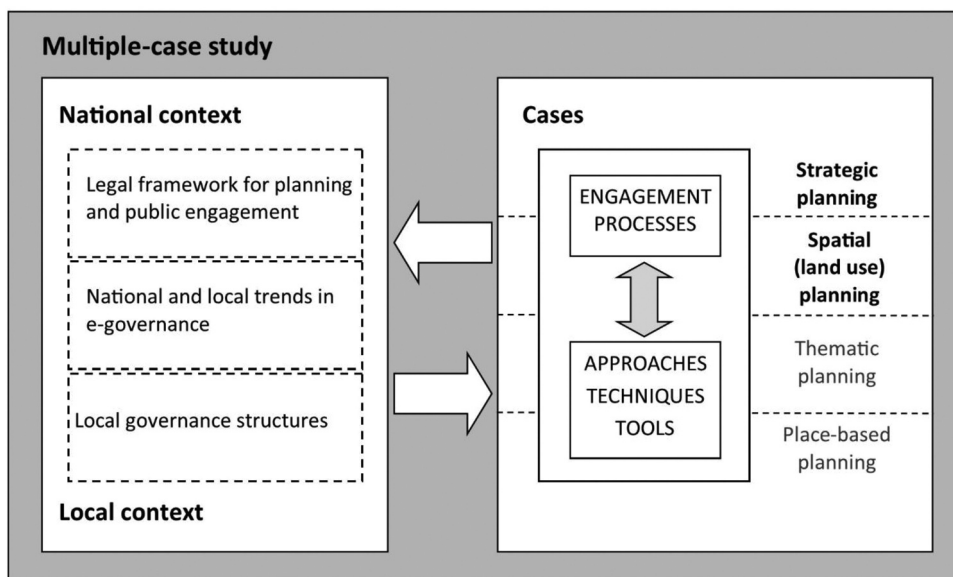
The study is based on a qualitative analysis of multiple cases in three Baltic countries to obtain an in-depth understanding of public engagement and e-participation processes. Incorporating multiple cases ensured greater confidence in the findings (Yin 2011) by using a spectrum of cities and towns in terms of size and significance but within a similar context of post-socialist countries. The study was conducted in two main stages: (1) exploration of national and local context and (2) case study analysis (Fig. 2). The first stage included analysis of the legal framework for planning and public engagement, national and local trends in e-governance, and local governance structures, allowing to establish the contextual similarities and differences. It was essential to build an early understanding of statutory planning processes and municipal governance structures to ground and structure the case study analysis.

The second stage or case study analysis was conducted in two phases: (1) exploration of typical public engagement practices within selected plan-making processes (see Appendix 4) to build an understanding of common participatory processes in urban planning, and (2) analysis of ICT-enabled approaches, techniques, and tools to identify dominant e-participation practices and their role in overall public engagement processes. The aggregated results are presented as context-dependent patterns and trends of e-participation and engagement in urban planning in the Baltic cities.

### Case study selection

Due to the exploratory nature of the study, it was initially planned to build a heterogeneous sample of cases through purposeful sampling (Henry 2009). With a focus on large and medium urban local governments in each Baltic country (19 in total), the aim was to analyze a variety of cases to obtain an understanding of typical





**Figure 2.** Research Design (author's illustration).

e-participation and public engagement practices in urban planning as opposed to known best practice examples that are primarily used in existing studies. However, limited access to the field (data availability and unresponsiveness from the municipalities) led to a pragmatic decision to switch to convenience sampling after the initial attempt to contact representatives of the local municipalities. The only exception was the capital cities (Riga, Tallinn, and Vilnius) which were considered critical cases and essential for demonstrating the current status quo in e-participation in the Baltic states. Additionally, local experts were consulted on potentially cooperative representatives of local municipalities to expand the initial pool of urban local governments and obtain a comparatively balanced set of cases. The resulting selection of 12 cases incorporates a spectrum of small, medium, and large cities and towns with different national, regional, and local importance, demonstrating varying planning and development trends and practices. It has allowed identifying dominant typical practices and trends in e-participation, justifying the choice.

### **Thematic focus**

The research focuses on identifying participatory activities and urban planning strategies in typical planning situations in each case study. Based on the analysis and comparison of planning frameworks in all three Baltic countries, four main planning situations were initially identified:

- Strategic planning, dealing with visions, long-term development strategies, and short-term development programs for the whole city or town;
- Spatial (land use) planning, including preparation of a master plan or a comprehensive spatial plan for the whole city or town that defines land-use zoning;

- Thematic planning, focusing on a specific problem or domain of city life (e.g. mobility, climate change) or addressing a complex issue in a specific part of the city; and
- Place-based planning, including a spectrum of different small-scale government-led and citizen-led planning and development activities (e.g. public space regeneration projects or building projects).

The data collection and analysis proceeded, focusing primarily on strategic and spatial planning using two or three examples of recently completed or ongoing planning processes in each case (see [Appendix 4](#)). Such focus was chosen to maintain the data volume manageable and to ensure the possibility for equal reliance on primary and secondary data due to better documentation of the participatory processes. The differentiation between strategic and spatial planning has been maintained throughout data analysis as these are still regarded or perceived as separate processes in the Baltic context. There are also identifiable differences in process organization and public interest discussed in more detail when describing national and local context.

### ***Data collection***

The data collection was based on a multi-method approach that allowed for each case study to compile a set of primary and/or secondary data. Primary data were obtained using expert interviews (18 in total, [Appendix 1](#)). For this study, an expert was defined as a person possessing technical and/or process-related knowledge (Bogner and Menz 2009) of public engagement in urban planning. Therefore, we primarily targeted planning experts in local authorities or planning consultancy companies that were directly involved in urban planning processes in the selected case studies. The interviewees were initially selected using purposive sampling (Flick 2009) in consultation with the local experts, but we also used snowball sampling to identify other potential interviewees within the institution if some crucial aspects remained unclear during the initial interviews. The interview method was based on systematizing expert interviews that allowed focusing on comparatively systemic and structured retrieval of information (Bogner, Littig, and Menz 2009). A set of initial questions (see [Appendix 2](#)) was used as the basis for preparing a customized interview guide before each interview. The questions were adjusted based on the role and expertise of the interviewee and preliminary analysis of available secondary data. Essentially, the interviewer took on the role of a co-expert to retrieve in-depth information. Due to COVID-19 restrictions, the interviewees were invited to an online meeting or provided an opportunity to submit their answers in a written form (if a meeting was not possible). All interviews were recorded (after obtaining informed consent from the interviewees) and transcribed for data analysis.

Secondary data and information was retrieved from various sources – news items on municipal websites, municipal documents and reports on planning processes and public engagement, publicly available presentations and interviews with key experts, research reports and papers, different web and mobile e-participation tools, social media pages or groups, and websites ([Table 1](#)). The examples of e-participation solutions are summarized in [Appendix 3](#). The secondary sources had greater importance in those cases when representatives of local governments were unresponsive or refused an

**Table 1.** Overview of data sources for each case study (author's compilation).

City/town	Country	Population number <sup>1</sup>	Interview data	Newsfeed data from the municipal website	Municipal reports	Other data
<b>Tallinn</b>	<b>Estonia</b>	<b>426 538</b>	-	<b>15 December 2018 – 15 December 2020</b>	-	+
Tartu	Estonia	93 124	+	15 December 2018 – 15 December 2020	-	+
Valga	Estonia	12 452	+	15 December 2018 – 15 December 2020	-	+
<b>Riga</b>	<b>Latvia</b>	<b>627 487</b>	+	<b>15 December 2018 – 15 December 2020</b>	+	+
Daugavpils	Latvia	82 046	+	15 December 2018 – 15 December 2020	+	+
Jelgava	Latvia	56 062	+	15 December 2018 – 15 December 2020	+	+
Ventspils	Latvia	33 906	+	15 December 2018 – 15 December 2020	-	+
Valmiera	Latvia	23 050	+	15 December 2018 – 15 December 2020	+	+
Jēkabpils	Latvia	21 928	+	15 December 2018 – 15 December 2020	+	+
<b>Vilnius</b>	<b>Lithuania</b>	<b>565 570</b>	+	<b>15 December 2018 – 15 December 2020</b>	+	+
Klaipeda	Lithuania	149 431	-	26 February 2020 – 15 December 2020	+	+
Alytus	Lithuania	49 551	-	1 January 2020 – 15 December 2020	+	+

interview after repeated attempts at communication. For example, publicly available presentations by Tallinn planning experts were used as surrogates for expert interviews or municipal websites dedicated to specific planning documents (e.g. Tallinn Development Strategy ‘Tallinn 2035’) as a replacement for municipal reports. It allowed ensuring an equally balanced amount of secondary information for each case study.

All data collection took place from October 2020 until February 2021, focusing on planning and public engagement practices of the last 2 to 5 years.

### **Data Analysis**

The primary and secondary data were converged and analyzed qualitatively. The obtained information was initially summarized in a separate worksheet (case study protocol (Yin 2011)) for each city or town, outlining local contextual aspects and information on participatory activities, approaches, techniques, and tools using pre-defined topics and questions. When relevant, constructs like previously defined planning situations and stages in the plan-making process were used as additional analytical dimensions. Finally, main similarities and differences across cases were identified as characteristics of current e-participation practices and engagement processes in the Baltic countries.

## Methodological Limitations

The chosen methodological approach has some limitations. The qualitative and explorative character of the study and the chosen sampling methods delivers primarily descriptive results on current e-participation practices limiting the possibilities for generalization beyond the selected cases or geographical region. The thematic focus on strategic and spatial planning provides limited insights into thematic and place-based planning that might reveal more collaborative public engagement formats on community or neighborhood levels. Also, the study took only a superficial look at bottom-up or citizen-led initiatives due to time constraints and the selected research focus. Lastly, practical considerations like language barriers or access to primary data might have impacted the depth of insights from individual cases. Therefore, the results are primarily presented as aggregated sets of patterns and trends to ensure the reliability of the research outcomes.

## Digitalization and e-governance trends in the Baltic States

The digital transformation towards information society has been at the core of EU policies and priorities for almost three decades (Shahin and Finger 2009). The Baltic countries have worked towards digitalization before joining the EU and setting up policy agendas as early as the mid-1990s in Estonia and early 2000s in Latvia and Lithuania. The status quo in the Baltic States is best summarized using EC Digital Economy and Society Index, UN E-Government Development Index, and E-Participation Index (Table 2). Among the three countries, Estonia is leading the way in almost all categories except for the integration of digital technology. It is the world leader in E-Participation Index and it has highly advanced digital public services. As a digital success story, Estonia has been promoted globally, but it has not been successful in all aspects (Kattel and Mergel 2019).

