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The current and future digital participation methods in urban planning in Finnish municipalities

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Abstract

EParticipation is participation method which is implemented partially or fully with the use of information and communication technologies.This study was implemented to find out how the use of eParticipation methods have changed after the COVID-19 pandemic.

The purpose of this research was to study how Finnish municipalities are using eParticipation methods in their participation process in urban planning. This research tried to find what eParticipation tools Finnish municipalities are using and how they are using them. This research tried to find out how COVID-19 pandemic changed the participation practises in Finnish municipalities and how Finnish municipalities see eParticipation in the future.

This research was implemented with open online survey and semi-structured interviews as methods. Open online survey was made by the department of built environment at Aalto university. This open online survey was addressed to all those working on the field of land use planning, regardless of the organization. Semi-structured interviews were organised for getting deeper knowledge on the planners' feelings towards eParticipation in urban planning and to complement the answers from the online survey. Two semi-structured interviews were held which included total of five planners.

According to online survey and semi-structured interviews most of the Finnish municipalities are using eParticipation methods in their participation processes in urban planning. Main purpose of using eParticipation methods is to collect data and opinions from citizens before planning project. The most used eParticipation tools for collecting data and opinions from citizens are websites, electric feedback system, social media, and online meetings. Main challenge for Finnish municipalities with eParticipation is the lack of recourses for introducing new eParticipation methods into participation process. Lack of recourses also prevent possibility of training for planners to know how to use new eParticipation methods.

This research found out that eParticipation methods and traditional participation methods are both key elements for participation process in the future and improving them to work together is the main challenge in the future. To be able to have eParticipation and traditional participation working together, eParticipation tools should be developed so that interaction in them would increase and they could be used side by side simultaneously with traditional participation.

Keywords Urban planning, eParticipation, Digital participation, Participation.

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Tiivistelmä
Sähköinen osallistuminen tarkoittaa kaupunkisuunnittelussa toimivaa osallistumisen muotoa, jossa osallistumisprosessi toteutetaan tieto- ja viestintäteknisten välineiden keinoin. Tämä työ toteutettiin selvittääkseen, miten sähköisen osallistumisen metodien käyttö on muuttunut COVID-19 pandemian jälkeen.

Työn tavoitteena oli tutkia, miten sähköisen osallistumisen keinoja käytetään suomen kunnissa osana niiden kaupunkisuunnittelun osallistumisprosessia. Tämän tutkimuksen tavoitteena oli löytää mitä sähköisen osallistumisen työkaluja kunnat käyttävät ja miten he käyttävät niitä. Tämä työ yritti selvittää miten COVID-19 pandemia muutti osallistumiskäytäntöjä suomen kunnissa ja miten suomen kunnat näkevät sähköisen osallistumisen tulevaisuudessa.

Tämä tutkimus toteutettiin käyttäen avointa verkkokyselyä ja puolistrukturoituja haastatteluita metodeina. Avoimen verkkokyselyn toteutti Aalto-yliopiston rakennetun ympäristön laitos. Avoin verkkokysely oli osoitettu kaikille kaupunkisuunnittelu tehtävissä työskenteleville riippumatta tahosta missä he työskentelevät. Puolistrukturoidut haastattelut järjestettiin, jotta saataisiin lisää tietoa kaavoittajien mielipiteistä sähköistä osallistumista kohtaan ja täydentääkseen sähköisen kyselyn tuloksia. Kaksi puolistrukturoitua haastattelua järjestettiin, joihin osallistui yhteensä viisi kaavoittajaa.

Sähköisen kyselyn sekä puolistrukturoitujen haastattelujen perusteella suurin osa suomen kuntia käyttää sähköisen osallistumisen muotoja heidän osallistumisprosessissansa kaupunkisuunnitteluhankkeissa. Yleisin tarkoitus sähköisten osallistumisen metodien käyttöön oli kerätä tietoa ja mielipiteitä kansalaisilta ennen kaavoitusprosessin käynnistämistä. Käytetyimmät sähköisen osallistumisen työkalut olivat nettisivujen käyttö, sähköinen palautejärjestelmä, sosiaalinen media ja etätapaamiset. Kuntien suurin haaste sähköisen osallistumisen metodien käytössä on rajalliset resurssit uusien sähköisten metodien käyttöönotossa osallistamisprosessiin. Rajalliset resurssit estävät myös kaavoittajien kouluttamisen uusiin sähköisiin metodeihin.

Tämä tutkimus sai selville, että sähköisen osallistumisen ja perinteisen osallistumisen metodit ovat molemmat tärkeitä osia osallistumisprosessia tulevaisuudessa. Niiden kehittäminen toimimaan yhdessä entistä paremmin on tärkein tavoite. Sähköisiä työkaluja tulee kehittää niin, että vuorovaikutus lisääntyisi ja niitä voitaisiin käyttää perinteisien osallistumisen rinnalla samanaikaisesti.

Avainsanat Kaupunkisuunnittelu, Sähköinen osallistuminen, Osallistuminen.

Table of contents

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Helsinki, 28.12.2023
Eetu Kaskela

1 Introduction

1.1 Background

Digital participation is participation method which is implemented partially or fully with the use of information and communication technologies. Digital participation is used in various administrative sectors (Nummi, 2020). This research refers digital participation as eParticipation.

While the cities and municipalities are constantly developing and changing, opinions, knowledge, and information about everyday life from citizens are always needed to ensure that cities and municipalities develops in the direction that citizens feel satisfied. Citizens are in the heart of urban planning and their opinions must be acknowledged. Participation in urban planning is important because of it can improve and smoothen the process of planning and design (Taylor, 1998). That is why participation in urban planning has been for a long-time part of the planning process. Participation practices are the way where planners can justify their plans for the citizens, and the participation practices are places where citizens can be heard.

COVID-19 forced participation practices to change to the online platforms where new challenges arose. These challenges were about the use of eParticipation tools. With the change from live meeting to online meetings eParticipation tools were needed and they needed to be developed to be accessible for the citizens (Pantić et al., 2021).

Traditionally participation in urban planning process have been implemented with different traditional participation tools such as opinion polls, surveys, focus groups, public hearings, citizen panels, and workshops (Chun & Cho, 2012). These tools have been the way of public consultation and a way of gathering feedback and opinions from citizens (Chun & Cho, 2012). In the last decades these traditional tools have been changing towards eParticipation tools with the help of information and communication technology (ICT) (Chun & Cho, 2012). One of the first research towards using eParticipation tools in Finland was studied by Marketta Kyttä and Maarit Kahila (Kyttä & Kahila, 2006). This research studied citizens positive and negative qualitative factors in their own habitat in Järvenpää. These qualitative factors were studied with the use of soft-GIS methods (Kyttä & Kahila, 2006).

Change from the traditional participation tools to eParticipation tools brought new ways for planners and citizens to participate in urban planning. Especially eParticipation have brought new ways for citizens to participate with the way of social media. Social media is not only communication tool but also a way for citizens to access bottom-up eParticipation (Mäenpää & Faehnle, 2016; 2017). With the use of eParticipation tools model of the duality of eParticipation was created. Duality of eParticipation is a model where eParticipation is divided into two sides. The two sides are government-led (top-down) and citizen-led (bottom-up) eParticipation. In this model both sides are participating in the participation process, but the participation initiative is arranged by the other side (Porwol, Ojo & Breslin, 2013a; 2013b; 2018).

1.2 Studies on eParticipation in urban planning

Ever since the use of internet started to generalize, there has been done research about the eParticipation in urban planning. There is plenty of studies concerning different aspects of eparticipation in urban planning. In Finland a survey was carried out in 2022 to learn how municipalities are using social media and online communication (Kuntaliitto, 2022).

In recent years in different countries there has been a lot of studies concerning about eParticipation in urban planning. These studies contains studies such as Akmentina, L (2022), e-participation and engagement in urban planning: experiences from the Baltic cities, Bouregh, A. S, et al. (2023), investigating the prospect of e-participation in urban planning in Saudi Arabia, Shahab, S, et al. (2021), barriers to employing e-participation in the Iranian planning system, and Pantić, M and Cholić, N. (2023), digital participation framework for mountain areas in Serbia. These implemented studies in recent years shows that eParticipation in urban planning is being studied constantly. The focus on the studies varies a lot between the studies.

1.3 Purpose and implementation of the research

The purpose for this research is to critically view and understand what eParticipation tools have been used and what are the needs for eParticipation tools in Finnish municipalities. For understanding this, a research team in the Department of Built Environment at Aalto University implemented survey for everyone who are working with urban planning in Finland regardless of their organization. The author also organized two semi-structured interviews with municipality planners to deepen knowledge from this subject. Two ongoing urban planning projects were also studied for this research. Specifically used eParticipation methods in those projects were studied. The results from this research summarizes the needs for eParticipation tools in Finnish municipalities and to answer how eParticipation tools have been used. Results from this research can be used in future research and in development of eParticipation tools.

This research aims to identify the eParticipation tools that have been in active use, what are the benefits and challenges with the used eParticipation tools, how COVID-19 pandemic changed the participation process in urban planning, and how people that work with urban planning in Finnish municipalities see eParticipation tools in the future. This research aims to find the needs of eParticipation tools for the planners. With that this research aims to identify how eParticipation tools could be improved to work better for the urban planners.

Planners who are working with small scale planning projects such as local detailed planning, local master plan or partial local master plan were chosen for the semi-structured interviews. The reason for this was to get knowledge especially how eParticipation have been implemented in small scale planning projects.

1.4 Research questions

This research studies eParticipation in Finnish municipalities from three different perspectives. First one is what and how eParticipation tools have been used in Finnish municipalities. Also, how eParticipation tools have been experienced. Second one is how COVID-19 pandemic affected participation process in Finnish municipalities. Third one is how eParticipation is seen in the future. From these three different perspectives the research questions are following:

1. **The use of eParticipation tools in urban planning in Finnish municipalities.**
    a. What kind of eParticipation tools have been used in urban planning in Finnish municipalities
    b. For what reason eParticipation tools have been used in urban planning in Finnish municipalities
    c. How eParticipation tools have been experienced by the people who work with urban planning in Finnish municipalities
2. **Did COVID-19 pandemic bring changes to participation in urban planning, what kind of changes.**
3. **What future changes people who are working with urban planning in Finnish municipalities are desiring for eParticipation in urban planning?**

2 Literature review

In this section this thesis aims to create understanding from the literature of what does eParticipation mean, how it has been implemented in urban planning and which kind of methods do eParticipation consist of. This section also discusses about participation in urban planning and the legal basis of formal participation in Finland.

2.1 The legal basis of formal participation in Finland

Regional land use planning, local master planning and local detailed planning are under the land use and building act law. Land use and building act adjusts ways of planning and participation in Finland. Under chapter eight that deals with zoning procedure and interaction is §63 participation and assessment scheme. The article 63 notes that when drawing up a plan, a scheme for participation interaction procedures and assessing the impacts of the plan must be drawn up at a sufficiently early stage, as necessary for the purpose and significance of the plan. This article ensures that participation in planning process have been considered and implemented in every plan (Finlex, 1999).

The article 63 in land use and building act law does not demand a specific way of organizing the public participation. It only states that public participation needs to be organized considering the significance of the plan. This allows planners the freedom of choosing their preferred way of citizen participation. In the land use and building act section § 65 states that plan draft is required to put on public display. The public display usually refers to newspapers or websites. While plan draft is on public display citizens can give their opinions on the draft plan (Finlex, 1999).

During the planning phase land use and building act law states specific consultation procedure, which contains consultation with public authorities that the plan is concerning. Land use and building act section §66 “Consultation with the authorities” states that when preparing regional land use plan contact must be maintained with the Centre for Economic Development, Transport and the Environment and the ministries whose nationally significant issues are dealt with in the plan (Finlex, 1999).

In other plans which concerns matters of national or regional importance or which are important for the state authority's duty to carry out the plan, municipality needs to be contacted with centre for economic development, transport, and the environment (Finlex, 1999).