Historically, the e-government vision emerged earlier in Estonia than in Latvia and Lithuania (Kostrikova and Rivza 2017). Estonia focused on developing national ICT

**Table 2.** Summary of digitalization, e-government, and e-participation indexes for each Baltic country (data sources: European Commission (2020a, 2020b, 2020c), United Nations (2021)).

Index	Estonia	Lithuania	Latvia
<b>Digital Economy and Society Index (DESI, 2020)</b>	61.1	53.9	50.7
<b>Scale: 0–100; EU score: 52.6</b>			
Connectivity	51.9	48.9	61.8
(EU score: 50.1)			
Human Capital	66.7	43.8	35.0
(EU score: 49.3)			
Use of Internet Services (EU score: 58.0)	65.4	57.3	54.0
Integration of Digital Technology (EU score: 41.4)	41.1	49.5	28.3
Digital Public Services (EU score: 72.0)	89.3	81.4	85.1
<b>E-Government Development Index (EGDI, 2020)</b>	0.9473	0.8665	0.7798
<b>Scale: 0–1</b>			
Online Service Index	0.99410	0.85290	0.58240
Telecommunication Infrastructure Index	0.92120	0.82490	0.83990
Human Capital Index	0.92660	0.92180	0.91720
<b>E-Participation Index (2020)</b>	1.0000	0.7381	0.5833
<b>Scale: 0–1</b>			

infrastructure early on (Hinsberg, Jonsson, and Karlsson 2013) and followed a pathway of ‘development-driven strategies’ informed by industry and academia (Kattel and Mergel 2019). The digital agenda received widespread cross-party support and has been considered a competitive advantage throughout the last three decades (Kattel and Mergel 2019). The ICT infrastructure development relied on interoperability of digital systems and compulsory national digital ID introduced as early as 2002 (in comparison, e-ID was introduced in Lithuania in 2009 and in Latvia – in 2012) (Kostrikova and Rivza 2017; Kattel and Mergel 2019). Moreover, Estonia focused on digital skills development and integration of digital skills training at all stages of the educational system (INT\_12). However, not everything Estonia introduced turned out to be a success story. The research shows that some of the initiatives, e.g. e-participation portal *Tāna Otsustan Mina* (‘Today I Decide’ or TOM) and its successor *Osale.ee* were largely unsuccessful (Kattel and Mergel 2019; Toots 2019). It ties in with the criticism that besides e-voting, other e-democracy aspects such as civic engagement or open government data have remained relatively weak (McBride et al. 2018; Kattel and Mergel 2019).

Latvia and Lithuania have followed a different pathway towards e-government. Lithuania is catching up with Estonia and overtaking it in aspects like integration of digital technology in the business sector (European Commission 2020c), but Latvia appears to lag behind on nearly all accounts except ICT infrastructure. Latvia is one of the frontrunners in preparation for the deployment of 5G and has made progress in the area of digital public administration. However, the basic and advanced digital skill levels of citizens remain well below the EU average, which hinders progress in all other areas (European Commission 2020b).

Despite the differences, it is possible to observe similar trends in the digitalization of services in urban planning and development on a national level. All three Baltic countries have transitioned to digital-only building management systems in recent years. Moreover, each country has developed a national spatial planning information system – RPIS in Estonia (S1), TPDRIS in Lithuania (S3), and TAPIS in Latvia (S2). The systems are designed to carry out the planning process electronically among local authorities, citizens, and other institutions. In Latvia and Lithuania, the use of the system is mandatory. In Estonia, it is currently optional based on the decision of the local authority or planning agency.

Another key priority on national agendas is open data; however, the recent trends demonstrate relatively low performance, with only Latvia joining the EU cluster of fast-trackers (European Data Portal 2018a, 2018b, 2018c). All three Baltic countries have launched open data portals (S4, S5, S6), but the usability of the portals and the use of the data show low impact. Some municipalities have shared their data on national portals (e.g. Riga and Tartu) or published basic data, including spatial data on their websites (e.g. Tallinn and Riga). Nevertheless, most cases show limited data sharing practice and culture, making it one of the potentially crucial areas of improvement.

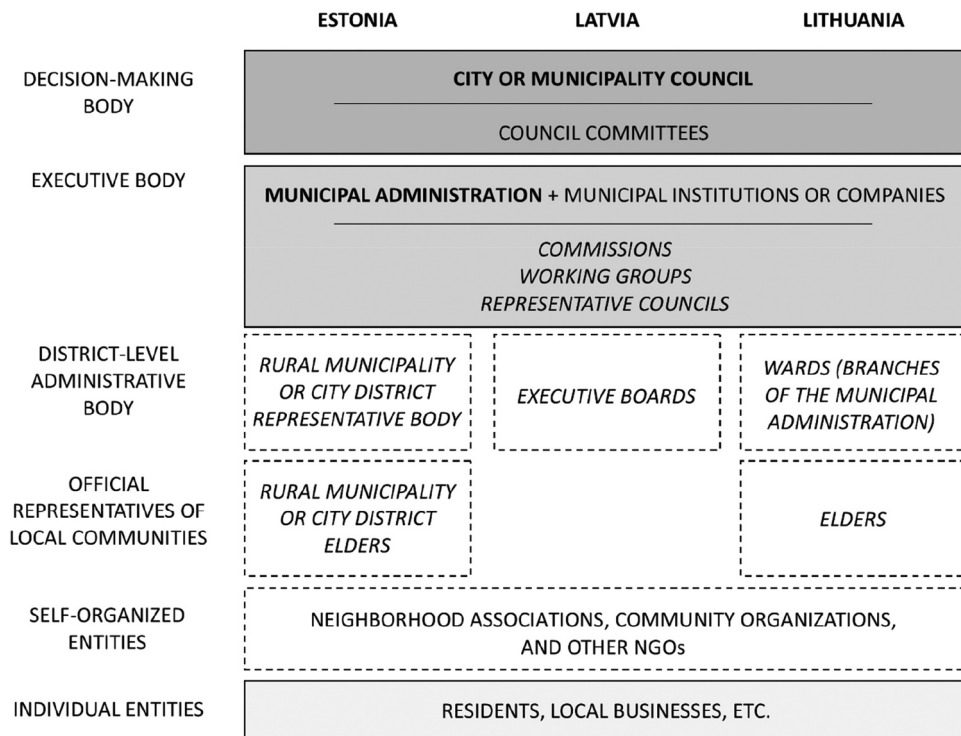
Besides open data, the digitalization trends differ from one case to another on the municipal level also in other aspects. There is a growing interest in smart city solutions for addressing local urban challenges. Some cities (e.g. Tartu) already have a good track record of implementing smart city solutions; others (e.g. Jēkabpils) are launching

different initiatives like crowdsourcing citizen ideas to foster smart city development. Moreover, the smart city concept is one of the dominant drivers for cross-sectoral urban innovation through EU projects, events (hackathons), partnerships, and policies. The bigger cities (Tallinn, Tartu, Vilnius, and Riga) have taken the lead on implementing and promoting smart city agenda, especially when addressing such topical issues as urban mobility or climate change adaptation.

### Governance of urban planning in Baltic municipalities

Municipalities are responsible for strategic and spatial planning on the local level in all three Baltic States. The initiation and approval of planning documents lie within the city or municipal Council's competence, but the responsibilities for preparing and implementing different plans and projects are distributed among governance structures and levels. The analysis of national and local legislation and governance structures of the selected cases allowed to identify the overall pattern in each country, revealing many similarities (Fig. 3).

In all cases, the work of the Council is supported by several Committees comprised mostly of Councilors. The Committees deal with different issues and challenges within the scope of the allocated competence. Typically, the spatial and strategic planning tasks are divided among two or three Committees. The same pattern can be observed on the executive or administrative level. Even when



**Figure 3.** Governance levels and structure in local municipalities (author's illustration).

strategic and spatial planning are housed in one administrative unit, it is usually subdivided into more specific divisions or services. Additionally, municipal institutions or companies often support the municipal administration in dealing with, e.g. maintenance and management of urban infrastructure or public spaces. The municipal government also exerts rights to form commissions, working groups, and other representative bodies with an advisory capacity. These usually include different stakeholders, e.g. Councilors, municipal experts, representatives of NGOs, or local companies. It is common to have at least one commission that deals with urban planning and development. Moreover, it is often the core structure involved in setting the agenda to prepare the main planning documents.

Only a few municipalities prepare their planning documents in-house. The majority prefer to outsource this task to planning consultancy companies due to a lack of competence and resources (INT\_01, INT\_04, INT\_05, INT\_07, INT\_13). The case studies revealed several approaches: (1) the municipal experts prepare the planning documents in-house; if needed, some studies on specific planning topics are outsourced to consultancy companies; (2) the municipality outsources the technical preparation of the planning document to a planning consultancy company, but the main ideas come from the municipal experts; (3) the municipality fully outsources the plan-making process to a planning consultancy company and generally undertakes a supervisory and consultancy role. The chosen approach is often determined by the municipal experts' competence, enthusiasm, and the perception of the planning process – formal or meaningful (INT\_07, INT\_08, INT\_09).

In all three capital cities (Riga, Vilnius, and Tallinn), additional district-level administrative structures- provide some of the municipal services on a more local scale. In Tallinn, the district level has also been chosen for comprehensive (spatial) planning, a unique approach in the region. It is, however, unclear how successful such an approach has been, considering that not all Tallinn's district-level plans have been prepared and approved.

In Lithuania and Estonia, local communities or specific urban areas can have elected or appointed representatives – elders. In Lithuania, it is mainly a voluntary position that allows a local community to select a delegate to represent their interests on higher governance levels. In Estonia, the practice varies among municipalities. However, some of the municipalities that have been enlarged after the administrative-territorial reform and now combine urban and rural areas use village elders to represent citizens from more remote areas (INT\_12). No similar formal structures exist in Latvia; therefore, local communities rely on the non-governmental sector. Several interviewees referred to growing activity in the non-governmental sector over the last five or ten years in all Baltic States (e.g. INT\_02, INT\_11, INT\_15). People tend to self-organize around ideas, issues, and interests and establish non-governmental organizations. All analyzed case studies have support instruments and engagement mechanisms for different NGOs, e.g. commissions or councils of representatives that allow for more direct involvement in decision-making processes. Active local communities or neighborhood associations also tend to be targeted for different working groups when preparing planning documents. However, there is still an open question about the representativeness of these NGOs of the overall population (INT\_02, INT\_11) as they are usually self-appointed community activists, often with a specific socio-demographic background.



Finally, every individual has a right to engage in the decision-making processes. All municipalities have defined basic approaches for public engagement in their statutes or regulations, ranging from the procedures for submitting an application to conducting public discussions, surveys, or petitioning. The study showed that municipalities use several traditional and digital public engagement approaches and techniques for different situations and purposes, including strategic and spatial planning.

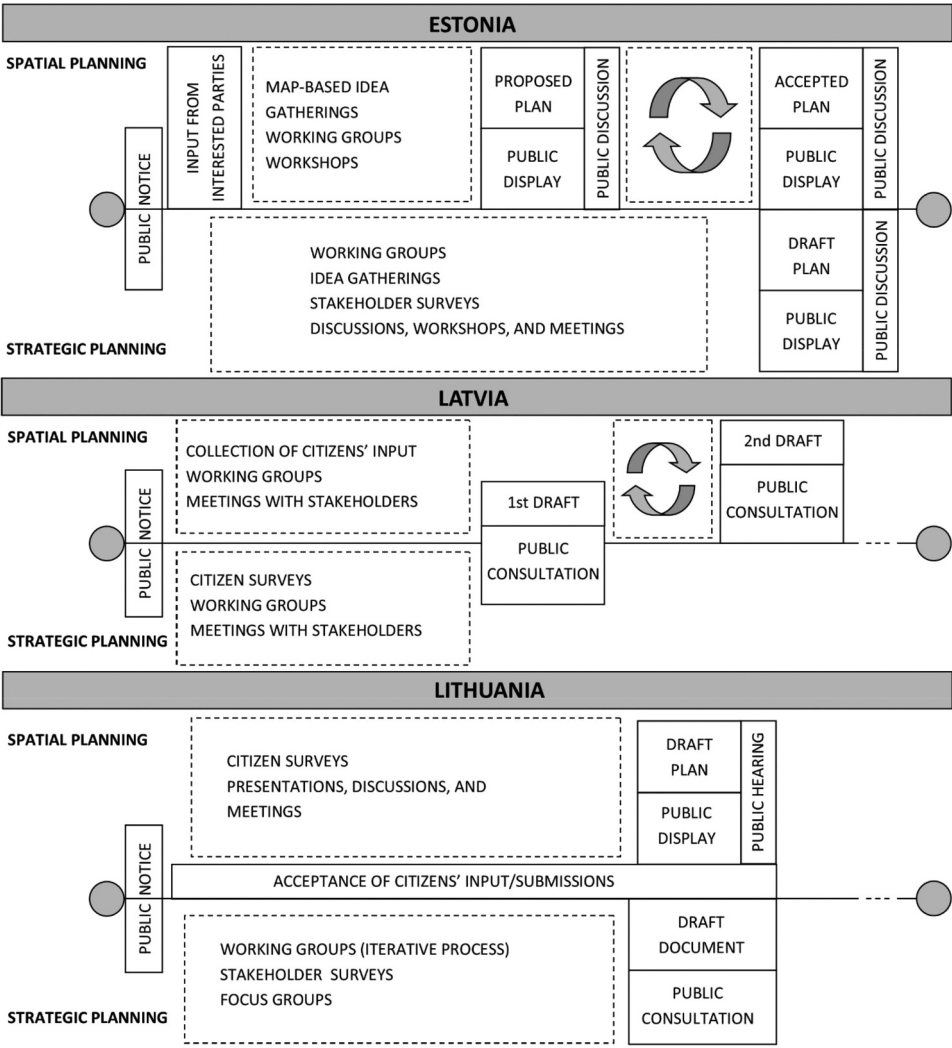
## Urban planning and public engagement in the Baltic cities

The spatial planning systems and practices in the Baltic countries have many similarities. They are decentralized, integrated, and comprehensive but still land-use-oriented (Auziņš, Jürgenson, and Burinskienė 2020). The planning documents include strategic, spatial, and thematic or sectoral plans on the municipal level and place-based spatial and building plans. The spatial planning process is regulated on the national level in all three Baltic States, but strategic planning process – only in Latvia. In Lithuania and Estonia, the state-level legislation on local municipalities defines the requirement for strategic plans, but the planning process is regulated on the municipal level based on national-level recommendations. The case studies demonstrate similar process organization and public engagement patterns with minor differences.

The statutory requirements for public engagement include online and offline information dissemination, acceptance of stakeholders' suggestions during the plan-making process, public display of draft documents, and public consultation during public discussion meetings or hearings. Parallel to these processes, municipalities and planning consultancy companies use other public consultation and involvement approaches due to the consensus that the formally required minimum is insufficient to ensure public support (e.g. INT\_02, INT\_10, INT\_13). Public consultation typically includes citizen surveys, discussions, meetings, and crowdsourcing of citizen ideas using map-based solutions. Public involvement, in its turn, is often organized as thematic working groups or thematic discussions. Overall, there is a tendency to employ online and offline informing and consulting approaches to support traditional engagement. [Figure 4](#) shows summarized and generalized public engagement strategies for strategic and spatial planning (excluding the informing activities that are continuous throughout the process).

The planning process for the major spatial planning documents (comprehensive plans or master plans) usually takes several years and several draft versions with often repeated rounds of public engagement activities. In contrast, the strategic planning process is shorter (one or two years) with more comprehensive public consultation conducted early on and followed up with continuous public involvement in working groups and thematic discussions. A positive tendency towards transparency of the process organization was observed in several cases (e.g. Riga, Tallinn, Alytus, Klaipėda).

Unlike strategic or comprehensive planning, thematic or sectoral planning does not have clearly defined plan-making and public engagement procedures. Municipalities or planning consultancy companies typically rely on the engagement procedures used in strategic or spatial planning (e.g. INT\_06) to prepare thematic plans. However, public engagement in place-based spatial planning (e.g. detailed plans or building projects) usually follows the minimum statutory requirements for public engagement unless it is a planning project of



**Figure 4.** Generalized public engagement strategies for strategic and spatial planning in Baltic cities (author’s illustration).

major significance or attracts a lot of public interest, potentially leading to conflict. Some municipalities that have had several negative antecedents with place-based projects (e.g. Riga and Vilnius) have taken steps to elaborate on these procedures, e.g. Vilnius adopted a procedure for planning and implementing public space projects, incorporating a transparent engagement strategy.

The public interest in planning and development processes varies. On the one hand, the citizen interest in planning issues is growing, especially when it comes to conflicting planning issues or projects (INT\_02, INT\_03, INT\_05, INT\_06, INT\_13, INT\_14, WR\_01). On the other hand, there are cases when citizen activity is low or insufficient (INT\_01, INT\_10). A repeated opinion was that citizens are more interested in spatial (land-use) planning, affecting them directly, than strategic planning (INT\_01, INT\_03,

INT\_09). It was also insinuated that the general public and sometimes politicians do not fully comprehend or understand the purpose of strategic planning (INT\_04, INT\_09). Moreover, the limited public interest is sometimes perceived as positive based on the assumption that the lack of interest or complaints means general satisfaction with the existing situation (INT\_04, INT\_08). It demonstrates a typical attitude or perception of public engagement as an arena for complaints characteristic to the post-socialist context (Grazuleviciute-Vileniske and Urbonas 2014) that is still persistent in local municipalities today.

## **E-participation approaches, techniques, and tools in urban planning**

The analysis of the 12 case studies revealed a set of commonly-used e-participation tools in all three Baltic countries: municipal websites, different social media sites, and online polls and surveys (Table 3). Also, there is comparatively widespread use of map-based solutions both as web and mobile applications; however, not all are employed for planning. Findings on each e-participation tool are further discussed in the following sub-sections.

### ***Municipal websites***

The municipal websites are the primary tool for information dissemination and e-service provision for local citizens. However, they are frequently neglected or difficult to navigate (INT\_09, INT\_12). The websites often have complex structures (especially for larger municipalities), or in some cases, the municipality can have a separate website for each administrative department (e.g. Riga). Sometimes municipalities also launch a website dedicated to a specific planning document (e.g. Klaipeda City Strategic Development Plan for 2021–2030) or process. Moreover, municipal websites rarely ensure direct interaction with the content, municipal experts or decision-makers, or other residents.

The content analysis of newsfeeds on municipal websites revealed some positive trends. The municipalities commonly post announcements on public engagement activities and their outcomes in the main newsfeed. Additionally, municipal websites typically have a dedicated section on urban planning or planning documents. Municipalities must also have a website section dedicated to public engagement in Latvia, but a similar approach was also observed in Lithuania and Estonia. The overall trend appears to be using municipal websites as a platform for initial engagement and informing that is often linked to other solutions.

### ***Social media***

Nowadays, every municipality has a municipal website and a municipal Facebook page. Many municipalities also use Twitter, Instagram, or YouTube, but the number of followers or posts on SNSs demonstrates a preference for Facebook as the primary social media platform. Essentially, it is an equally important information dissemination platform as the municipal website. In some cases, municipalities have several Facebook pages for different departments or purposes, allowing more specific information dissemination for the target audience.

Table 3. Commonly-used e-participation approaches and tools in the case study cities (author's compilation).

E-participation approaches and tools*	Riga	Vilnius	Tallinn	Tartu	Valga	Daugavpils	Jelgava	Ventspils	Valmiera	Jēkabpils	Klaipeda	Alytus
Municipal Websites	++	++	++	++	++	++	++	++	++	++	++	++
Social Media	++	++	++	++	++	++	++	++	++	++	++	++
Online discussion forums	-	-	++	-	-	-	-	+	-	-	++	-
Online polls & surveys	++	++	++	++	++	++	++	++	++	++	++	++
Map-based web solutions	+	++	++	++	++	+	++	-	+	-	++	+
Mobile applications	-	+	++	-	-	+	+	-	+	-	-	+
Participatory budgeting	++	-	++	++	-	-	-	-	-	++	-	++

\*Symbols: '+' used for urban governance; '++' used for urban governance and urban planning; '-' not used

The advantage of information dissemination on social media is the possibility to interact with the content by reacting, sharing, or commenting on it. However, the interviewees said that they received few comments on announcements of public engagement activities unless related to a development or planning project that the public disapproved (INT\_01). Moreover, the municipalities or planning agencies rarely use social media for purposes other than informing. One exception includes Tallinn City municipality, where they created a separate Facebook group that has more than 500 members to discuss the Tallinn Development Strategy ‘Tallinn 2035+’ (S37). In another case, Facebook was used to organize voting for citizen projects in a participatory budgeting process (Jēkabpils). Also, Facebook pages have been developed for specific planning documents to create a one-stop information point, but they do not seem to be used beyond their primary function as informing hubs (INT\_08). Overall, the municipalities view social media platforms as another tool for informing.