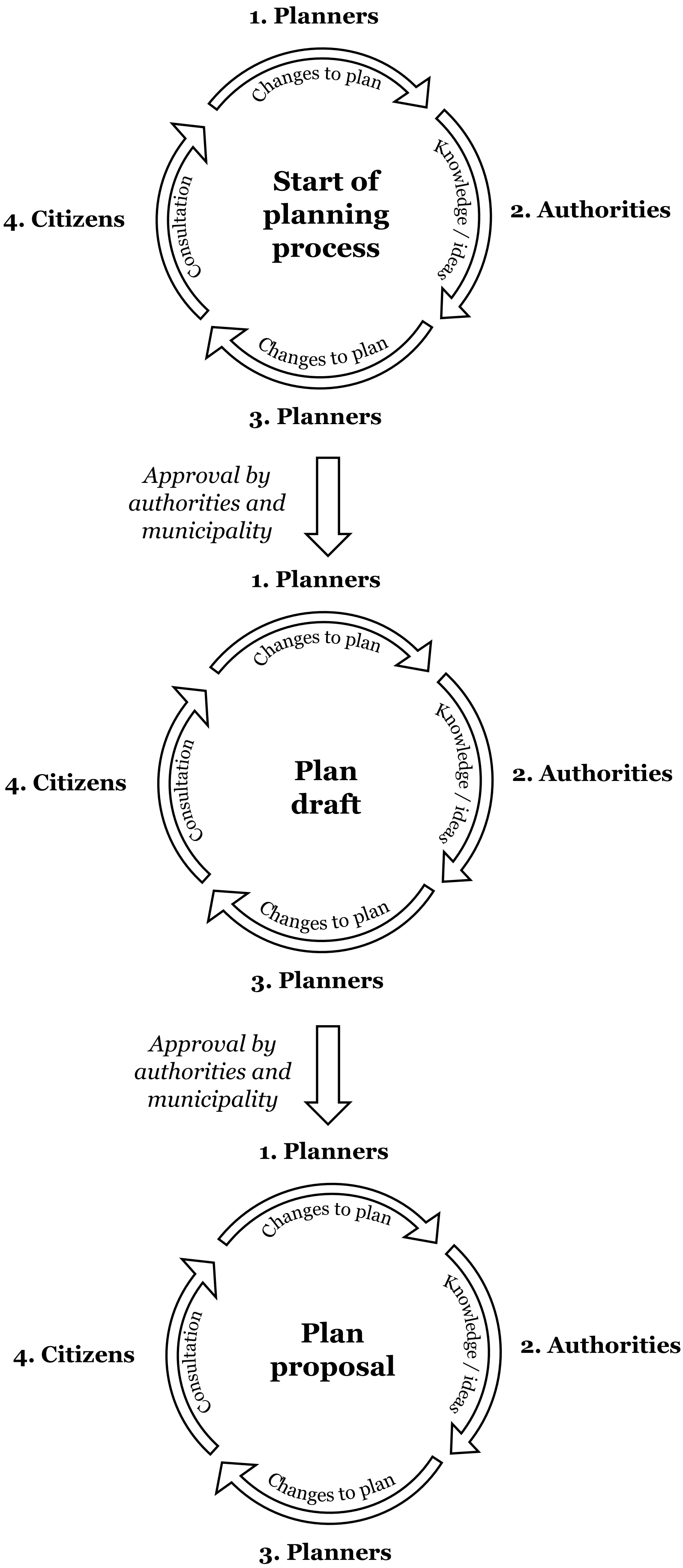
1. Planners
Changes to plan
2. Authorities
Knowledge / ideas
Start of planning process
Changes to plan
3. Planners
Consultation
4. Citizens
Approval by authorities and municipality
1. Planners
Changes to plan
2. Authorities
Knowledge / ideas
Plan draft
Changes to plan
3. Planners
Consultation
4. Citizens
Approval by authorities and municipality
1. Planners
Changes to plan
2. Authorities
Knowledge / ideas
Plan proposal
Changes to plan
3. Planners
Consultation
4. Citizens

Figure 1. Demonstration on how urban planning process progresses until final plan. Figure made by the author.

Land use and building act law defines the participation and interaction process. Even though the legitimate way of contacting authorities in different plans may differ, the procedure is often very similar what comes to participation and interaction in the plans. The procedure (*Figure 1*) contains the consultation with the authorities, getting responses about the plan from the authorities and answering to them, changing the plan according to the responses from authorities, engaging/collaborating with the citizens and getting responses from citizens from the plan and make changes according to the responses from citizens. This process can continue a long time and go back and forth. This process is much like the Staffans et al. (2020) process schema (Figure 4). In each phase of the plan planners need to collaborate with the citizens to be able to improve the plan and get it into the next phase. The process that is based on legislation is similar to the one that is captured in *Figure 1*.

2.2 Participation in urban planning

Over time public participation has reached urban planning practises and it has come to be an important factor of it (Kahila-Tani, 2015). Participation is usually defined as involvement in collective decision-making process. Participation is understood to be sharing the meaning of power with different groups of people. Partcipation aims to increase the attendance with the citizens and especially with the people or groups that don't usually does not participate to planning projects. (Newig & Kvarda, 2012). Newig and Kvarda have identified 5 elements that are defining the characteristics of participation. Firstly, participation is about co-operation and communication with different groups of people and individuals (Kahila-Tani, 2015). Participation is designed to involve joint problem solving and decision making. Secondly, participation is designed so that it can be used in the situations that have public importance. Urban planning deals with future development where multiple alternatives exists and with participation these different alternatives can be gone through with the citizens and settle potentially conflictual matters. Thirdly, participation is intended for people that does not usually take part in decision making. Fourthly, participation tries to decentralize the power of decision making. Fifthly, participation forces planners and people who are in decision making roles to represent their ideas to the public. Representations of ideas forces planners and decision makers to show their ideas to public and makes the process more transparent.

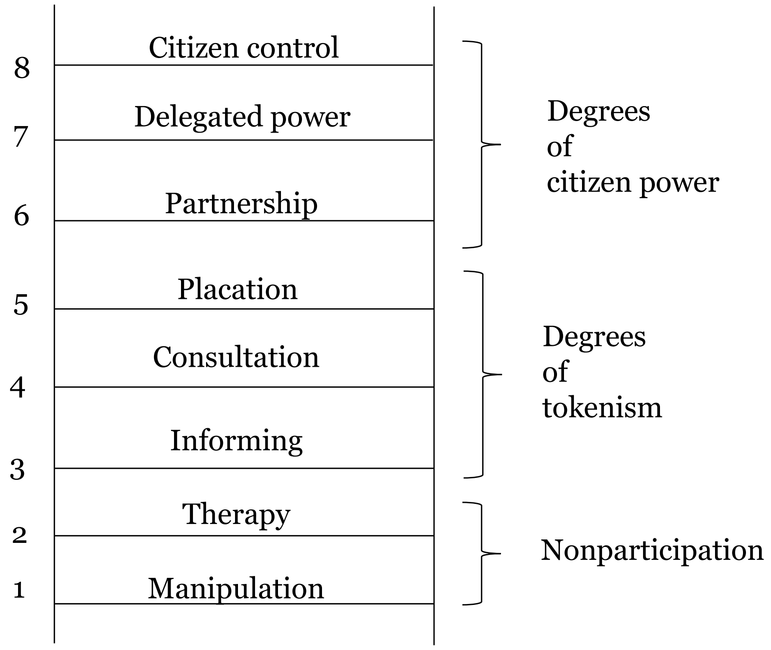

Figure 2. Arnstein, (1969). *Ladder of citizen participation.*

In 1969 Sherry Arnstein set out a concept what she termed a ladder of citizen participation. In her concept Arnstein shows that citizen participation is not necessary just one thing, but it can be interpreted in several different ways as shown in *Figure 2*. The ladder of citizen participation was seen controversial because it has degrees of participation. With the different degrees of participation comes an important question: what is the optimal degree of participation that citizen should have to have the real power to decide their affairs (Taylor, 1998). In Arnstein ladder of participation, the scale of degree has three different degrees. The degree is called “degree of citizen power”, which includes three different levels, citizen control, delegated power, and partnership. In the degree of citizen power, the citizens have the majority or fully the power of decision making (Arnstein, 1969). Second degree is called “degree of tokenism”, which includes three levels, placation, consultation, and informing. In the degrees of tokenism citizens have been given the right to hear and to be heard, but it does not ensure that their opinions will be heard by decision makers. Placation is higher level of tokenism. In placation citizens are allowed to advise, but the power is still with the decision makers (Arnstein, 1969). The last degree is called “nonparticipation”, which includes two levels, therapy, and manipulation. In nonparticipation decision makers are trying more to educate citizens than participating them into urban planning (Arnstein, 1969).

Public participation has brought various benefits to urban planning. The insights that participants provide can potentially smoothen the process of planning and design, minimizing conflicts (Taylor, 1998), fostering adjustment to ever-evolving societal circumstances, enhancing appreciation for the diverse perspectives of different stakeholders, facilitating learning and the accumulation of knowledge, and finally, helping to achieve tangible regeneration outcomes. To reach these goals planners must not only acquire new skills and professional roles, but also develop and create new ways of participation that are more useable and effective methods (Harsia & Nummi, 2022).

At se same time planners need to learn how to exploit the knowledge (Harsia & Nummi, 2022). Citizens have experiences that is important for planning and these experiences need to take into consideration in urban planning projects. (Wallin et al., 2010). Exploiting the knowledge that residents have is important part of participation. Currently the increasing number and diversity with the different stakeholders has brought knowledge from citizens towards planning issues (Staffans et al. 2020). The opportunity to participate in the decisions that concerns their cultural heritage increases the experience of inclusion, which in turn increases people's well-being. Taking emotional aspects into account when developing a place makes living there meaningful. The stories and memories of local people are part of the intangible cultural heritage of a place and valuable information for valuing the cultural environment. Cultural heritage is an important aspect of participation. The sharing and production of place-based memories as part of cultural heritage is part of the process of preserving local culture and strengthening local identity. The participation of citizens in the cultural environment is promoted in many ways in Finland, for example by promoting awareness and accessibility, but participatory knowledge is not necessarily used in valuing the cultural environment (Harsia & Nummi, 2022).

2.2.1 Different stages of participation

Public participation is a great tool for planners to get information and knowledge from citizens and different stakeholders. But with the large amount of information, it also has problems. The information remains scattered and difficult to access by different stakeholders. Other problem with participation is the difficulty to bring diverse interest groups and professions, or politicians to the same table (Staffans et al., 2020). Staffans et al. (2020) have created a four-field model about knowledge creation and civic engagement. The model specifies the various knowledge needs and the forms of civic engagement. Knowledge needs are ranging in between diverging and converging and civic engagement is extending from collaboration to participation. Diverging means opening-up and diversifying and exploring new ideas (Staffans et al., 2020). In converging, participants are brought together, and they can discuss the ideas that was gotten in the diverging phase and these new ideas are processed to alternative solutions. These components create four-field table (*Figure 3*) where each field has its own style of participation.

1. In the first sector (upper left corner) communication addresses to the broad public to produce diverse information or ideas for planning. The goal in this sector is to have large amount of knowledge from the

variety of individuals. The output from this phase is a large variety of data, information, and ideas for the next phases.

2. In the second sector (upper right corner) communication converges knowledge with the broad public. The goal in this sector is to get knowledge about what kind of support different ideas or knowledge claims get from the people. The output from this is valued knowledge claims or ideas to further elaboration.
3. In the third sector (lower left corner) communication takes place in small groups of people where the idea is to get knowledge and ideas from diverse groups which can be elaborated later in the process. Output form this is a variety of different approaches to the same issue. The difference to the first sector is that in the third sector there is small groups of people instead of broad public.
4. In the fourth sector (lower right corner) communication organizes knowledge in a smaller group. The idea is to integrate and develop approaches with the diverse ideas from the participants. The output from this is a shared understanding from the direction that the planning process is going.