Different non-governmental organizations, local communities, or interest groups also increasingly use SNS for information dissemination, consultation, and self-organization. The majority of place-based or interest-based NGOs have a Facebook page or group. It allows creating a virtual community with joint interests or cause, disseminating targeted information, gathering ideas, or engaging in discussions with other like-minded people. During the interviews, such a process was referred to as e-activism, indicating a new format of bottom-up activities (INT\_11, INT\_12).

In cases where there is strong opposition against a development project or trend in the city, social media allows reaching many people and organizing a countermovement quickly. The visibility of the activities of such online groups demands greater accountability from the local municipalities. Some municipalities monitor known SNS groups’ opinions to prepare for the potential conflicting issues and upcoming public engagement activities (INT\_02) or use such groups for testing new ideas (INT\_11). Sometimes an outcry against a development project on SNS is followed by a discussion or deliberation process between the municipality and community groups. It demonstrates the potential to use and abuse social media for different interests. Finally, it is unclear how much of these online activities translate into action or how many people engaging in discussions on SNS about urban planning or urban issues contribute to the plan-making processes.

### ***Online polls & surveys***

Online polls and surveys are among the most commonly used approaches for collecting opinions from a wider group of citizens or stakeholders. With the availability of different services allowing easy design and sharing of questionnaires, planners sometimes choose to prepare and conduct the surveys in-house and disseminate them on municipal websites or social media. However, the municipalities still outsource representative statistical surveys when needed. Overall, municipalities conduct three types of polls or surveys: (1) online surveys to collect ideas or citizen input for a specific planning document; (2) annual surveys (e.g. Valmiera or Alytus), or (3) surveys on specific topics or for specific target groups. Additionally, neighborhood associations or community organizations increasingly use online surveys to collect citizen input on local problems to support their agenda and dialogue with the municipality.

In the plan-making process, surveys are typically used in the early stages to collect initial ideas. In rare cases, surveys are also used to obtain opinions on the proposed development priorities or directions. The surveys can target citizens or other stakeholders, e.g. entrepreneurs (Daugavpils, Valga) or community organizations. In Latvia, the surveys are primarily used to prepare the strategic planning documents as suggested in the national methodological guidelines. In Estonia and Lithuania, the surveys are equally used for spatial and strategic planning. Overall, surveys are perceived as a good solution to get a sense of the public opinion on existing problems or development trends (INT\_09), although the results typically have only advisory character.

The challenge with using online surveys and polls is the representativeness of the results. Although online surveys can obtain hundreds or thousands of responses, they are rarely statistically representative of the overall population. In some cases, municipalities use hybrid approaches, disseminating paper-based surveys among specific target groups (INT\_01, INT\_02), but it does not guarantee a statistically representative sample. Moreover, not all planners or organizations are skilled enough to prepare a well-designed survey questionnaire (INT\_01) or critically assess the results based on the obtained sample. It can result in a biased view on the existing urban challenges creating an incomplete picture for agenda-setting.

### ***Map-based solutions***

Map-based or geospatial solutions are gaining popularity in the plan-making processes worldwide. In the Baltic States, the municipalities use local geospatial solutions for informing and consulting purposes. The most commonly used are so-called problem-reporting maps, informing maps, and applications for crowdsourcing citizen ideas or feedback on different topics (e.g. S18, S20, S29). Informing maps typically are thematic maps that visualize different data or map-based web applications displaying detailed plans and projects in various preparation stages (e.g. S16, S19, S28).

The problem-reporting maps allow citizens to report a problem (e.g. a rubbish pile, pot-hole, or other damage to the public infrastructure) to help municipal or other services ensure urban management and maintenance. They are equally widely used in Estonia and Lithuania and currently gaining popularity also in Latvia. The majority of these solutions also have a mobile application allowing to report situations on the go and add visual material. In Estonia, the Ministry of Interior has developed a problem-reporting map and mobile application for the whole country (S11). In Lithuania and Latvia, the cities use external services (S25) or have developed local solutions (S23, S24, S30), often funded within the EU projects.

Applications for crowdsourcing citizen ideas or input have become common in Estonian cities (INT\_13, INT\_16). Municipalities or planning consultancy companies typically organize an idea gathering at the early stages of the plan-making process of the spatial plans and repeated idea gatherings during the public consultation on the plan's draft version (e.g. S15, S17). In Latvia and Lithuania, the case studies revealed a limited number of examples of similar planning practices. In Latvia, a planning consultancy company has launched a crowdsourcing map application used for spatial planning on the city or neighborhood level, but it is still at the early stages of development (S21). In

Lithuania, Vilnius is leading the way to implementing various geospatial solutions on a par with Tallinn. Overall, it is unclear why such differences exist among the Baltic cities, but the interviewees referred to lack of resources, competence, and political support as the dominant reasons in Latvia (INT\_01, INT\_03).

Other recent trends include city geoportals that provide one-stop access to different map applications, maps, and geospatial data (S12, S26), 3D city maps (S14, S22, S27, S31), and dashboards to display real-time information (S13). 3D city maps are particularly useful for place-based development and building projects. In Vilnius, the 3D map model is essential for evaluating the initial project proposals. Moreover, Vilnius is the first city to open all the information about the projects currently underway in the city on their 3D map model (Vilnius city municipality 2020a).

Overall, map-based solutions have shown to be a valuable and engaging tool that can complement a public consultation process for plan-making or urban management. The Estonian experience shows the advantages of collecting georeferenced citizen input, especially if combined with a follow-up deliberation process. It allows for designing diverse data and idea collection processes that facilitate more meaningful public engagement.

### ***Mobile applications***

Mobile applications can engage citizens in urban planning processes on the go as passive and active participants. The existing solutions in the world demonstrate a broad spectrum of usage (Ertiö 2015, 2018). However, the use of mobile applications for citizen engagement and urban planning in the Baltic States has been relatively low. Almost all researched municipalities are using or have adopted mobile apps for specific services, e.g. transportation or tourism. In Estonia and Lithuania, those municipalities that use external solutions for problem-reporting maps also have mobile apps with the same functionality. In Latvia, three case study cities have launched municipal apps (S33, S34, S35) as an interactive informing and communication tool for citizens and visitors. These typically provide news and event updates, local e-services, problem-reporting opportunities, the contact information of the officials, polls, and other functionalities. Although these applications are not directly used in urban planning, they are important in adopting mobile technologies for municipal work. At least one municipality has expressed that they are looking into using the existing solution for planning (WR\_03).

Tallinn City municipality has developed a mobile app specifically for citizen engagement in urban planning (S32). AvaLinn application was co-designed with citizens and other stakeholders to develop its functionality and design as user-friendly as possible (Baltic Urban Lab 2016). The mobile app has two-fold functionality: it provides up-to-date information on ongoing detailed plan-making processes and runs idea gatherings on specific projects (one at a time). The idea gatherings are used to collect citizen feedback on proposed design solutions. The users can rate (like/dislike), comment and discuss the proposed solutions, and suggest their development ideas. The results are then used in a follow-up deliberation process, especially for those solutions that received lower public support. According to the municipal experts, the experience with the app has been generally positive, and they see it as a helpful tool for discussion of place-based projects at the stage when initial planning solutions are ready. The municipality is also looking into



opportunities to expand the app's functionality and use (Rannama and Kargaja 2018). Overall, it demonstrates the potential of mobile apps to complement the public engagement process as an interactive informing and consulting tool.

### ***Participatory budgeting***

Participatory budgeting is an approach that has grown in popularity worldwide in the last decades. It has also arrived in the Baltic States in recent years, with Estonia being the first to adopt the approach on a local scale. About 30 municipalities in Estonia use a participatory budgeting model for citizen engagement and empowerment (INT\_12, INT\_15). Tartu was the first city in Estonia to launch participatory budgeting in 2013 (INT\_15), whereas Tallinn finalized its first participatory budgeting process in January 2021. In Lithuania, the pioneer in adopting participatory budgeting is the city of Alytus (since 2018), and Klaipeda plans to follow suit in 2021. In Latvia, the first participatory budgeting process took place in Riga in 2019, although Jēkabpils started using a similar small-scale process around the same time.

The model for the participatory budgeting process is slightly different in each case. The common idea is to support bottom-up infrastructure projects and engage citizens throughout the process. In most cases, any citizen or non-governmental organization can submit an idea proposal. A commission, comprised of Councilors, municipal experts, or representatives of NGOs, then assesses and evaluates the ideas based on eligibility criteria. In some cases, the commission selects a shortlist of projects for public voting; in others – all eligible projects are put to a public vote. In more complex processes, selecting a shortlist of projects includes an intensive deliberation and discussion process (e.g. Tartu). Public voting generally takes place online (e.g. S38, S39), although some municipalities also offer offline voting opportunities. In all cases, the citizen voting results were decisive for funding decisions.

Overall, participatory budgeting tends to have an empowering impact on the local society and their interest in urban processes. One interviewee said that participatory budgeting was a big push towards more participatory democracy at the local level (INT\_12). Another expressed that it influences other participatory processes – not only citizens are more empowered and expect greater engagement, but also municipal experts are learning from the experience how to prepare better participatory processes (INT\_15). It shows that designing comprehensive engagement for place-based projects with online and offline components leading to a tangible and transparent result can have a broader transforming impact.

### ***Other trends***

Not all known e-participation approaches, techniques, and tools were prevalent in the analyzed case studies. For example, online discussion forums that were highly popular in the pre-social media era are now rarely used (S36, S40). They have been transformed into discussion groups or threads on social media, posing new challenges for analysis due to networked information flows and varying input quality. If online discussions have transitioned to new platforms and formats, some newer e-participation trends were not identified. For example, online gaming and gamification of e-participation

processes are promising approaches for urban planning and engagement of younger people. However, the case studies revealed no existing practices beyond a couple of pilot tests, e.g. a Minecraft gaming pilot activity in Riga (Riga City Council City Development Department 2020). Similarly, advanced solutions based on augmented or virtual reality are not used outside pilot cases within EU-funded projects. Overall, it shows that there is room for further growth and experimentation.

In the meantime, the global pandemic has forced municipalities to turn to greater online engagement and service provision. Research on changes in the public engagement processes and quality should be forthcoming, but some of the case studies revealed that there might be advantages in using an online environment for traditional engagement approaches like public discussions. The Chief Architect of Vilnius has expressed that many more people attend the online public discussions of development projects than real-life discussions. He also said that the meetings were more constructive, efficient, and rational and should be continued after the pandemic (Vilnius city municipality 2020b). Some interviewees, in their turn, refer to webinars and simultaneously online and offline meetings as a new learning process (INT\_02). The existing circumstances and practices show potential for using blended approaches to ensure broader public involvement.

Some typical bottom-up initiatives have also transitioned to the online environment in the last decade. Nowadays, petitioning usually takes place on e-petitioning or social initiative platforms (S7, S8, S9, S10). These can be either governmental or non-governmental platforms that allow citizens to self-organize around common ideas or issues. In urban planning, it typically translates into an e-petition against an unwanted development project with hundreds or thousands of signatures submitted to the local authority or other institutions. It is generally a reactive public process resulting from insufficient public engagement in the earlier planning stages. And unlike self-organization on SNSs, e-petitions are one-off self-organized initiatives used as the last resort to promote public interests.

## Discussion & Conclusions

All three Baltic States demonstrate similar tendencies in planning practices and local governance, with Estonia leading the way in e-governance and e-participation. It is possible to observe a shift from reactive to proactive public engagement in strategic and spatial planning aimed at reducing conflicting situations with early stakeholder involvement and more collaborative, participatory strategies. There is also a growing understanding and acceptance of the public engagement among different stakeholder groups, although it is still predominantly based in the culture of complaint, mistrust, uncertainty, and pessimism associated with the post-socialist context (Grazuleviciute-Vileniske and Urbonas 2014).

The shift in participatory planning practice in the Baltic States occurs alongside the digitalization of public services and participatory processes. The results show that e-participation has become an integral part of the current city planning practices in all three Baltic States. It is possible to identify a basic set of online tools (websites, social media, online surveys, and polls) that have become standard components of public engagement in strategic and spatial planning and urban management. However, their government-led use generally

mimics traditional engagement activities in the online environment, primarily contributing to the diversification of informing and consulting processes.

The e-participation has a more meaningful impact when combined with a follow-up deliberation and results' discussion characteristic of involvement processes. Such practices using map-based solutions for the collection of georeferenced citizen input are typically employed in spatial planning in Estonia but only rarely in Latvia and Lithuania. In essence, involvement and collaboration still rely on traditional engagement approaches like working groups, workshops, and different forms of discussions. These, however, have also been forced to switch to online or mixed formats, requiring new adjustments in process organization.

The highest level of public engagement – empowerment – is an emerging trend in those cities that have adopted participatory budgeting for place-based urban initiatives. It has facilitated the change in the perception of participation as a process with no or limited outcome to one with transparent decision-making and tangible results. Additionally, there is an equally prevalent trend of social-media-driven self-organization or e-activism in all three Baltic countries. It has led to higher visibility and vocalization of different urban issues demanding greater transparency, accountability, and civic involvement. Both trends are driving more systematic changes in participatory processes, especially in those municipalities with a history of serious conflicts.

Although significant and transformative for post-socialist cities, the identified e-participation approaches and processes are still characteristic of what Potts (2020) termed a *Planning 2.0* paradigm. The technological advancements necessary for a shift to *Planning 3.0* are occurring worldwide, but their adoption in urban governance and planning is still lacking in the Baltic countries. We essentially see a similar implementation gap that has been identified with other digital solutions, e.g. planning support systems (Te Brömmelstroet 2013). However, the gap appears to be longer for post-socialist countries compared to the Western world due to limited resources, capacities, and support for innovation. Moreover, the post-socialist society is still learning to trust the technology, trust the process, and believe in its impact on their way to truly meaningful participatory processes.

The future of e-participation in urban planning lies in blended and iterative engagement combining offline and online approaches for public participation. It requires shifting the focus away from specific solutions to designing comprehensive engagement processes and ensuring the capacity building of the participants. We also need to have a closer look at societal perspectives on participation in urban planning to be able to design such processes. It requires evaluation or assessment of participatory strategies and techniques (both online and offline) to obtain the essential feedback for understanding what works, what does not work, and for what societal groups. It will allow identifying and avoiding risks or pitfalls associated with a growing reliance on e-participation (e.g. unequal access to digital services or limited digital literacy) that was never meant to fully replace traditional engagement methods. Maybe then we will move beyond participatory processes designed for the 'usual suspects' or more affluent social groups towards more inclusive, fair, and empowering public engagement.

## Notes

1. Population data for Latvia obtained from the Central Statistical Bureau of Latvia (Population at the beginning of the year, 2020); for Estonia – from Statistics Estonia (Population number, 2017, before administrative reform); for Lithuania – from Statistics Lithuania (Number of permanent residents on 1 July, preliminary data for 2020).
2. Since the submission of the article, the district-level administrative bodies in Riga (Executive Boards) have been replaced with Neighborhood Centres to primarily ensure information dissemination, communication, and collaboration with neighborhood and community organizations.

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## References

- Afzalan, N., T. W. Sanchez, and J. Evans-Cowley. 2017. “Creating Smarter Cities: Considerations for Selecting Online Participatory Tools.” *Cities* 67: 21–30. doi:[10.1016/j.cities.2017.04.002](https://doi.org/10.1016/j.cities.2017.04.002).
- Aikins, S. K. 2010. “Participatory E-Planning: Bridging Theory and Practice through Improvements in Technology.” In *Politics, Democracy and E-government: Participation and Service Delivery*, edited by C. G. Reddick, 131–150. Hershey: IGI Global.
- Aitken, M., C. Haggett, and D. Rudolph. 2016. “Practices and Rationales of Community Engagement with Wind Farms: Awareness Raising, Consultation, Empowerment.” *Planning Theory & Practice* 17 (4): 557–576. doi:[10.1080/14649357.2016.1218919](https://doi.org/10.1080/14649357.2016.1218919).
- Alarabiat, A., D. S. Soares, and E. Estevez. 2016. “Electronic Participation with A Special Reference to Social Media - A Literature Review.” In *Electronic Participation. ePart 2016*, edited by E. Tambouris, P. Panagiotopoulos, Ø. Sæbø, M. A. Wimmer, T. A. Pardo, Y. Charalabidis, D. S. Soares, and T. Janowski, 41–52. Cham: Springer International Publishing.
- Arnstein, S. R. 1969. “A Ladder Of Citizen Participation.” *Journal of the American Institute of Planners* 35 (4): 216–224. doi:[10.1080/01944366908977225](https://doi.org/10.1080/01944366908977225).
- Åström, J., and M. Karlsson. 2016. “Will e-Participation Bring Critical Citizens Back In?” In *Electronic Participation. 8th IFIP WG 8.5 International Conference, ePart 2016, Guimarães, Portugal, September 5-8, 2016, Proceedings*, edited by E. Tambouris, P. Panagiotopoulos,

- Ø. Sæbø, M. A. Wimmer, T. A. Pardo, Y. Charalabidis, D. S. Soares, and T. Janowski, 83–93, Cham: Springer International Publishing.
- Aužiņš, A., E. Jürgenson, and M. Burinskienė. 2020. “Comparative Analysis of Spatial Planning Systems and Practices: Changes and Continuity in Baltic Countries.” In *Methods and Concepts of Land Management: Diversity, Changes and New Approaches*, edited by E. Hepperle, J. Paulsson, V. Maliene, R. Mansberger, A. Aužiņš, and J. Valciukiene, 13–22. Zürich: Vdf Hochschulverlag AG an der ETH Zürich.
- Baltic Urban Lab. 2016. Citizens Invited to Develop Tallinn’s Urban Planning Application. <http://www.balticurbanlab.eu/news/citizens-invited-develop-tallinn’s-urban-planning-application>.
- Bassoli, M. 2012. “Participatory Budgeting in Italy: An Analysis of (Almost Democratic) Participatory Governance Arrangements.” *International Journal of Urban and Regional Research* 36 (6): 1183–1203. doi:10.1111/j.1468-2427.2011.01023.x.
- Bogner, A., B. Littig, and W. Menz. 2009. “Introduction: Expert Interviews — An Introduction to a New Methodological Debate.” In *Interviewing Experts*, edited by A. Bogner, B. Littig, and W. Menz, 1–13. London: Palgrave Macmillan UK.
- Bogner, A., and W. Menz. 2009. “The Theory-Generating Expert Interview: Epistemological Interest, Forms of Knowledge, Interaction.” In *Interviewing Experts*, edited by Bogner A., B. Littig, and W. Menz, 43–80. London: Palgrave Macmillan UK.
- Bonsón, E., D. Perea, and M. Bednárová. 2019. “Twitter as a Tool for Citizen Engagement: An Empirical Study of the Andalusian Municipalities.” *Government Information Quarterly* 36 (3): 480–489. doi:10.1016/j.giq.2019.03.001.
- Boonstra, B., and L. Boelens. 2011. “Self-organization in Urban Development: Towards a New Perspective on Spatial Planning.” *Urban Research & Practice* 4 (2): 99–122. doi:10.1080/17535069.2011.579767.
- Brown, G., and M. Kyttä. 2014. “Key Issues and Research Priorities for Public Participation GIS (PPGIS): A Synthesis Based on Empirical Research.” *Applied Geography* 46: 122–136. doi:10.1016/j.apgeog.2013.11.004.
- Brown, G., P. Reed, and C. M. Raymond. 2020. “Mapping Place Values: 10 Lessons from Two Decades of Public Participation GIS Empirical Research.” *Applied Geography* 116: 102156. doi:10.1016/j.apgeog.2020.102156.
- Conroy, M. M., and J. Evans-Cowley. 2006. “E-Participation in Planning: An Analysis of Cities Adopting On-Line Citizen Participation Tools.” *Environment and Planning. C, Government & Policy* 24 (3): 371–384. doi:10.1068/c1k.
- Cropf, R. A., and M. Benton. 2019. “Towards a Working Model of e-Participation in Smart Cities: What the Research Suggests.” In *E-Participation in Smart Cities: Technologies and Models of Governance for Citizen Engagement*, edited by M. P. Rodríguez Bolívar, and L. Alcaide Muñoz, 99–121. Cham: Springer.
- Effing, R., and B. P. Groot. 2016. *Social Smart City: Introducing Digital and Social Strategies for Participatory Governance in Smart Cities*. H.J. Scholl, O. Glassey, M. Janssen, B. Klievink, I. Lindgren, P. Parycek, E. Tambouris, M. Wimmer, T. Janowski, and D. Sá Soares, Eds. *Electronic Government. EGOV 2016*. 9820. Lecture Notes in Computer Science, Cham: Springer International Publishing 241–252.
- Ertiö, T. 2013. *M-participation: the emergence of participatory planning applications 6b/2013*. Turku: The City of Turku Administration. [https://www.turkuai.fi/sites/default/files/atoms/files/tutkimuskatsauksia\\_2013-6b.pdf](https://www.turkuai.fi/sites/default/files/atoms/files/tutkimuskatsauksia_2013-6b.pdf).
- Ertiö, T.-P. 2015. “Participatory Apps for Urban Planning—Space for Improvement.” *Planning Practice & Research* 30 (3): 303–321. doi:10.1080/02697459.2015.1052942.
- Ertiö, T.-P. 2018. *Plan on the Move: Mobile Participation in Urban Planning*. Dissertation. University of Turku. <https://www.utupub.fi/bitstream/handle/10024/144328/AnnalesB449.pdf?sequence=5>.
- Ertiö, T.-P., P. Tuominen, and M. Rask. 2019. “Turning Ideas into Proposals: A Case for Blended Participation during the Participatory Budgeting Trial in Helsinki.” In *Electronic Participation. 11th IFIP WG 8.5 International Conference, ePart 2019 San Benedetto Del Tronto, Italy, September 2–4*,