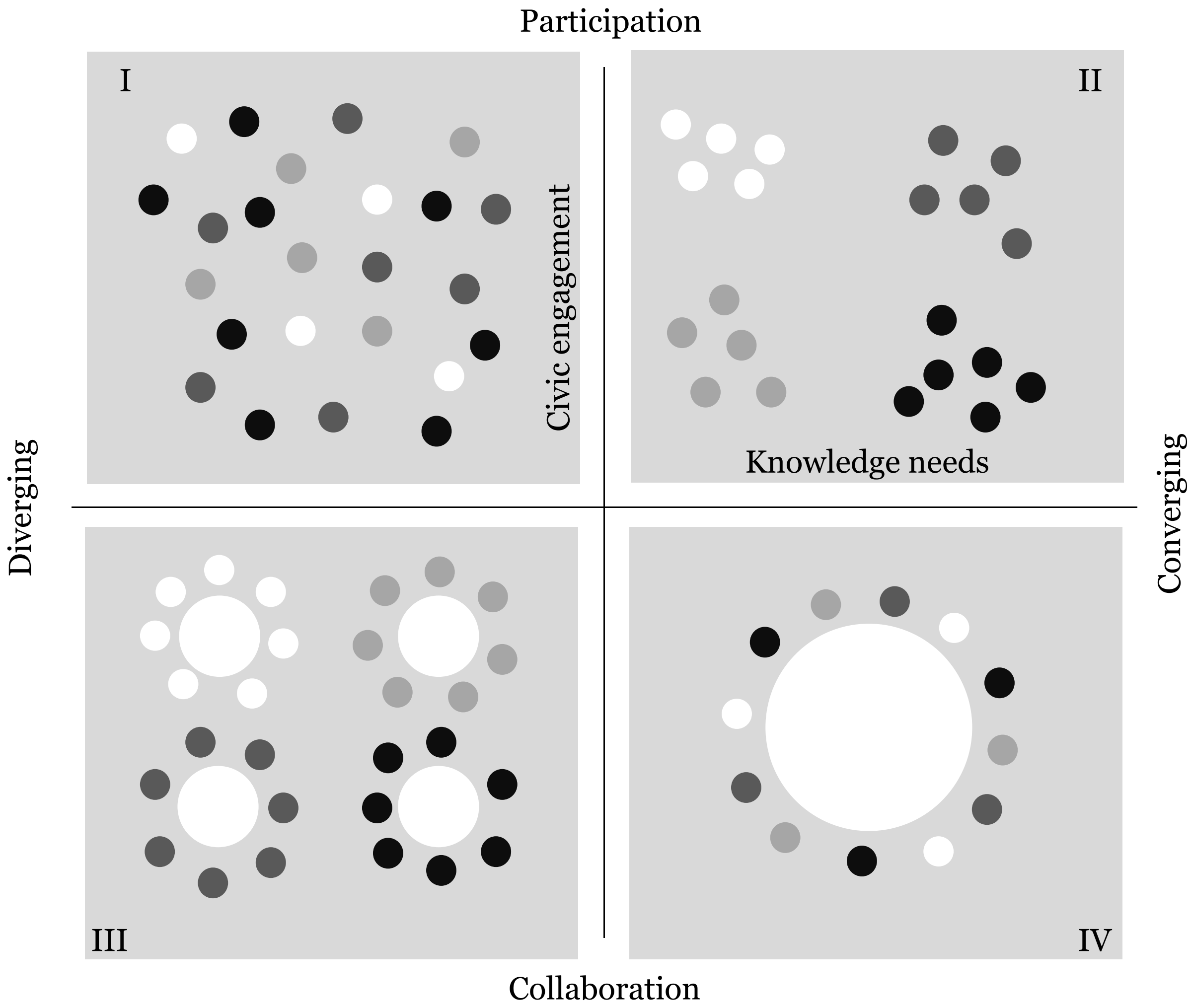

Figure 3. Staffans et al., (2020). Staffans et al. conceptual schema on knowledge creation of how to get the data to the different stakeholders and how to get different all the interest groups to the same table.

To complement the conceptual schema Staffans et al. (2020) also developed a process schema (*Figure 4*) that presents the flow of different communicative actions along the planning process. The process schema includes three different imaginary phases: goal, vision, and plan. Each of these phases leads to an outcome that will define and shape the knowledge needs and concepts of planning towards common understanding.

The goal phase refers to the stage when planning project becomes public. At the start of the project a large group of people should be asked to share their opinions, ideas, knowledge, experience from the area, and priorities for the further development towards the plan. At the start of the project, it is important to gain information from the citizens so they will influence the direction that the plan goes. At the same time the variety of voices heard in the early phase of planning is crucial to have common understanding on the area. In the vision phase many drafts should be made. In the vision phase several different interest groups, professionals as well as various actor groups are invited to bring forward ideas for the ongoing planning project. At the end of vision phase the goal is to have one or two alternatives that are taken into further planning.

In the plan phase the plans that vision phase produced should be further developed with the broad public. The broad public should be asked to comment and explore the proposals with different mechanisms. The proposals are then used to define and close the proposal to a plan (Staffans et al. 2020).

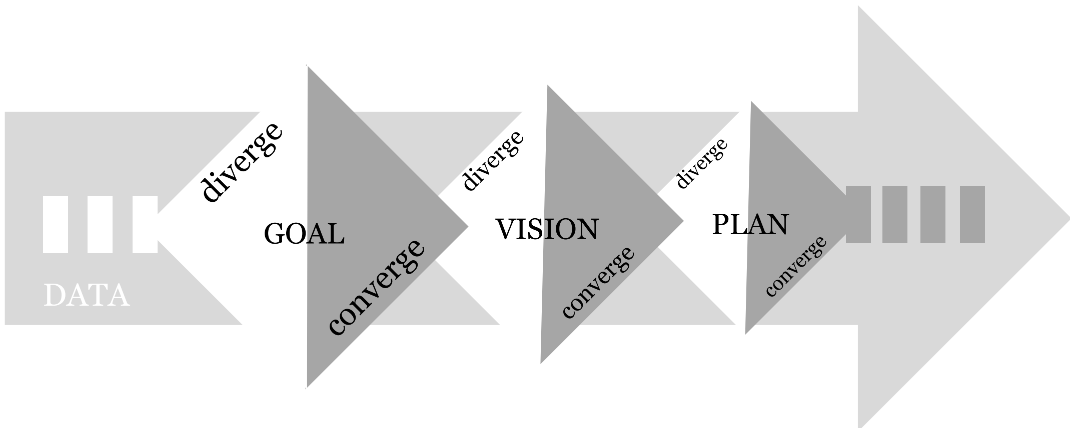

Figure 4. Staffans et al., (2020). Process schema that compromises the flow of different communicative actions along the planning process. The flow of knowledge needs and civic engagement in which the opening and closing down of the different phases of planning depends on the political and cultural context and purpose of planning.

This model that Staffans and colleagues (2020) drafted enables a way to intertwine different communicative forms of actions, actors, and knowledge as well as non-digital and digital tools in the various phases of the planning process.

2.3 eParticipation in urban planning

With the development of digitality, participation in urban planning has changed. While different platforms and tools have been developed, they have enabled citizens to take part in urban planning in the ways that before they could not. Before participation tools such as citizen panels and public hearings have been implemented by government (Chun & Cho, 2012) but in the last decades with the help of developed internet tools and social media citizens have got new platforms where citizens can also participate in urban planning in self-organized manner. Participation in urban planning can be seen from one point of view as self-organizing process that can be supported with the help of digital tools (Staffans & Horelli, 2014).

To illustrate these new participation tools Staffans and colleagues (2020) drafted a table (*Table 1*) that describes the tools that can be used in the different phases of planning. *Table 1* consists of the three phases in the plan (goal, vision, and plan) and from the different angles of participating (divergence/participation, divergence/collaboration, convergence/participation, convergence/participation, and outcomes). These different phases and angles create the need of various tools that are required to enable the participation. These tools are shown in the *Table 1*.

Table 1. Staffans et al. (2020) table of example of potential tools to be applied in the different phases of planning.

	Divergence/ Participation	Divergence/ Collaboration	Convergence/ Participation	Convergence/ Collaboration	Outcomes
GOAL	• map based surveys (PPGIS) • social media • big data • analytical and predictive tools	• workshops	• crowdsourcing • online voting • panels • map-based surveys (PPGIS)	• Big Room-working • visualisations (GIS. etc.) • information models • analytic and predictive tools	• shared goals for development • map-based presentations and visualisations • criteria and indicators for monitoring and evaluation
VISION	• map-based surveys (PPGIS) • online idea competitions	• workshops • easy – use modelling tools • games • geo-design	• Virtual reality • augmented reality and commenting • online voting	• Big Room – working • decision support tools (analytic) • geo-design	• shared vision and a selected draft for the plan presented in city model and visualised in 3D
PLAN	• social media • map-based sur-veys	• city information models	• virtual reality • augmented reality	• city information models • Big-Room – working • decision support tools	• a shared plan for the future develop-ment. Presented in a city model and visualised in 3D

Table 1 describes multiple tools that are needed in different phases in planning process. In the table there are various tools that are crucial in the planning process in different phases. Some of the tools are government-led (top-down) tools such as map based tools and some of them are citizen-led (bottom-up) tools such as social media. This is not the case every time because for example social media can be government-led also. Differences between tools appears also on whether they are online or traditional (onsite) tools. Examples of online tools are shown in the table such as online voting or online idea competitions and of traditional tools workshops, although workshops can also be organized online. But as shown in the table both ways of participating are needed to ensure good level of participation in planning process.

Self-organizing and administrative participation has made eParticipation dual sided process. These both sides are seen usually as separate processes, but they are not always seen as separate processes but also in the same process (Saad-Sulonen, 2014). This dual sided process is explored more closely in the next chapter of this thesis.

2.3.1 Duality of eParticipation

Porwol, Ojo & Breslin (2013a; 2013b; 2018) have studied the duality of eParticipation. The duality of eParticipation is a concept where eParticipation has been divided into two sides. One side is government-led (top-down) side and the other side is citizen-led (bottom-up) side. In this concept the government-led side is using eParticipation platforms as their main participation tools. Citizen-led side is using internet-based platforms as their main participation tools. Because government-led side of eParticipation is also using internet-based platforms as their participation tools the concept of duality of eParticipation is not complete duality though partial duality (Porwol et al., 2013a; 2013b; 2018).

Porwol, Ojo and Breslin (2018) have developed model, which connects the two sides of eParticipation. The two sides of eParticipation government-led and citizen-led side have been connected in this model by allowing both sides to analyse and collect data from each side of eParticipation. Government-led side is using eParticipation platforms to collect the data and then once it has been collected citizen-led side can analyse this data. The citizen-led side is using social media as the main platform where they collect the data and once it has been collected government-led side can analyse the data. This way both sides can work together to get the most from participation with the citizens. For getting this model to operate there needs to be some changes to the current planning culture (Nummi, 2020).

This model has been developed to improve the participation and interaction between the government and the citizens. Both sides still need some improvements in order this model to work. Citizen-led side need to improve the managing of different online-based platforms and combine the knowledge and data that is got in the different platforms. Government-led side need to improve tools that supports the processing and analysing the data (Nummi, 2020).

Even though this research focuses on government-led eParticipation, the next subsections of the thesis will explore more closely the two sides in eParticipation, government-led and citizen-led. Citizen-led eParticipation is important to address in this research to fully understand eParticipation.

2.3.2 Government-led (top-down) eParticipation in urban planning

The development of participation tools in planning has come through necessity but also opportunities has multiplied on the ways how public participation can be realized. The traditional participation tools such as opinion polls, surveys, focus groups, public hearings, citizen panels and workshops have been the ways of public consultation and a way of gathering feedback and opinions from citizens (Chun & Cho, 2012). Recently these traditional forms have been complemented with tools benefitting from information and communication technology (ICT). ICT-based citizen participation systems have transformed citizens participation. Citizen participation and whole policy lifecycle has become transparent than before with the help of ICT-based citizen participation (Chun & Cho, 2012). In urban planning in the last decades ICT tools have been developed massively (Brown & Kyttä, 2014). The developed ICT-tools bring many opportunities for electric participation in planning. These opportunities that ICT-tools bring have been studied. Study such as (Kahila-Tani et al., 2019) studied that does mapping improve public participation, where over 200 planning cases were studied. ICT-tools are demanding skills in technology and some users are better equipped for them because they have better technological skills (Wallin et al., 2010), but still, ICT-tools are accessible to use by everyone.

Saad-Sulonen, (2014) has made her doctoral thesis on how eParticipation has improved with digital technologies and how it is changing the field of urban planning. The development of ICT has provided a window of opportunities for citizen participation in urban planning by the form of eParticipation. Development of ICT has brought multiple tools to made possible of the use of eParticipation. These tools that have been used in eParticipation such as discussion forums, web portals, voting systems, quick polls as well as GIS-tools (Geographic Information Systems) which has been used by professionals but with the development of ICT it has come to be part of public participation (Saad-Sulonen, 2014). These GIS-tools that have been made for public are Public Participation GIS (PPGIS) and they are made for non-experts to identify the spatial dimensions of social and cultural landscapes with using GIS methods (Brown & Kyttä, 2014). PPGIS could be the key for the planners to get more knowledge than before that citizens have from the city. Tulloch (2008) defines PPGIS as a "field within geographic information science that focuses on ways that public uses various forms of geospatial technologies to participate in public processes such as mapping and decision making". Tulloch (2008) also notes that researchers and practitioners from different backgrounds have brought various vocabulary to the field of PPGIS. These differences that can be spotted in literature are participatory GIS (PGIS) and volunteered geographic information (VGI). "PGIS is used as a development tool to encourage community identity, empowerment and the creation of social capita" (Brown & Kyttä, 2014). VGI is a phenomenon, which offers "an alternative mechanism for the acquisition and compilation of geographic information" (Goodchild & Li, 2012). All of which indicates the use of GIS based tools by non-experts for capturing spatial information. There has not been a bright line between these concepts (Brown & Kyttä, 2014).