- 2019 *Proceedings*, edited by P. Panagiotopoulos, N. Edelmann, O. Glassey, G. Misuraca, P. Parycek, T. Lampoltshammer, and B. Re, 15–25. Cham: Springer International Publishing.
- European Commission, 2020a. Digital Economy and Society Index (DESI) 2020: Estonia. [https://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=66911](https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=66911).
- European Commission, 2020b. Digital Economy and Society Index (DESI) 2020: Latvia. [https://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=66919](https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=66919).
- European Commission, 2020c. Digital Economy and Society Index (DESI) 2020: Lithuania. [https://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=66922](https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=66922).
- European Data Portal, 2018a. Country Factsheet: Lithuania. [https://www.europeandataportal.eu/sites/default/files/country-factsheet\\_lithuania\\_2018.pdf](https://www.europeandataportal.eu/sites/default/files/country-factsheet_lithuania_2018.pdf).
- European Data Portal, 2018b. Country Factsheet: Estonia. [https://www.europeandataportal.eu/sites/default/files/country-factsheet\\_estonia\\_2018.pdf](https://www.europeandataportal.eu/sites/default/files/country-factsheet_estonia_2018.pdf).
- European Data Portal, 2018c. Country Factsheet: Latvia. [https://www.europeandataportal.eu/sites/default/files/country-factsheet\\_latvia\\_2018.pdf](https://www.europeandataportal.eu/sites/default/files/country-factsheet_latvia_2018.pdf).
- Falco, E., and R. Kleinhans. 2018. “Digital Participatory Platforms for Co-Production in Urban Development.” *International Journal of E-Planning Research* 7 (3): 52–79. doi:10.4018/IJEPR.2018070105.
- Flick, U. 2009. *An Introduction to Qualitative Research*. 4th ed. London: SAGE Publications.
- Fung, A. 2006. “Varieties of Participation in Complex Governance.” *Public Administration Review* 66 (s1): 66–75. doi:10.1111/j.1540-6210.2006.00667.x.
- Granier, B., H. Kudo. 2016. “How are Citizens Involved in Smart Cities? Analysing Citizen Participation in Japanese ‘Smart Communities’.” *Information Polity* 21 (1): 61–76. doi:10.3233/IP-150367.
- Grazuleviciute-Vileniske, I., and V. Urbonas. 2014. “Urban Regeneration in the Context of post-Soviet Transformation: Lithuanian Experience.” *Journal of Cultural Heritage* 15 (6): 637–643. doi:10.1016/j.culher.2014.01.002.
- Haro-de-Rosario, A., A. Sáez-Martín, and M. Del Carmen Caba-pérez. 2018. “Using Social Media to Enhance Citizen Engagement with Local Government: Twitter or Facebook?” *New Media & Society* 20 (1): 29–49. doi:10.1177/1461444816645652.
- Henry, G. T. 2009. “Practical Sampling.” In *The SAGE Handbook of Applied Social Research Methods*, edited by L. Bickman and D. J. Rog, 77–105. Thousand Oaks, California: SAGE Publications.
- Hinsberg, H., M. Jonsson, and M. Karlsson. 2013. “e-Participation Policy in Estonia.” In *Citizen Centric E-participation: A Trilateral Collaboration for Democratic Innovation*, edited by J. Åström, H. Hinsberg, M. Jonsson, and M. Karlsson, 17–30. Tallinn: Praxis Center for Policy Studies. [http://pdc.ceu.hu/archive/00006789/01/PASOS\\_e-participation\\_2013.pdf](http://pdc.ceu.hu/archive/00006789/01/PASOS_e-participation_2013.pdf).
- Iaione, C. 2016. “The CO-City: Sharing, Collaborating, Cooperating, and Commoning in the City.” *American Journal of Economics and Sociology* 75 (2): 415–455. doi:10.1111/ajes.12145.
- IAP2 International Federation, 2018. IAP2 Spectrum of Public Participation. [https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum\\_8.5x11\\_Print.pdf](https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf).
- Jankowski, P., and T. Nyerges. 2001. “GIS-Supported Collaborative Decision Making: Results of an Experiment.” *Annals of the Association of American Geographers* 91 (1): 48–70. doi:10.1111/0004-5608.00233.
- Jentoft, S. 2017. “Small-scale Fisheries within Maritime Spatial Planning: Knowledge Integration and Power.” *Journal of Environmental Policy & Planning* 19 (3): 266–278. doi:10.1080/1523908X.2017.1304210.
- Kahila-Tani, M., A. Broberg, M. Kytä, and T. Tyger. 2016. “Let the Citizens Map—Public Participation GIS as a Planning Support System in the Helsinki Master Plan Process.” *Planning Practice & Research* 31 (2): 195–214. doi:10.1080/02697459.2015.1104203.
- Kahila-Tani, M., M. Kytä, and S. Geertman. 2019. “Does Mapping Improve Public Participation? Exploring the Pros and Cons of Using Public Participation GIS in Urban Planning Practices.” *Landscape and Urban Planning* 186: 45–55. doi:10.1016/j.landurbplan.2019.02.019.
- Kalliomäki, H. 2015. “Reframing Strategic Spatial Planning as a ‘Coproductive Trading Zone’ between State-led and Place-based Interests: Reflections from Maryland and Finland.” *Land Use Policy* 42: 113–123. doi:10.1016/j.landusepol.2014.07.008.



- Kattel, R., and I. Mergel. 2019. "Estonia's Digital Transformation: Mission Mystique and the Hiding Hand." In *Great Policy Successes*, edited by M. Compton and P. 't Hart, 143–160. Oxford: Oxford University Press.
- Kersting, N. 2013. "Online Participation: From 'Invited' to 'Invented' Spaces." *International Journal of Electronic Governance* 6 (4): 270. doi:10.1504/IJEG.2013.060650.
- Kleinhans, R., M. Van Ham, and J. Evans-Cowley. 2015. "Using Social Media and Mobile Technologies to Foster Engagement and Self-Organization in Participatory Urban Planning and Neighbourhood Governance." *Planning Practice & Research* 30 (3): 237–247. doi:10.1080/02697459.2015.1051320.
- Kostrikova, N., and B. Rivza. 2017. E-government and E-participation Development in Baltic States: Comparison of Estonia, Latvia, Lithuania. In: *Proceedings of the 2017 International Conference "ECONOMIC SCIENCE FOR RURAL DEVELOPMENT"*, 27–28 April 2017, Jelgava, LLU ESAF. 118–126.
- Kotus, J. 2013. "Position of the Polish City on the Ladder of Public Participation: Are We Going the Right Way? The Case of Poznań." *Cities* 35: 226–236. doi:10.1016/j.cities.2013.08.001.
- Kubicek, H., and G. Aichholzer. 2016. "Closing the Evaluation Gap in e-Participation Research and Practice." In *Evaluating e-Participation: Frameworks, Practice, Evidence*, edited by G. Aichholzer, H. Kubicek, and L. Torres, 11–46. Cham: Springer International Publishing.
- Macintosh, A., 2004. Characterizing E-participation in Policy-making. In: *Proceedings of the 37th Annual Hawaii International Conference on System Sciences*, 5–8 January 2004 Big Island, HI, USA. IEEE, 10 pp.
- Margerum, R. D. 2007. "Overcoming Locally Based Collaboration Constraints." *Society & Natural Resources* 20 (2): 135–152. doi:10.1080/08941920601052404.
- McBride, K., M. Toots, T. Kalvet, and R. Krimmer. 2018. "Leader in e-Government, Laggard in Open Data: Exploring the Case of Estonia." *Revue française d'administration publique* 3 (167): 613–625. doi:10.3917/rfap.167.0613.
- McMillan, S. J. 2002. "A Four-part Model of Cyber-interactivity: Some Cyber-places are More Interactive than Others." *New Media & Society* 4 (2): 271–291. doi:10.1177/14614440222226370.
- Naranjo-Zolotov, M., T. Oliveira, F. Cruz-Jesus, J. Martins, R. Gonçalves, F. Branco, and N. Xavier. 2019. "Examining Social Capital and Individual Motivators to Explain the Adoption of Online Citizen Participation." *Future Generation Computer Systems* 92: 302–311. doi:10.1016/j.future.2018.09.044.
- Narooie, M. 2014. Boosting Public Participation in Urban Planning Through the Use of Web GIS Technology: A Case Study of Stockholm County. Master's thesis. KTH Royal Institute of Technology. <http://kth.diva-portal.org/smash/get/diva2:732800/FULLTEXT01.pdf>.
- Nedović-Budić, Z. 2001. "Adjustment of Planning Practice to the New Eastern and Central European Context." *Journal of the American Planning Association* 67 (1): 38–52. doi:10.1080/01944360108976354.
- Norström, L., and M. Hattinger. 2016. "Efforts at the Boundaries: Social Media Use in Swedish Municipalities." In *Electronic Participation. 8th IFIP WG 8.5 International Conference, ePart 2016 Guimarães, Portugal, September 5–8, 2016 Proceedings*, edited by E. Tambouris, P. Panagiotopoulos, Ø. Sæbø, M. A. Wimmer, T. A. Pardo, Y. Charalabidis, D. S. Soares, and T. Janowski, 123–137, Cham: Springer International Publishing.
- Oakley, P. 1991. "The Concept of Participation in Development." *Landscape and Urban Planning* 20 (1–3): 115–122. doi:10.1016/0169-2046(91)90100-Z.
- Pathak, S., R. D. Garg, D. Jato-Espino, V. Lakshmi, and C. S. P. Ojha. 2019. "Evaluating Hotspots for Stormwater Harvesting through Participatory Sensing." *Journal of Environmental Management* 242: 351–361. doi:10.1016/j.jenvman.2019.04.082.
- Potts, R. 2020. "Is a New 'Planning 3.0' Paradigm Emerging? Exploring the Relationship between Digital Technologies and Planning Theory and Practice." *Planning Theory & Practice* 21 (2): 272–289. doi:10.1080/146449357.2020.1748699.
- Puente-Rodríguez, D., E. van Slobbe, I. A. C. Al, and D. E. Lindenbergh. 2016. "Knowledge Co-production in Practice: Enabling Environmental Management Systems for Ports through