These GIS based tools are brought by experts, planners, or government so they are usually referred as top-down tools, and at the same time bottom-up based tools are needed also. Even though top-down tools are usually used in government-led side, they can also be used by citizen-led side and vice versa as said in chapter 2.3.1.

Developed digital devices from personal computers to mobile phones have opened the possibility to make social media content where it is easy to express opinions and they bring interested parties together. Platforms such as Facebook and Twitter (Now X) have made online publishing more accessible for everyone and they have played important part on the way how people organize themselves around issues of interest (Saad-Sulonen, 2014). As mobile devices develop and become more common all the time the influence of mobile devices is increasing at the same time. Its influence is increasing in every field also in urban planning (Saad-Sulonen, 2014).

2.3.3 Citizen-led (bottom-up) eParticipation in urban planning

In modern day social networking spreads information so quickly, it is possible to grow a group of people that are interested up to the thousands instead of just dozens of people in the hearing session with planners (Evans-Cowley & Hollander, 2010). Citizens don't even realise that they are part of planning prosses if they 'just' join into one group in Facebook that focuses on urban planning, but they are because simultaneously they are spreading the information forward (Evans-Cowley & Hollander, 2010). This is one of the many ways how developed technology has influenced participating in urban planning.

Pilvi Nummi, (2020) made her doctoral thesis on what is social medias place in the expanded urban planning. Social media is a platform for citizens to access bottom-up eParticipation (Mäenpää & Faehle, 2016; 2017). Porwol et al. (2018) described social medias role in the duality of eParticipation. Nummi, (2020) realised that the analysis of the duality of eParticipation is not enough to describe for the different roles of social media in urban planning. It is not enough because the forms of civic engagement (participation, self-organisation, and everyday life activities) it contains also differ in the terms of the purposefulness of participation. For this problem Nummi, (2020) has developed four-field chart of the forms of civic participation. The chart focuses on participation, self-organisation and everyday life activities and describes them in context of governance, citizen orientation, and goal-oriented participation. In this chart goal-oriented participation refers to participant's attempt to influence the planning.

While eParticipation methods develop there rises problems with their use. These new ways of participation can be challenging to connect new ways to old institutions (Innes, 2005). For example, citizens can raise their opinions and worries in social media platforms, but at the moment public hearing is the legal instrument of decision making. Unfortunately, public participation does not recognize the self-organization of citizens and the everyday life practices (Staffans et al., 2020). If citizens won't provide written letter or they don't participate in public hearing their opinions probably won't be heard (Evans-Cowley & Hollander, 2010). This creates a problem for participation. If social media platforms won't have any affect in decision making it can feel useless to express your opinions there. As said before, social media groups gather far more people of interest together and in the groups are useful opinions and knowledge. It is wasteful if planners and decision makers cannot use the knowledge that there is if it does not fit with the institutional way of participation.

3 Research material and methodology

In this section of this research, I describe the research material and the methodology chosen. Different materials and methodologies are presented in subsections. In this research both qualitative and quantitative methods are used. the data that have been collected have been analysed qualitatively and quantitatively. In this research online survey and semi-structured interviews were used as research methods.

3.1 Online survey

3.1.1 Online survey as a method

Online survey is one of the main methods for collecting quantitative data. Data form the questionnaire is internally coherent and consistent for analysis (Roopa & Rani, 2012). Online survey has lot of benefits as a method. Perhaps the greatest benefit is access to large population of individuals (Schmidt, W. C, 1997). Online survey is an excellent method for the research that don't have a lot of resources to carry out the research. Online survey can be inexpensive to design and administer. Online survey is also effective to prepare so it is not time-wasting method to use. With online survey it is easy to protect respondent's anonymous which helps respondents to feel more secure to answer their real opinions to the online survey (Roopa & Rani, 2012). Online survey was chosen as one of the methods because this research wanted to reach as many people who are working with urban planning from different parts of Finland as possible.

3.1.2 Implementation of online survey

Online survey about eParticipation in land use planning in Finland 2023 was made by the department of build environment at Aalto University. The research group that carried this survey questionnaire included Pilvi Nummi (postdoctoral researcher), Xunran Tan (doctoral researcher), Eveliina Harsia (doctoral researcher), Saana Rossi (doctoral researcher), and Marketta Kyttä (professor). This research uses this survey questionnaire as main method.

Data from the online survey has been collected by Pilvi Nummi and the figures that has been used in this section has been done by Pilvi Nummi. Author has modified the data and figures in this section by removing the responses that were from respondents that did not work in Finnish municipalities.

This open online survey was addressed to all those working on the field of land use planning in Finland, regardless of the organization. Similar survey was conducted in 2018 by the ministry of environment, when the reform of the land use and building act was being launched. Currently in 2023 situation is different and with this online survey researchers wanted to know if the use of eParticipation methods have changed. The purpose of this survey was to collect comparative data on the reformed practises and to provide new insights into the digitalisation of planning. This research used only the online survey that was implemented in 2023.

This online survey was open online survey, and it was distributed to all Finnish municipalities and associations of regions. This online survey was also distributed by social media and through contacts with municipality planners. It was open from 12.5. to 9.6.2023. This survey got 132 responses from different municipalities and organizations. From the 132 respondents 24 were working with different organisation than Finnish municipality so their responses were removed for this research. This research analysed 108 respondents' responses that were working with Finnish municipalities. Online survey was anonymous, but respondent's municipality and role in their organizations were asked in the online survey which may lead to identifying the respondent. For this reason, the data have not been analysed by municipality. Distribution of the size of municipalities and the regions is shown in *Figure 5* and *Figure 6*.

Figure 5 shows the distribution of respondent's municipality size where they are working. 81% of respondents are working in municipalities that have over 20 000 inhabitants and only 19% are working in small municipalities that have less than 20 000 inhabitants. This diversity can be result from several respondents from same large municipality or that this survey reached better the large municipalities. *Figure 6* supports this assumption because *Figure 6* shows the distribution of regions where respondents work. 45% of respondents work in Uusimaa and 14% work in Pirkanmaa and in these regions is located many of the large municipalities.

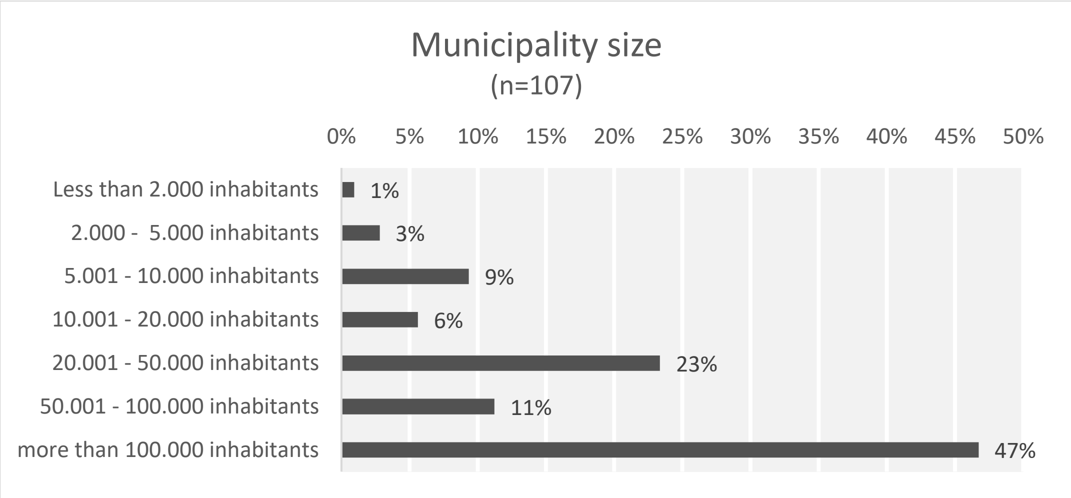

Figure 5. Distribution of the size of respondent's municipality's where they work.

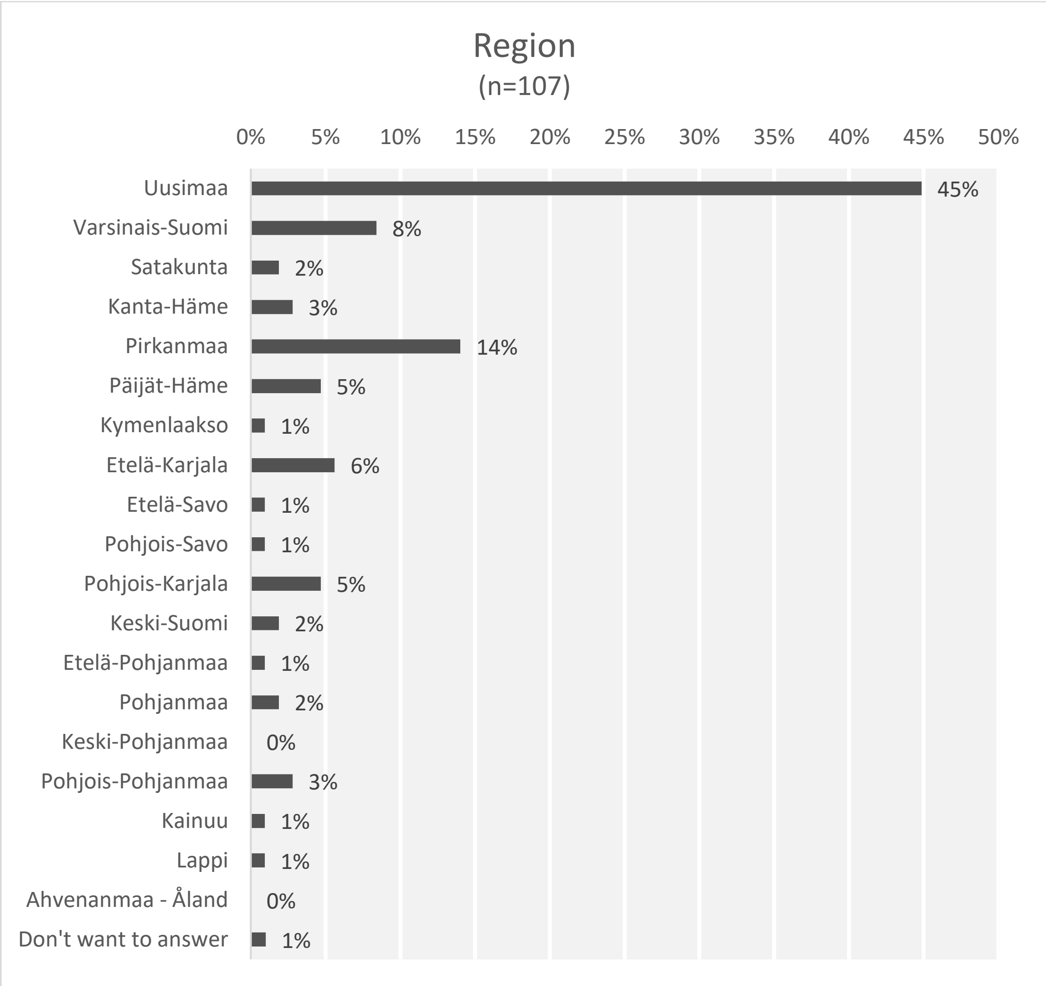

Figure 6. Distribution of the respondent's region of the municipality where they work.

This survey included the total of 47. From these 47 questions there was 21 analysed. Analysed questions are shown in Table 2.

Table 2. Analysed questions from the online survey.