- Participatory Research in the Dutch Wadden Sea”. *Environmental Science & Policy* Danny. 55 456–466. [10.1016/j.envsci.2015.02.014](https://doi.org/10.1016/j.envsci.2015.02.014).
- Rannama, I., and A. Kargaja. 2018. “Citizen Involvement Tool AvaLinn for Android and iOS Devices.” Baltic Urban Lab Webinar IV: New Digital tools for participatory urban planning, 23 August 2018.
- Rexhepi, A., S. Filiposka, and V. Trajkovik. 2018. “Youth E-participation as a Pillar of Sustainable Societies.” *Journal of Cleaner Production* 174: 114–122. doi:[10.1016/j.jclepro.2017.10.327](https://doi.org/10.1016/j.jclepro.2017.10.327).
- Riga City Council City Development Department. 2020. Rīgā īstenota spēļošanas aktivitāte Minecraft vidē [Riga implements gamification activity in Minecraft environment]. <https://www.rdpad.lv/riga-istenota-speļosanas-aktivitate-minecraft-videriga-istenota-speļosanas-aktivitate-minecraft-vide/>.
- Rowe, G., and L. J. Frewer. 2005. “A Typology of Public Engagement Mechanisms.” *Science, Technology & Human Values* 30 (2): 251–290. doi:[10.1177/0162243904271724](https://doi.org/10.1177/0162243904271724).
- Rzeszewski, M., and J. Kotus. 2019. “Usability and Usefulness of Internet Mapping Platforms in Participatory Spatial Planning.” *Applied Geography* 103: 56–69. doi:[10.1016/j.apgeog.2019.01.001](https://doi.org/10.1016/j.apgeog.2019.01.001).
- Shahin, J., and M. Finger. 2009. “The History of a European Information Society: Shifts from Governments to Governance.” In *Global E-Governance: Advancing e-Governance through Innovation and Leadership*, edited by J. Tubtimhin and R. Pipe, 62–83. Amsterdam: IOS Press.
- Te Brömmelstroet, M. 2013. “Performance of Planning Support Systems.” *Computers, Environment and Urban Systems* 41: 299–308. doi:[10.1016/j.compenvurbsys.2012.07.004](https://doi.org/10.1016/j.compenvurbsys.2012.07.004).
- Thiel, S.-K., U. Lehner, T. Sturmer, and J. Gospodarek. 2015. Insights from a M-participation Prototype in the Wild. In: *2015 IEEE International Conference on Pervasive Computing and Communication Workshops (PerCom Workshops)*, 23-27 March 2015, St. Louis, MO, USA. IEEE, 166–171.
- Toots, M. 2019. “Why E-participation Systems Fail: The Case of Estonia’s Osale.ee.” *Government Information Quarterly* 36 (3): 546–559. doi:[10.1016/j.giq.2019.02.002](https://doi.org/10.1016/j.giq.2019.02.002).
- United Nations. 2021. UN E-Government Knowledgebase. <https://publicadministration.un.org/egovkb/en-us/>.
- Van Dijk, T., N. Aarts, and A. De Wit. 2010. “Frames to the Planning Game.” *International Journal of Urban and Regional Research* 35 (5): 969–987.
- Vilnius city municipality. 2020a. Savivaldybė sukūrė atvirą visiems trimatį sostinės žemėlapi [The municipality has created a three-dimensional map of the capital open to all]. <https://vilnius.lt/lt/2020/01/29/savivaldybe-sukure-atvira-visiems-trimati-sostines-zemelapi/>.
- Vilnius city municipality. 2020b. Nuotoliniai miesto plėtros projektų pristatymai – Sklandesni ir su daugiau dalyvių [Remote presentations of urban development projects - Smoother and with more participants]. <https://vilnius.lt/lt/2020/05/04/nuotoliniai-miesto-pletros-projektu-pristatymai-sklandesni-ir-su-daugiau-dalyviu/>.
- Warren, A. M., A. Sulaiman, and N. I. Jaafar. 2014. “Facebook: The Enabler of Online Civic Engagement for Activists.” *Computers in Human Behavior* 32: 284–289. doi:[10.1016/j.chb.2013.12.017](https://doi.org/10.1016/j.chb.2013.12.017).
- Williamson, W., and B. Parolin. 2012. “Review of Web-Based Communications for Town Planning in Local Government.” *Journal of Urban Technology* 19 (1): 43–63. doi:[10.1080/10630732.2012.626702](https://doi.org/10.1080/10630732.2012.626702).
- Yigitcanlar, T., M. Kamruzzaman, L. Buys, G. Ioppolo, J. Sabatini-Marques, E. M. da Costa, and J. J. Yun. 2018. “Understanding ‘Smart Cities’: Intertwining Development Drivers with Desired Outcomes in a Multidimensional Framework.” *Cities* 81: 145–160.
- Yin, R. K. 2011. *Applications of Case Study Research*. 3rd ed. Thousand Oaks, California: SAGE Publications.
- Zhang, S. 2019. “Public Participation in the Geoweb Era: Defining a Typology for Geo-participation in Local Governments.” *Cities* 85: 38–50.
- Zhang, L., S. Geertman, P. Hooimeijer, and Y. Lin. 2019. “The Usefulness of a Web-based Participatory Planning Support System in Wuhan, China.” *Computers, Environment and Urban Systems* 74: 208–217.<sup>2</sup>

## Appendix1: List of expert interviews

Ref. code	Date	Format	City, Country	Sector & Expertise
INT_01	29 October 2020	Virtual meeting	Jēkabpils, Latvia	Local government, strategic planning
INT_02	30 October 2020	Virtual meeting	Riga, Latvia	Local government, strategic & spatial planning
INT_03	3 November 2020	Virtual meeting	Ventspils, Latvia	Local government, spatial planning
INT_04	5 November 2020	Virtual meeting	Ventspils, Latvia	Local government, strategic planning
INT_05	5 November 2020	Virtual meeting	Jēkabpils, Latvia	Local government, spatial planning
INT_06	6 November 2020	Virtual meeting	Jelgava, Latvia	Local government, spatial planning
INT_07	16 November 2020	Virtual meeting	Latvia	Planning consultancy, strategic & spatial planning
INT_08	16 November 2020	Virtual meeting	Latvia	Planning consultancy, strategic & spatial planning
INT_09	17 November 2020	Virtual meeting	Latvia	Planning consultancy, strategic & spatial planning
INT_10	23 November 2020	Virtual meeting	Valga, Estonia	Local government, spatial planning
INT_11	1 December 2020	Virtual meeting	Estonia	Non-governmental & academic sector, urban activism
INT_12	2 December 2020	Virtual meeting	Estonia	Non-governmental & planning consultancy sector, open governance & e-governance
INT_13	3 December 2020	Virtual meeting	Estonia	Planning consultancy, strategic & spatial planning
INT_14	12 December 2020	Virtual meeting	Lithuania	Governmental sector, strategic & spatial planning on the national level
INT_15	16 December 2020	Virtual meeting	Tartu, Estonia	Local government, public relations
WR_01	29 October 2020	Written	Daugavpils, Latvia	Local government, spatial planning
WR_02	14 November 2020	Written	Vilnius, Lithuania	Local government, spatial planning
WR_03	25 November 2020	Written	Valmiera, Latvia	Local government, strategic & spatial planning

## Appendix2: Initial interview questions for spatial and strategic planning experts

### 1. Background

- How long have you worked in the local authority/planning agency?
- What is your role or responsibilities within your institution/organization?
- What departments/divisions are responsible for the planning processes in the city?
- How is a typical public participation process organized in your city/planning agency?  
*Probes: Who is involved? What is the division of responsibilities? Who proposes/decides on the public engagement plan? Who is responsible for its implementation?*
- What planning documents are currently being developed or have been recently completed in your city? Please describe the public engagement activities carried out during this process.

- f. What are the communication channels citizens prefer to use to contact the planning department/planning agency?

## 2. E-participation tools

Inquire or follow-up on the use of the following e-participation tools for public engagement in urban planning:

- Social media (social networking) platforms;
- Online discussion forums;
- Online questionnaires;
- Map-based or GIS-based solutions;
- Mobile applications;
- Participatory budgeting;
- Online games or gaming elements;
- Open data.

*Probe for details on specific platforms/solutions, purpose, process organization, context (e.g. planning stage, issue, etc.), and results.*

Are there any other digital solutions or tools you have used for public participation in urban planning, but I have not yet asked? *[If so, ask to elaborate]*

## 3. Opinion

- Based on your recent experience with public participation in urban planning, how well are the digital or e-participation options integrated with the more traditional approaches in your city?
- In your professional experience, are citizens keen on using digital solutions?

## 4. Concluding questions

- Is there anything more you would like to add or mention about public engagement in urban planning?
- Is there anyone you would suggest that I should also talk to in your municipality/planning agency?

## Appendix3: Examples of e-participation tools

Ref. code	Platform & web site	City or Country	Engagement process
<b>National Spatial Planning Information Systems</b>			
S1	Ruumilise Planeerimise Infosüsteem – <b>RPIS</b> <a href="https://rpis.andmevara.ee/">https://rpis.andmevara.ee/</a>	Estonia	Informing, Consulting
S2	Teritorijas attīstības plānošanas informācijas sistēma – <b>TAPIS</b> <a href="https://geolativija.lv/geo/">https://geolativija.lv/geo/</a>	Latvia	Informing, Consulting
S3	Teritorijų planavimo dokumentų rengimo ir teritorijų planavimo proceso valstybinės priežiūros informacinė sistema – <b>TPDRIS</b> <a href="https://www.tpdris.lt/">https://www.tpdris.lt/</a>	Lithuania	Informing, Consulting
<b>Open Data Portals</b>			
S4	Estonian Open Data Portal <a href="https://avaandmed.eesti.ee/">https://avaandmed.eesti.ee/</a>	Estonia	Informing
S5	Latvia's Open Data Portal <a href="https://data.gov.lv/">https://data.gov.lv/</a>	Latvia	Informing
S6	Lithuanian Open Data Portal <a href="https://opendata.gov.lt/">https://opendata.gov.lt/</a>	Lithuania	Informing
<b>E-petitioning Platforms</b>			
S7	Petitsioon.ee (petitioning platform) <a href="https://petitsioon.ee/">https://petitsioon.ee/</a>	Estonia	Consulting, Empowering
S8	Manabalss.lv – Platform for Social Initiatives <a href="https://manabalss.lv/">https://manabalss.lv/</a>	Latvia	Consulting, Empowering

(Continued)

(Continued).