Number	Question
1	What kind of organisation do you represent?
2	Municipality or city
3	Size of the municipality or city
4	Your role in the organisation
5	The scope of your main work

6	What is your professional educational background?
7	What eParticipation tools or methods are used in your organisation? Which tools do you like, or would you find useful?
8	What eParticipation tools or methods are used in your organisation? Which tools do you like, or would you find useful? Open text answers
9	Have you encountered any challenges or confusion when trying to learn about new eParticipation tools or methods? Tell us what kind of.
10	How do you analyse and use digitally generated participatory data in planning?
11	How have you used eParticipation tools for participation and interaction in land use planning?
12	How have you used eParticipation tools for participation and interaction in land use planning? Open text answers
13	Please describe in more detail how you have used eParticipation in land use planning for now? And how have you planned to use it in the future?
14	At what stage of the planning process do you find eParticipation tools particularly useful, and what are these tools?
15	Do you feel that eParticipation has changed the interaction situations with participants in recent years?
16	Please specify your answer if you answered "Yes, it has" to the Do you feel that eParticipation has changed the interaction situations with participants in recent years?
17	Did the COVID-19 pandemic affect interaction practices in your work?
18	Please specify your answer if you answered "Yes, very much" or "Yes, to some extent" to the previous question.
19	Does eParticipation bring benefits to land use planning? If so, what kind of benefits?

20	Are there challenges in using eParticipation? If so, what are they?
21	How would you describe the future of eParticipation?

This survey had both multiple-choice questions and open-ended questions. The questions were analysed with Atlas.ti and Microsoft Excel. With Atlas.ti questions were analysed by transferring all the data from the survey to Atlas.ti. In Atlas.ti similar questions were coded together and then data was pulled out of Atlas.ti. Multiple-choice questions were analysed in Atlast.ti by getting the distribution out of Atlas.ti. Microsoft Excel was used to create figures from the data that was gotten from Atlas.ti. Analysis from the questions about eParticipation can be found in chapter 4. Statistics from the general information about the respondents is shown in *Figure 7*, *Figure 8*, and *Figure 9*.

Figure 7 shows the distribution of respondent's role of their organization and majority of respondents are working as a planner in their organizations but other roles are also represented in the online survey. *Figure 8* shows the scope of respondent's main work. The majority of the respondents are working simultaneously in multiple different roles. the majority of respondents are working with urban planning. Considering the scope of this research it's an advantage that respondents are working with urban planning so that they have concrete experiences about participation in urban planning. Other roles complement the diversity of responses. *Figure 9* shows respondent's professional educational background. From the distribution is clear to see that urban planning is a multidisciplinary sector. General information about the respondents was analysed deeper knowledge from the respondents and to understand their responses better.

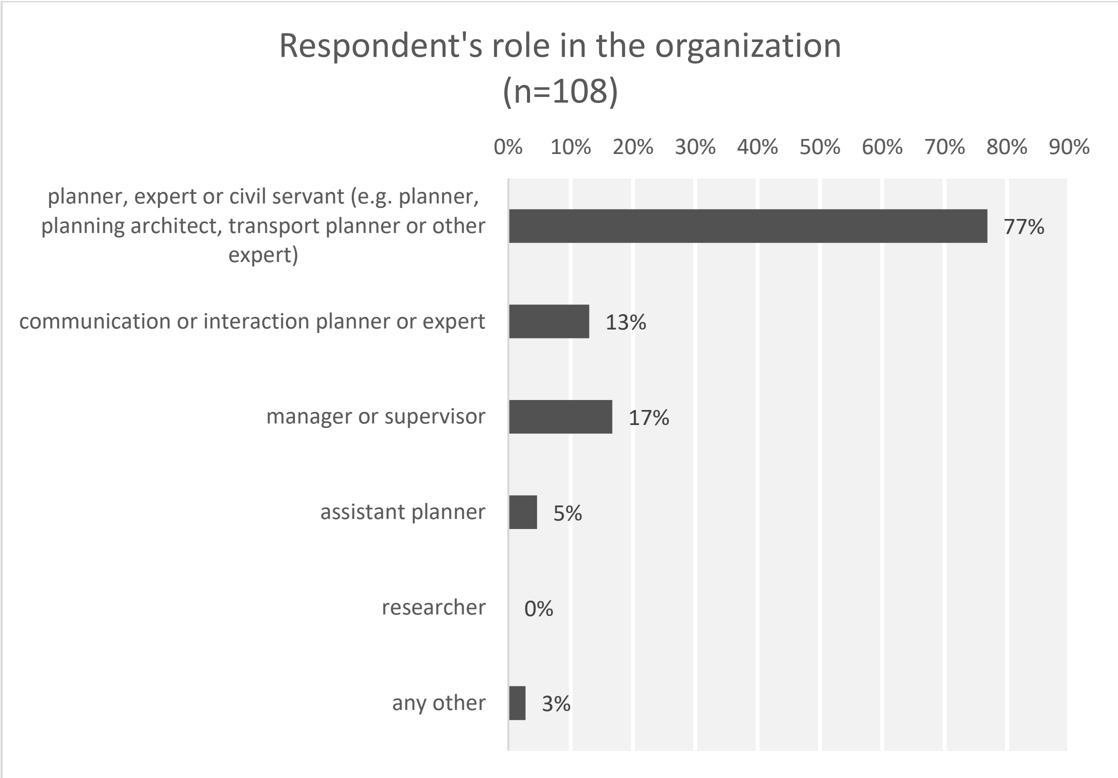

Figure 7. Distribution of respondent's role of organization.

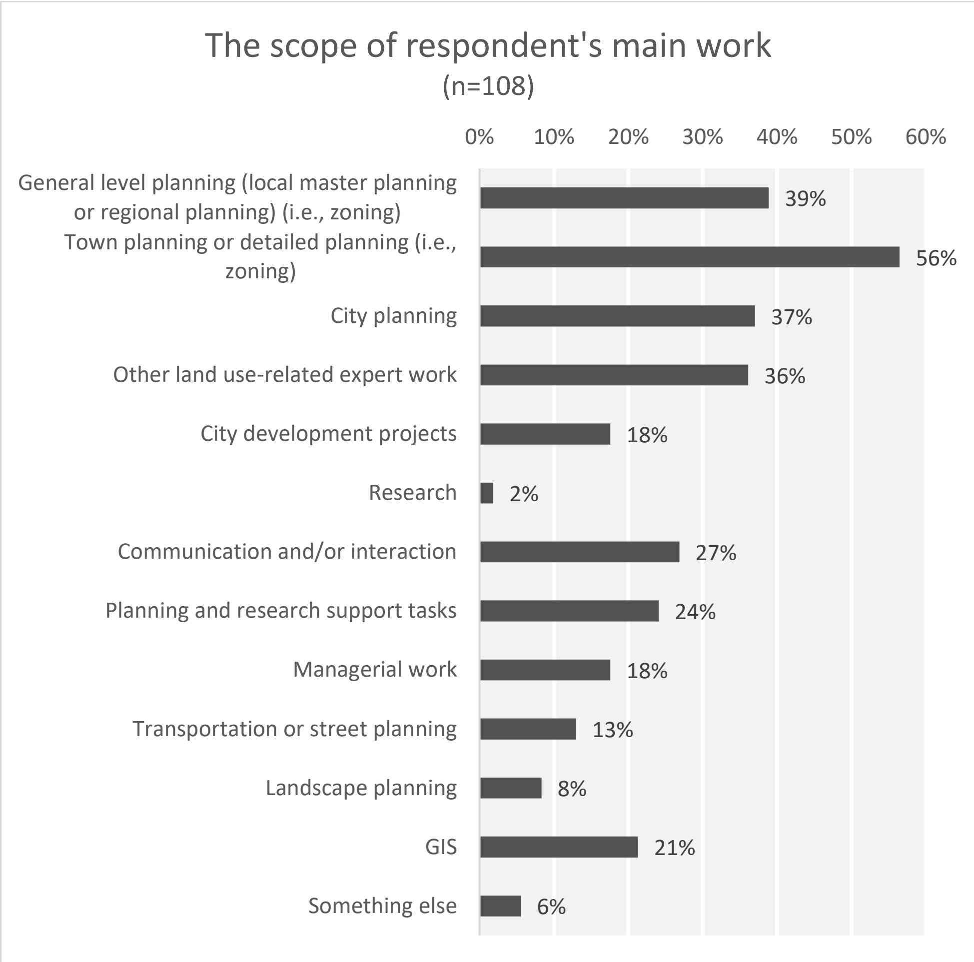

Figure 8. Distribution of the scope of the respondent's main work.

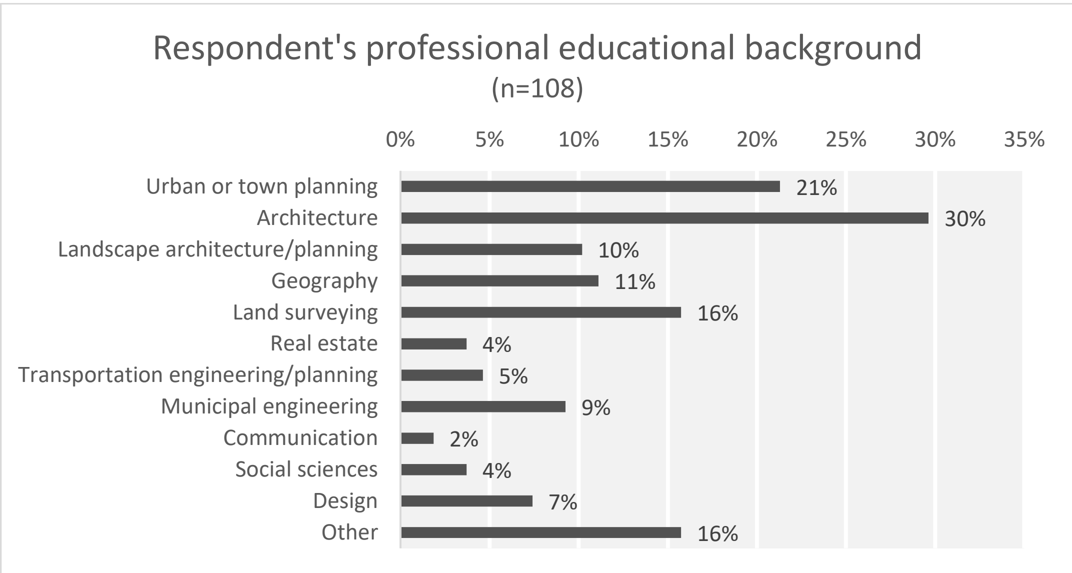

Figure 9. Distribution of respondent's professional educational background.

3.2 Semi-structured interviews

3.2.1 Semi-structured interviews as a method

Interviews are the most used data collection method in qualitative research (Taylor, 2005). Semi-structured interviews are the most used type of interviews used especially in qualitative research. Semi-structured interviews can be held with individuals or in groups (DiCicco-Bloom & Crabtree, 2006). Semi-structured interviews have found popularity as a method for its versatility and flexibility. Versality and flexibility allow the structure to be varied depending on the study purpose and research questions. Semi-structured interviews have also proven to be successful in enabling interaction between an interviewer and a participant (Kallio et al., 2016). These interviews were held to get additional data for the questionnaire data. Semi-structured interviews were chosen as the second method because of the interaction between participant and interviewer. In semi-structured interviews questions are determined before the interviews (Kallio et al., 2016) and that made this method useful for this research.

3.2.2 Implementation of Semi-structured interviews

For this research two interviews were held. Reason for the interviews was to gain more knowledge from planners and their opinions towards eParticipation in addition to the data from the survey. Also, with the interviews were held to understand better planner's feelings towards eParticipation and where the feelings have come.

The first interview was a group interview where 4 planners participated, who were working in the same middle size municipality, that has population of 30 000. The interviewees in the first interview had experience from multiple different municipalities in addition on the one that they are working currently. The second interview had one planner that was working in a small municipality that has population of 15 000. All the interviewed experts had many years of experience from urban planning. The interviews that were held were semi-structured interviews.

The author had prepared for the interviews seven questions for the planners. The questions were:

1. Which eParticipation tools have you used in urban planning?
2. How these eParticipation tools have been experienced from the perspective of the planners, and from the perspective of residents?
3. What kind of challenges eParticipation has brough for planners, and for the residents?
4. What was the purpose for using eParticipation- and why were the tools chosen and then used?
5. Has ePartipation tools improved participation compared to the traditional methods? Has the use of eParticipation tools changed the results, e.g. have more/less/new/different groups of participants been reached or has the amount of information collected changed?
6. How did the covid-19 pandemic change the process of participation?
7. What changes would you like to see in the future for eParticipation in urban planning.

The questions for the interviews were designed so they would give additional support in data for the online survey data. Semi-structured interviews offer focused structure for the discussion. But the point in semi-structured interviews is not to follow this structure but explore research area openly and gather similar types of responses from each participant (Holloway & Galvin, 2023). For these interviews, questions were provided, but the structure was held open in the discussion.

In addition, the interviewees were asked to also present case example from either ongoing plan or already completed plan where they were using eParticipation tools. More detailed descriptions from the case plans are found on chapter 4.4.

4 Results

In this section this research is presenting the results from the online survey- and semi-structured interviews. Results are divided for three different topics, (1) use of eParticipation tools, (2) how COVID-19 affected participation process, and (3) future of eParticipation tools by planners. These topics are presented in different subsections in this section. This section also includes subsections for case plans that interviewed planners have worked with.

4.1 Use of eParticipation tools in urban planning

The online survey measured the use of eParticipation tools, are they considered useful, and how eParticipation tools were used. These results are shown in the *Figure 10* and *Figure 11* (n=107).

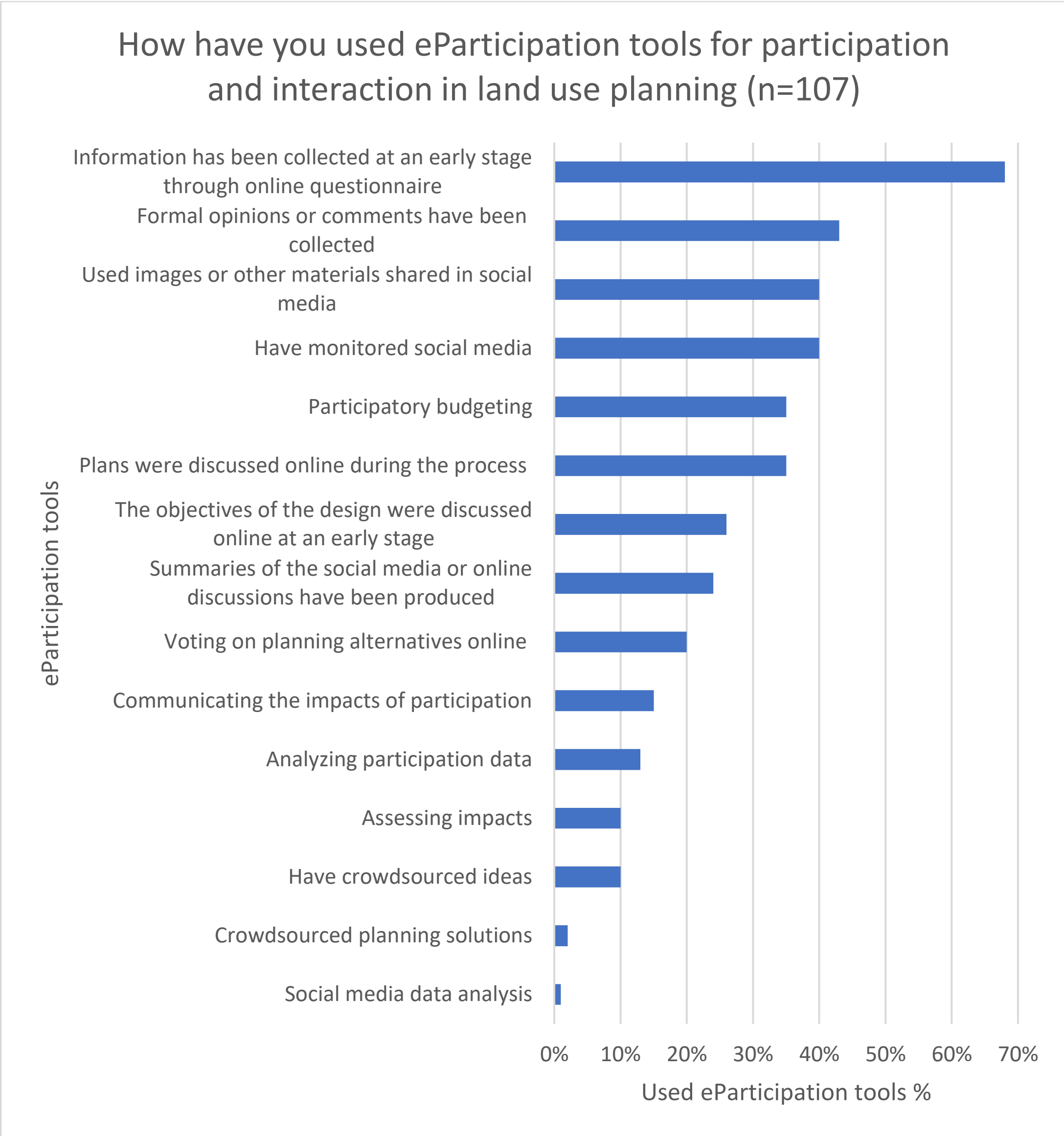

Figure 10. Results from the question "How have you used ePartcipation tools for participation and interaction in land use planning?"

The most used way of using eParticipation tools was "information has been collected at an early stage through online questionnaire". In this answer respondents refers to an online survey tool and 68% of respondents have used it in land use planning. According to the open-ended questions most of the respondents are using online survey tool called Webropoll. Other highly used way of using eParticipation tools are: formal, or comments have been collected via online 43%, use of social media 40%, monitoring social media 40%, online meetings concerning the plans 35% and participatory budgeting 35%.

The second multiple choice question concerning about use of eParticipation tools is "What eParticipation tool or methods are used in your organization?". This question measured which eParticipation tools are in established use and which of them are considered useful. This is shown in the *Figure 11*.

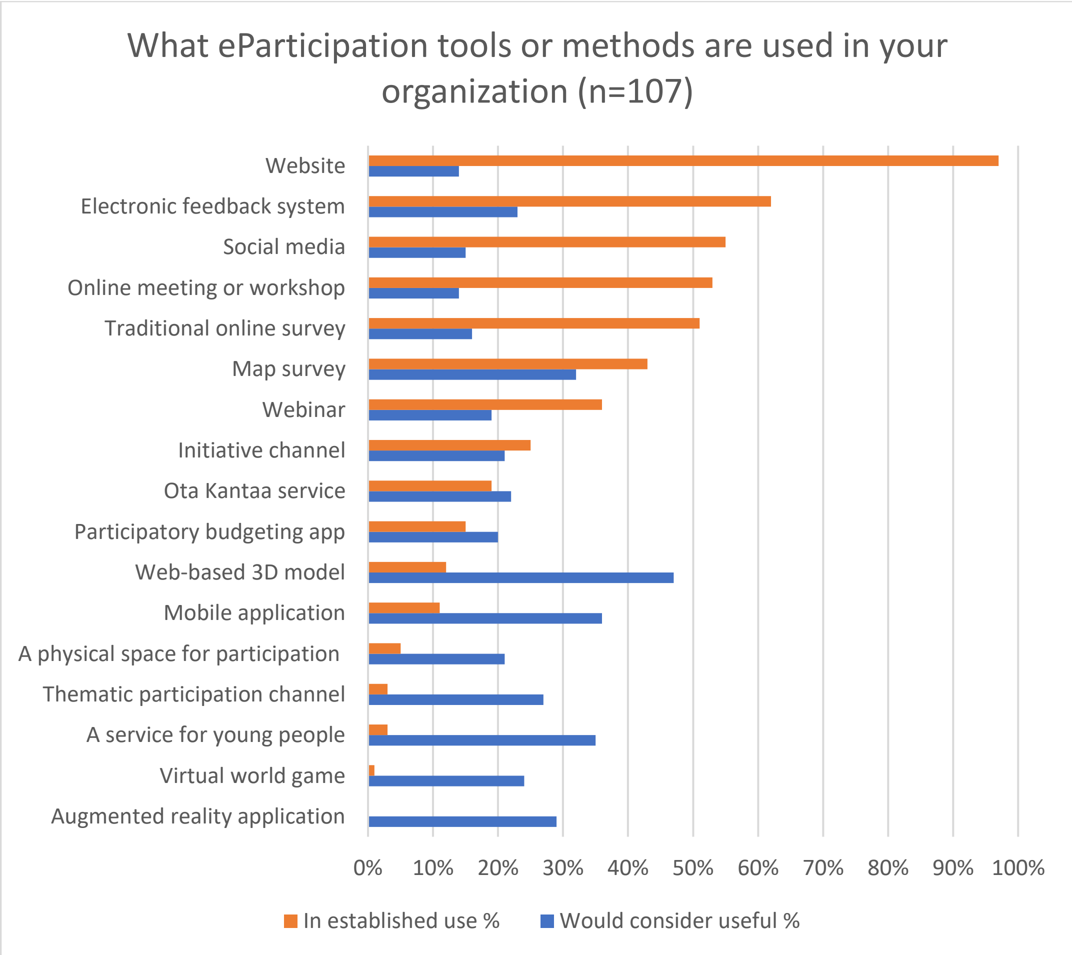

Figure 11. Results from the question "what tools or methods are used in your organization?"

Almost in every respondents' organization have website in use (97%) only three percent of respondents' organizations don't have website in use.

Electronic feedback systems (62%), social media (55%), online meeting or workshop (53%), traditional online survey (51%) and map survey (43%) have been highly used in participants' organizations. It seems that often respondents would consider useful those tools that are not in use by many and in reverse those tools that are being used by many consider them not so useful tool. Even though website is clearly the most used tool it is also considered the least useful tool with online meeting or workshop tools according to the respondents. Vice versa tools such as augmented reality, virtual world game, web-based 3D model or service for young people are considered most useful tools by the respondents even though they have low utilization rate. There is also eparticipation tools that are used by many, and they are considered to be useful such as map survey and webinar. Also, the eParticipation tools that many respondents consider useful are the most complex and expensive tools in the list. Also, the number of respondents that consider social media useful is low.

In addition to the multi choice questions, the survey also had open-ended questions to complement the multi choice questions. These open-ended questions were also used to understand the feelings of using eParticipation tools. One of the open-ended questions was asking how participant have used eParticipation in land use planning for now.

The answers from the open-ended question are in line with *Figure 11* in the use of eParticipation tools. 20 respondents in the open-ended question says that they are using websites for eParticipation in urban planning. Websites are being used for multiple purposes. Most of the respondents are saying that websites are being used to inform citizens on the current state of the planning process and to gather opinions with feedback box on the website. These opinions are concerning the plan from the citizens. Some organizations have created anonymous discussion forums to their websites where citizens can comment and discuss anonymously about the plans. Some organizations are also posting videos from their plans to their websites in addition of the information of the plans.

the second most mentioned eParticipation tool according to the answers from the open-ended question are map surveys. Map surveys have been used actively in 43% of organizations. Map surveys have been used to gather information in different phases of the planning process. All the five interviewed planners had similar experiences as the respondents in online survey on which eParticipation tools they have been using. All of them had been working with map surveys. The interviewed planner's experiences states the same as the data that is gathered from the survey. Planners have used map surveys to get initial data, review goals for the plan, gathered feedback from the plan, gathered opinions from the citizens, and development ideas for the plan.

In *Figure 11* is shown that map surveys and online meetings are actively used in the municipalities. All the interviewed were also in agreement that the map survey is an upgrade for the planners as well as residents compared to the traditional participation. With map surveys planners can get more detailed information about the plan area. The map function in the survey is key for getting detailed information out of the survey. With the ability for residents to mark the locations straight to map has helped gathering the data for the planners. Most respondents' organizations that have map survey in use are using Maptionnaire as the map survey. Maptionnaire is an online platform to design and manage community engagement (Maptionnaire, 2023). The factor that citizens can mark their opinions to a map rather than just writing it down is making planners realising easier about what citizens are referring to. One respondent wrote that they have used online survey to gather initial data, mapped the values of the citizens, their hopes and ideas and their meaningful places from the plan area.

Alongside map surveys, traditional online surveys are being used even more than map surveys. Online surveys have been used for gathering initial information from the citizens and entrepreneurs from the area. Online surveys have also been used to evaluate the already finished plans. Planners have done online surveys after a planning project finishes and want to gain information on how different parts such as participation or design of the plan went in the planning process according to the citizens.

Online meetings and discussions were also frequently mentioned in the open-ended question. Many respondents mentioned in their answers that the COVID-19 pandemic forced their organizations to use online meetings instead of traditional residents' meetings. COVID-19 was the factor that forced organizations to use online meetings but many of the organizations have continued using the online meetings. According to the respondents almost every organization that used online meetings during the COVID-19 time have continued using at least hybrid model of meetings. Hybrid model means that the meeting is hosted live, and part of people are attending live, and part of the people are attending online. According to the answers this hybrid event has increased the number attendants in the meetings, but it has made more difficult to interact with the people in hybrid model. One of the respondents wrote that during COVID-19 residents' meetings were held online and the attendants only had opportunity to present their questions through chat and the questions were answered at the end of the meeting. In many municipalities these online meetings have also been recorded and them published in their websites so that many of the citizens could have the opportunity to at least see the meeting.