Ref. code	Platform & web site	City or Country	Engagement process
S9	Peticijos.com (e-petition hosting platform) <a href="https://www.peticijos.com/">https://www.peticijos.com/</a>	Lithuania	Consulting, Empowering
S10	E. peticijos/E-petitions <a href="https://paslaugos.vilnius.lt/petitions">https://paslaugos.vilnius.lt/petitions</a>	Vilnius	Consulting
<b>Map-based solutions</b>			
S11	Anna teada/Let Me Know <a href="http://www.anna-teada.ee/">http://www.anna-teada.ee/</a>	Estonia	Consulting
S12	Tallinn Geoportal <a href="https://www.tallinn.ee/geoportaal/">https://www.tallinn.ee/geoportaal/</a>	Tallinn	Informing
S13	Tallinn Dashboard <a href="http://gis.tallinn.ee/portal/apps/opsdashboard/index.html#/355a2c1bd19d4f47b554ec4bfd82a666">http://gis.tallinn.ee/portal/apps/opsdashboard/index.html#/355a2c1bd19d4f47b554ec4bfd82a666</a>	Tallinn	Informing
S14	Tallinn 3D city model <a href="https://gis.tallinn.ee/linnamudel/">https://gis.tallinn.ee/linnamudel/</a>	Tallinn	Informing
S15	Ideekorje Põhja-Tallinna üldplaneeringule/Idea collection for the North Tallinn comprehensive plan <a href="https://gis.tallinn.ee/ideekorje/">https://gis.tallinn.ee/ideekorje/</a>	Tallinn	Consulting
S16	Tartu linna detailplaneeringute avalikud väljapanekud/ Public displays of detailed plans of the city of Tartu <a href="https://gis.tartu.ee/portal/apps/opsdashboard/index.html#/44b4426b4b6b409a825d68b2d6a0ba2">https://gis.tartu.ee/portal/apps/opsdashboard/index.html#/44b4426b4b6b409a825d68b2d6a0ba2</a>	Tartu	Informing, Consulting
S17	Valga valla üldplaneeringu ideekorje/ Idea collection for the comprehensive plan of Valga municipality <a href="https://valgavv.maps.arcgis.com/apps/webappviewer/index.html?id=e82f7e092b3a4d3bade235e290968487">https://valgavv.maps.arcgis.com/apps/webappviewer/index.html?id=e82f7e092b3a4d3bade235e290968487</a>	Valga	Informing, Consulting
S18	Degraded and abandoned buildings in Riga <a href="https://grausti.riga.lv/">https://grausti.riga.lv/</a>	Riga	Informing, Consulting
S19	Velo infrastruktūra Rīgā/Cycling Infrastructure in Riga <a href="https://www.arcgis.com/apps/webappviewer/index.html?id=8cdd39b7e9324737bab0c1bdb3171b64&amp;extent=2631431.9742%2C7717383.2049%2C2744253.0279%2C7787170.2117%2C102100">https://www.arcgis.com/apps/webappviewer/index.html?id=8cdd39b7e9324737bab0c1bdb3171b64&amp;extent=2631431.9742%2C7717383.2049%2C2744253.0279%2C7787170.2117%2C102100</a>	Riga	Informing
S20	Kartējam #veloslazdus/Map #cyclingtraps <a href="https://veloslazdi.datuskola.lv/">https://veloslazdi.datuskola.lv/</a>	Riga	Consulting
S21	TerGIS – Spatial development and planning information system <a href="http://kipsala.tergis.lv/">http://kipsala.tergis.lv/</a>	Riga	Consulting
S22	3D Daugavpils – Industrial territories <a href="http://3dpilseta.daugavpils.lv/industr_zones/">http://3dpilseta.daugavpils.lv/industr_zones/</a>	Daugavpils	Informing
S23	Ziņojumu karte/Reporting map <a href="https://karte.jelgava.lv/reporting">https://karte.jelgava.lv/reporting</a>	Jelgava	Consulting
S24	Ziņo par problēmu infrastruktūrā/Report an infrastructure problem <a href="https://www.valmiera.lv/lv/zino_par_problemu_infrastruktura/">https://www.valmiera.lv/lv/zino_par_problemu_infrastruktura/</a>	Valmiera	Consulting
S25	Tvarkau Miesto/Order City <a href="https://tvarkaumiasta.lt/">https://tvarkaumiasta.lt/</a>	Lithuania	Consulting
S26	Vilnius map portal <a href="https://maps.vilnius.lt/">https://maps.vilnius.lt/</a>	Vilnius	Informing
S27	3D Vilnius <a href="https://3d.vilnius.lt/">https://3d.vilnius.lt/</a>	Vilnius	Informing
S28	Bendrasis planas 2007/2020, Comprehensive plan 2007/2020 <a href="https://atviras.vplanas.lt/BP1/">https://atviras.vplanas.lt/BP1/</a>	Vilnius	Informing
S29	Kur pasodintum medį?/Where would you plant a tree? <a href="https://www.arcgis.com/apps/webappviewer/index.html?id=37a77ce9b0204945b0ab45928c9c0ad6&amp;extent=564988.7614%2C6048226.5512%2C599384.6635%2C6075558.0642%2C2600">https://www.arcgis.com/apps/webappviewer/index.html?id=37a77ce9b0204945b0ab45928c9c0ad6&amp;extent=564988.7614%2C6048226.5512%2C599384.6635%2C6075558.0642%2C2600</a>	Vilnius	Consulting

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Ref. code	Platform & web site	City or Country	Engagement process
S30	Praneškite apie problemą mieste/Report a problem in the city <a href="https://www.klaipeda.lt/lt/praneskite-apie-problema-mieste/79">https://www.klaipeda.lt/lt/praneskite-apie-problema-mieste/79</a>	Klaipėda	Consulting
S31	3D Klaipeda <a href="https://klaipeda.maps.arcgis.com/apps/MapSeries/index.html?appid=9bdf923acf7a4cacb3fd1aea6b01be73">https://klaipeda.maps.arcgis.com/apps/MapSeries/index.html?appid=9bdf923acf7a4cacb3fd1aea6b01be73</a>	Klaipėda	Informing
<b>Mobile Applications</b>			
S32	AvaLinn	Tallinn	Informing, Consulting
S33	Daugavpils mobile application	Daugavpils	Informing, Consulting
S34	Jelgava mobile application	Jelgava	Informing, Consulting
S35	Valmiera mobile application	Valmiera	Informing, Consulting
<b>Other solutions</b>			
S36	Tagasiside arengukava kavandile (discussion forum) <a href="https://www.tallinn.ee/strateegia/ideekorje">https://www.tallinn.ee/strateegia/ideekorje</a>	Tallinn	Consulting
S37	Tallinna arengukava 2021+/Tallinn Development Plan 2021+ (Facebook group/discussion) <a href="https://www.facebook.com/groups/302616023873654">https://www.facebook.com/groups/302616023873654</a>	Tallinn	Informing, Consulting
S38	Kaasava eelarve hääletamine/Voting for participatory budgeting ideas <a href="https://www.tallinn.ee/est/kaasaveelarve/Kaasava-eelarve-haaleamine">https://www.tallinn.ee/est/kaasaveelarve/Kaasava-eelarve-haaleamine</a>	Tallinn	Empowering
S39	Balso Riga.lv/Vote Riga.lv – participatory budgeting site <a href="https://balso.riga.lv/">https://balso.riga.lv/</a>	Riga	Empowering
S40	Klaipeda 2021–2030: Nuomone (discussion forum) <a href="https://www.klaipeda2021-2030.lt/nuomone/">https://www.klaipeda2021-2030.lt/nuomone/</a>	Klaipėda	Consulting

## Appendix4: List of analyzed plan-making processes

City	Planning document or procedure	Status*	Planning situation
Tallinn	Tallinn Development Strategy 'Tallinn 2035' (with the working title: Tallinn Development Plan 2021+)	Approved	Strategic planning
	Comprehensive Plan of Downtown Tallinn district (Kesklinn)	In preparation	Spatial Planning
Tartu	Tartu Development Plan 2018–2025	Approved	Strategic planning
Valga	Tartu City Comprehensive Plan 2040+	In preparation	Spatial Planning
	Valga County Development Plan 2035+	Approved	Strategic planning
Vilnius	Valga County Municipality Comprehensive Plan 2030+	In preparation	Spatial Planning
	Amendments of the Vilnius Comprehensive (Spatial) Plan	In preparation	Spatial Planning
	Vilnius City Strategic Development Plan for 2021–2030	In preparation	Strategic planning
Klaipeda	Procedure for planning and implementing public space projects	Approved	Place-based planning
	Amendments of the Klaipeda City Comprehensive (Spatial) Plan	In preparation	Spatial Planning
Alytus	Klaipeda City Strategic Development Plan	In preparation	Strategic planning
	Alytus city municipality Strategic Development Plan until 2030	Approved	Strategic planning
	Alytus city municipality Strategic Action Plan 2021–2023	Approved	Strategic planning

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City	Planning document or procedure	Status*	Planning situation
Riga	Riga Spatial Plan until 2030	In preparation	Spatial Planning
	Riga Development Program 2021–2027	In preparation	Strategic planning
Daugavpils	Daugavpils City Spatial Plan	Approved	Spatial Planning
	Daugavpils City Development Program 2021-2027	Stopped/Amended	Strategic planning
Jelgava	Thematic plan on the use of public water territories within Jelgava city boundaries	Approved	Thematic Planning
	Jelgava City Spatial Plan	In preparation	Spatial Planning
Ventspils	Ventspils City Spatial Plan	In preparation	Spatial Planning
	Ventspils City Development Program 2021-2027	In preparation	Strategic planning
Valmiera	Valmiera City Spatial Plan	Approved	Spatial Planning
	Valmiera City Transport Infrastructure Development Concept	Approved	Thematic Planning
Jēkabpils	Jēkabpils City Development Programme 2020-2026	Approved	Strategic planning
	Jēkabpils City Spatial Plan 2019-2030	Stopped	Spatial Planning

\*The status during the data collection phase (last updated April 2021)