The interviewed planners had mixed feelings towards meetings with the residents in online platforms. On one hand, online meeting has made these meetings better available for people who cannot participate traditional meetings but on the other hand planners felt that online meetings do not have the ability for dialogue. With no interaction, participants have felt like their rights have been taken. According to the planners online meetings with residents often are "monologue" of a planner and there is no discussion in the meeting. According to the interviewed planner's challenge in online meetings are the lack of interaction with residents. Residents have felt like the participatory meetings are not helpful at all because residents feel like they cannot discuss about the plan with the planners. During the interview one planner said that they had an online meeting with the residents and there were more than 100 residents in the meeting and the planners had only time to answer a couple of questions but most of the questions remained unanswered. The interviewed planners felt like online meetings raises the treshold to speak during the meetings, especially in the meetings where there are lot of participants. According to the interviewed planners' online meetings were held to get higher number of participants to the meetings. According to the interviewed planners' residents also expects that there will be an opportunity for them to participate online.

Planners and residents have had positive experiences towards eParticipation according to the interviewed planners. From the planner's perspective positive experiences have been that through eParticipation planners have got more feedback on plan proposals from residents. According to the interviewed planners the increased participation is due to the online meetings. It allows better accessibility for the people that would not have time to participate to the live meeting that starts already at 16.00 during a weekday.

According to the planners, residents have also experienced positively online meetings because they are not site-specific so they can participate even if they have busy schedule. The quality of feedback from residents have increased with online meetings. According to the planners the increased quality of answers is because in online meetings residents need to write their opinions and that forces the residents to think more carefully about their opinion so that they will be understood correctly. The interviewed planners have experienced positively that answers do come in the form of a message in online meetings. They feel that with the messages instead of just oral answers they can answer to each of the questions and the questions will be remembered better after the meeting. According to the interviewed planners, residents also have had positive experience towards that. Answers send with messages they feel that their questions will be answered more certainly, and their opinions will be remembered on after the meeting. With eParticipation tools planners have experienced positively that gathering the answers and data have become more convenient. With the data being already in electric form it's faster and easier to process.

According to the interviewed planners eParticipation has brought multiple challenges for planners and residents. One of the challenges is training for the new eParticipation tools. During interview one planner said that in their municipality they have acquired many different eParticipation tools, but the acquired tools have often been used only once and not ever since because planners don't have proper training for the tools. In smaller municipalities planners don't have recourses for getting the training for new eParticipation tools. According to the interviewed planners' residents have had similar challenges with eParticipation tools. New eParticipation tools are perceived difficult to use if the resident does not have previous experience from the tool. That will lead to the residents not expressing their opinions towards the plan with the eParticipation tool but with some other method that they feel more accessible, but even that is not guaranteed. According to the interviewed planners, especially elderly have had challenges using eParticipation tools because they find them difficult to approach. Online meetings with residents and planners have brought also challenges.

According to the interviewed planners they have used three eParticipation tools, Online survey, map survey, and online meetings. These three tools had been used in almost every urban planning project because they had been working well in the previous planning projects. The interviewed planners chose online surveys for urban planning projects for getting the initial data from the plan area. Online surveys have been chosen also for their ability to gather large amount of data. The interviewed planners had used map surveys at the start of planning projects to identify important places for residents. According to interviewed planners map surveys were used because of their ability to get location-based information. Interviewed planners said that compared to traditional meetings where residents inform the important places without location data the map surveys are improvement. Map surveys are used to gather exact information about the plan area.

According to the interviewed planners eParticipation tools have improved participation in urban planning. With eParticipation tools planners have been able to increase the number of participants in resident meetings, they have got more and better information from the residents with eParticipation, and planners have got exact location based- data with map surveys. the interviewed planners thought that eParticipation tools have helped a lot of participation in the areas where traditional participation methods need improvement. One of the interviewed planners gave an example of this improvement. Before map surveys the plans were presented at live meetings with a concrete map where residents were able to put post-it notes on top of the important places. According to the interviewed planner it led to having dozens of post-it notes, which were difficult to go through. Whereas in map survey residents can point out specific location and the data is easy to get from the map survey.

4.2 How eParticipation has changed interaction in urban planning in recent years

Experiences of changes in interaction over the past few years were explored in the survey with both a multiple-choice question and an open-ended question. The question is “Do you feel that eParticipation has changed the interaction situations with participants in recent years?” The results from this question is shown in *Figure 12*.

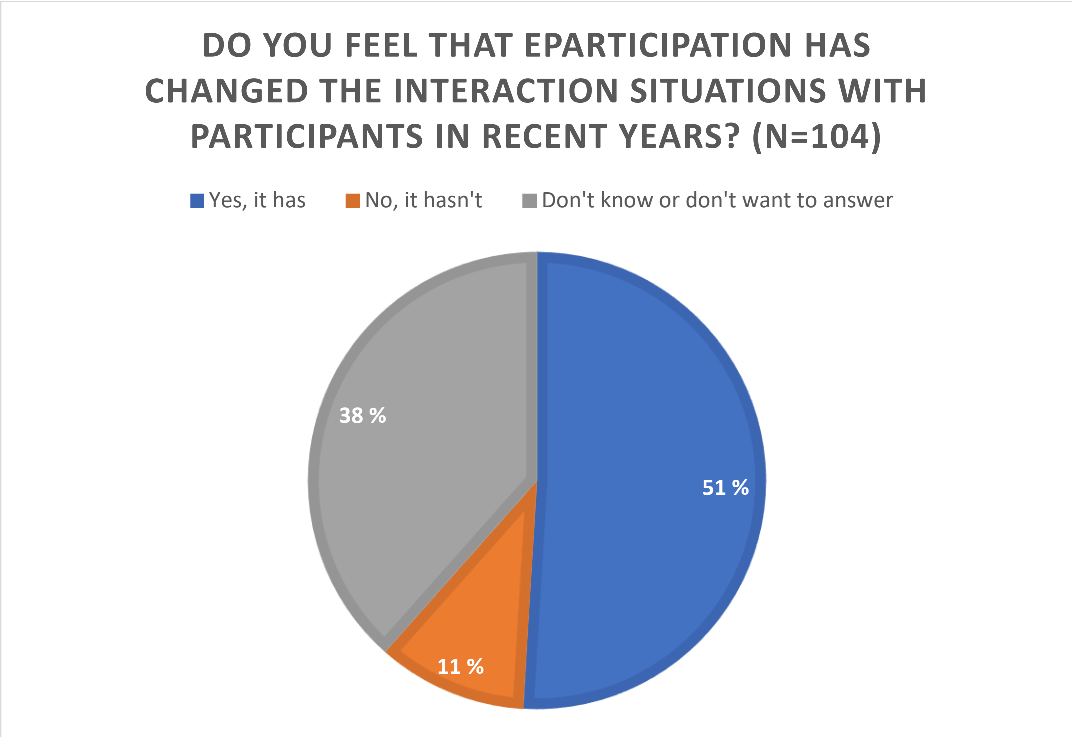

Figure 12. Distribution from the answers to the question "Do you feel that eParticipation has changed the interaction situations with participants in recent years?"

Answers divided so that 51% (n = 104) of the respondents said that eParticipation has changed interaction situations with participants in recent years, 11% respondents said that it hasn't, and 38% said that they don't know or don't want to answer to this question.

Those respondents who answered "yes, it has" were asked to specify their answer by telling how eParticipation has changed the interaction with the participants in an open-ended question. Almost every 39 respondents said in their answers that meetings have changed to online meetings. According to the responses the majority of these respondents have positive feeling towards eParticipation and they think that it has had a good impact towards interaction. Most of the positive feelings that have been responded is that eParticipation has increased the ways to participate and with eParticipation more people have been reached. The main reason for increased number of people reached is due to that the participation is no longer site specific because of online meetings. Most of the respondents have been satisfied with the benefits that eParticipation tools bring. These benefits are according to the respondents such as the ability to reach people who haven't been reached before with online meeting tools, meetings are easier to moderate in online platform, more important data has been gathered with the help of online surveys, and feedback have been given immediately and it's easy to analyse.

Respondents' answers contained also negative feelings towards eParticipation and especially towards online meetings. Even though online meetings have benefits but they also have negative sides. One respondent said that even building trust between citizens and planners have decreased because of online meetings. 15 respondents said in their answer that it was COVID-19 that launched the change towards eParticipation and it brought most of the changes towards digital participation in urban planning.

4.2.1 The effects of COVID-19 pandemic to participation in urban planning

Covid-19 changed the world in many ways, and so it did also in the field of urban planning. Especially participation and interaction in the planning process needed to change when public meetings were forced to stop. In the questionnaire were also question asking the planners how covid-19 changed the planning process. The question in the questionnaire is "Did the COVID-19 pandemic affect interaction practises in your work?" The results from this question are shown in *Figure 13*:

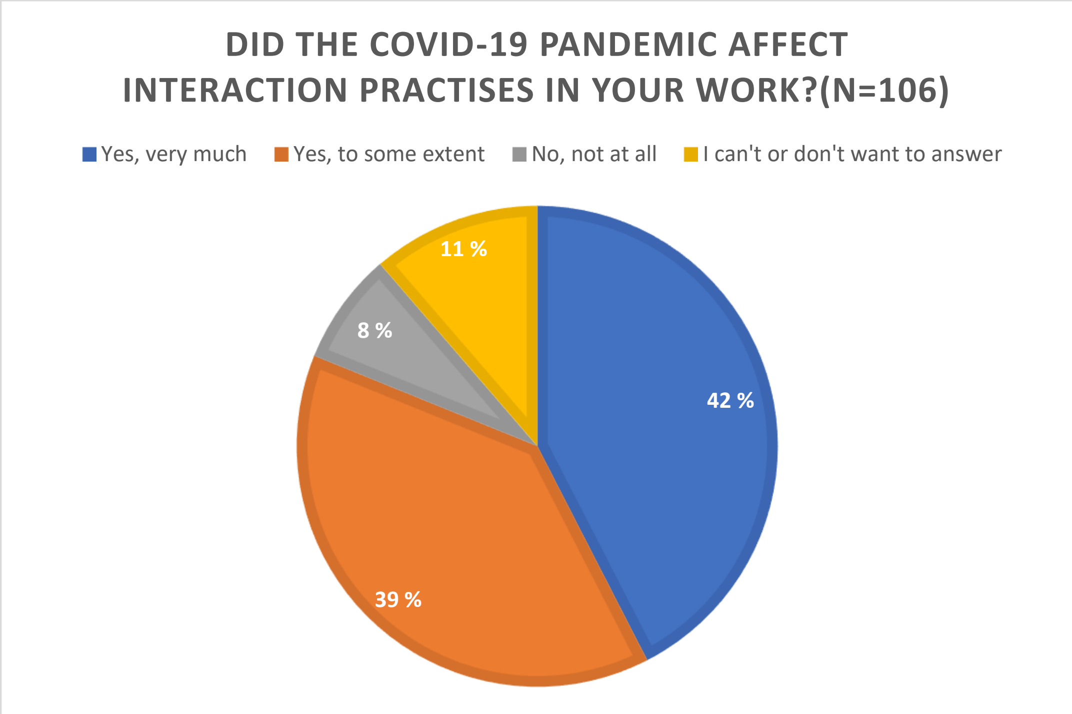

Figure 13. Distribution from the answers to the question "Did the COVID-19 pandemic affect interaction practices in your work".

The answers from to this question were quite expected. 81% (n = 106) of the respondents said that COVID-19 pandemic affected interaction practises at least to some extent. Only 8% said that COVID-19 pandemic did not affect at all to interaction practices.

The open-ended question about the effect of COVID-19 was targeted to the respondents who answered to the multi choice question "Yes, very much" or "Yes, to some extent". Out of the 62 respondents 57 said in their responses that live meetings changed to online meetings due to COVID-19 pandemic. According to the interviewed planners COVID-19 forced planners to invent new ways to participate. With landowners' planners had always met face to face but when COVID-19 prohibited the meetings, planners needed to figure out a way to still have the meetings with landowners and other participants. According to the interviewed planners, COVID-19 changed the meetings with the other authorities also. Before COVID-19 planners had to visit the authorities where they presented the plan.

A couple of the respondents said that moving from live meetings to online meetings was hard especially to the elderly. Because it was hard to participate to online meetings (e.g. because of the lack of digital knowledge) phone calls and e-mails increased a lot. One respondent said that it was a problem that in the online meetings the elderly did not participate in the same amount because before COVID-19 majority that participated to the meetings were in fact elderly. So, the meetings lost the majority of their participants. Many municipalities started recording their presentations about the plan proposal and published it in their websites or in YouTube where citizens could watch it whenever they want. Out of those responses from the question of did the COVID-19 pandemic change the interaction, many said that the recordings were also subtitled. Subtitling is time-consuming work so a couple of respondents said that they would have wanted to subtitle their recordings, but lack of resources did not give an opportunity to it.

The COVID-19 question had mixed responses. Some of the respondents said that online meetings were a good thing because with the online meetings more people were reached than before and some of the respondents said the opposite, participants were decreased considerably. Exploring the survey data brought a possible answer to this conflict. all those respondents who said with the online meetings the number of participants has decreased (3), all were from small municipalities (less than 20 000 inhabitants). On the contrary all the respondents who said that online meetings did increase the the number of participants (2) were from large municipalities (more than 100 000 inhabitants). According to the survey data it seems that small municipalities suffered more than large municipalities in the context of number of participants in urban planning because of COVID-19.

Most of the respondents said that their organization has continued using online meetings that started from COVID-19. This was noticeable especially in the middle size and large municipalities (more than 20 000 inhabitants). There was a couple of exceptions to this. Two respondents from large municipalities said that they have gone back to live meetings. Multiple respondents said that they choose the meeting method that is suitable for the type of planning situation that they are working with. Almost every organization has kept online meetings as a possibility for citizens and they are always providing hybrid meetings where citizens can participate online and live.

The most original change in participation process during COVID-19 was that one organization started doing walks in the planning area with the citizens. In that way there was the opportunity to meet face to face and get the information about the plan. One of the interviewed planners said also that they started plan area walks after COVID-19. They are sometimes still doing these plan area walks with the residents depending on the plan project. The interviewed planner said that especially in infill development projects plan area walks are helpful, but in new construction projects that locates in forests they are not helpful.

The biggest challenge with the online meetings came from the interaction with the citizens in the online meetings according to the responses. Many of the respondents said that interacting with the citizens was difficult in online workspaces. Respondents said that in the online workspaces' discussion between the planners and citizens are almost non existing and the presentation is referred as a monologue by the planner. Three of the respondents also said that they had a challenge to teach planners and citizens use new digital tools and that took lot of resources.

4.3 Future of eParticipation tools according to the people that are working with urban planning in Finnish municipalities

According to the responses from the survey there has been mixed feelings towards eParticipation. Resondents have experienced that eParticipation has its benefits but also disadvantages. According to the answers from the survey, traditional participation is needed as well as eParticipation. The interviewed planners had a mutual understanding that they hope that eParticipation tools would develop alongside traditional participation. The interviewed planners thought that traditional participation methods will be always needed but ePartcipation tools will develop the whole participation process.

This survey had two open-ended questions concerning about the future of eParticipation tools. First of these questions is a follow-up question for the question “how have you used eParticipation tools for participation and interaction in land use planning?” Results from this question can be found in *Figure 10*.

This follow-up question is concerning about the use of eparticipation tools in the future. 42 respondents answered to this question. Answers for the future of eParticipation tools are diverse and almost all the respondents have their own insight on how they see the usage of eParticipation tools in the future. Most frequently recurring insight is that respondents want to increase usage of online questionnaire in the future. They want to use questionnaires for getting information before, during and after the planning process. Online survey is one of the most used eParticipation tool, but only few considers it useful (*Figure 11*). Map survey as an eParticipation tool is also highly used tool according to the *Figure 11* and more respondents consider it useful. It is not a surprise that respondents see online surveys and map surveys as important tools in the future because it is a good tool for getting lot of information and the data is relatively easy to manage. Most of the answers about online survey refers to a map survey and how that is going to be important for the future.

Out of the eParticipation tools that was presented in the *Figure 11* many were mentioned in respondents' answers about the future of eParticipation tools. Out of those tools' webinar, web-based 3D model, traditional online survey, social media, participatory budgeting, online meeting or workshop, and map survey have been mentioned in answers considering the future. One of the respondents answered that they are going to ask their citizens what kind of participation they prefer, and they are going to respect citizens wishes.

According to the respondents many of the organizations are going to use the same eParticipation tools that they have been using now. Almost every respondent has ideas that they would want to implement as part of their participation process but many of these organizations do not have the needed recourses to get these ideas into regular use. Especially in the smaller organizations it's impossible to implement new tools because they have only a few employees. Bigger organizations can test new ideas because of higher recourses. But also, bigger organizations have answered that they have tight recourses, so they have not the ability to try new ideas.

The other question in the survey concerning the future of eParticipation is "How would you describe the future of eParticipation?" 43 respondents answered to this question. Compared to the other question about the future of eParticipation tools the answers for this question were qualitatively worse, meaning that some of them did not any input for the future of eparticipation. Most of the answers did have input for the future of eParticipation. In the answers many respondents are sceptical about eParticipation and how it's going to change in the future. Many respondents saif that eParticipation will bring even more possibilities that are not known now. One respondent compared the change from traditional participation to eParticipation as going from handwriting to computer writing. The respondent argued that eParticipation has the same basic principles as traditional participation and interaction. Other respondent argued that eParticipation is a tool for participation, but it is not going to replace traditional participation. Many respondents had similar sceptic opinion for the future that eParticipation is a good tool for participation but it's not going to replace traditional participation.

Many respondents thought that through virtual reality and augmented reality would replace proposal designs. They were highly optimistic that a app what citizens can use with their phone would change the way citizens can explore the planning area and the plan proposals. Respondents had also high hopes for better tools for interaction in eParticipation. The use of AI (artificial intelligence) has been mentioned a lot also in the responses. Respondents think that AI will bring tools to eParticipation that are not known yet. According to the interviewed planners they would like to see more user-friendly eparticipation tools for the planners and residents. One of the interviewed planners had a specific improvement for eParticipation. This planner said that currently planners in their municipality needs to send actual letters for all the landowners who are affected by the new plan. The number of landowners can rise to high numbers so mechanically sending letter to all of them is taking long time. The planner hoped that in the future there could be service that would gather every resident's e-mail address and planners could get the addresses and switch the process to electric process and that instead of sending actual letters for landowners they could send the letters via e-mail. That would make the landowners contacting process faster and more accessibly for the planner's side and landowners' side.

One response was reflecting Sherry Arnstein's Ladders of Participation in its response. Arnstein's Ladder of Participation is explained in *Figure 2*. This respondent said that "There is high probability that eParticipation will remain within Arnstein' level 4. Level 4 is consultation which is a tokenistic process where citizens are merely involved only to demonstrated that they were involved. People are primarily perceived as statistical abstractions, and participation is measured by how many come to meetings, take brochures home, or answer a questionnaire. What citizens achieve in all this activity is that they have 'participated in participation.' And what powerholders achieve is the evidence that they have gone through the required motions of involving 'those people.'" This quote is interesting insight from a planner and how this respondent sees participation.

4.4 Case plans from the interviews

In this section I analyse from the two case plans from the interviews. This section will focus on the case plans and how eParticipation have been implemented in these plans. The two case plans are Valko's and its surrounding areas partial local master plan and the other case plan is outline plan for centrum of Nummela.

4.4.1 Valko's and its surrounding areas partial local master plan

Valko's and its surrounding areas partial local master plan started already in 2017 and it is still a ongoing project. Plan aims to guide, among other things, coastal development on the Western shore of the Gulf of Loviisa and the planning of unplanned areas (Loviisa, 2023). According to the interviewed planner in this plan project planners have been using online meetings and map surveys as eParticipation tools. The first map survey questionnaire was held in 2017 to get data from the important locations for the residents. 129 participants responded for this survey (Loviisa, 2017). The second map survey was carried out in 2018 and it was held to get residents' opinion on two structural models, and which one is better in residents' opinion. There were 136 browsers in the survey and out of those 136 citizens visited and 57 citizens answered to the survey (Loviisa, 2018). According to the interviewed planner after COVID-19 meetings were held online and plan proposals were put to website for residents to explore. The exact numbers of participants in the online meetings were not given. The interviewed planner told during interview that map surveys really helped the planners to get the important locations of the residents.

4.4.2 Outline plan for centrum of Nummela

The outline plan for the centrum of Nummela started in 2022 and it is a still ongoing project. The aim of this plan is to define the guidelines for the development of the town centres. The aim of the outline planning work is to improve attractiveness and functionality of the city centre, to identify the possibilities and nature of infill development in the city centre, to coordinate the green structure with the land use, and to examine the transport development and parking arrangements as the land use develops (Vihti, 2023A). The outline plan started with a map survey where planners wanted to explore interested parties' views on the status of centre of Nummela, factors affecting the quality of life in central environment, and areas for development. 420 participants responded to the survey (Vihti, 2023B). The interviewed planners said that this map survey helped the planners to start developing their plans and they are going to use the data that was got from the survey throughout the planning process. The interviewed planners also said that they are also going to use in this case online meetings during the planning process.

5 Discussion and conclusion

The purpose of this research was to understand which eParticipation tools have been used and what are the needs for eParticipation tools in Finnish municipalities. In this research the use of eParticipation tools in Finnish municipalities was studied with an online survey and through semi-structured interviews with municipality planners. This research found out the challenges and advantages in the use of eParticipation tools with the people who are working with urban planning in Finnish municipalities. These challenges and advantages were found out with the review of different eParticipation tools. Opinions from Finnish municipality planners from eParticipation tools were also collected in the two semi-structured interviews to get clear understanding from the subject and to understand what the planners' feelings towards eParticipation are.

In this chapter this research is analysing the results through the research questions that were set in the chapter 1.4 as well as reflect on the quality and the limits of this research. In this chapter is also presented recommendations for the developments of eParticipation tools in urban planning and suggestions for further research.

5.1 How eParticipation tools have been used in urban planning in Finnish municipalities?

What kind of eParticipation tools have been used in urban planning in Finnish municipalities?

The results from this research shows that representatives from Finnish municipality who answered to the survey were using eParticipation tools in their participation processes. According to the survey multiple different eParticipation tools are being used in Finnish municipalities. There was big distribution between different eParticipation tools but there was one tool above all else. Almost every Finnish municipality that answered to the survey are using website as a tool for participation. Other highly used eParticipation tools were electronic feedback system, social media, online meeting or workshop, traditional online survey, and map survey. Comparing these tools to Staffans et al. (2020)'s examples of potential tools to be applied in different phases of planning shown in *Table 1* every one of tools mentioned can be found in the *Table 1*. *Table 1* includes all the most used eParticipation tools, but it does not include the eParticipation tools that respondents consider the most useful such as web-based 3D model or mobile application. These more complex tools will be more general in the future. Similar study to Staffans et al. (2020) should be implemented in the future to find out what are the useful eParticipation tools then.

EParticipation tools that respondents would consider useful are the ones that are rarely in established use. EParticipation tools such as web-based 3D model, augmented reality application, and mobile application are all considered highly useful tools, but only a few municipalities are using them. It seems to be the case that the more complex the eParticipation tool is the more planners considers it useful. These complex eParticipation tools are more expensive and smaller municipalities do not have recourses to learn or teach these eParticipation tools to planners or to the citizens.

Websites have been the main eParticipation tool that has been used in the municipalities, but only a few respondents see website as useful tool. The responses from the survey give the perception that websites are usually the tool where everything about the plan has been gathered for citizens to explore. But it is not the place where citizens have the best possibility to participate in the plan. Usually, websites are the place where citizens can leave their opinion towards a plan, but there is no possibility for interaction with the planners.

According to the semi-structured interviews planners found map survey to be most useful eParticipation tool. But according to the online survey, planners find 3D-model to be most useful eParticipation tool. According to the interviewed planners and survey respondents map surveys have made planners job much easier because it integrates regular survey and location-based data. The responses from the survey and interviews suggest that map surveys are also useful for developing the plan.

this research examined mainly the government-led side of the eParticipation. This research gathered information and data from municipality planners with online survey and semi-structured interviews. According to the respondents who participated in online survey, the most used eParticipation tool is websites and the planners that participated to semi-structured interviews, the most used eParticipation tools are online surveys and map surveys. Planners perceived eParticipation tools useful and user friendly. With online surveys and map surveys planners have got a lot of high-quality data. According to the planners these factors have improved participation which is why these tools are appreciated by the planners. There is also multiple other eParticipation tools that are being used by municipality planners. Tools such as electronic feedback systems, social media, online meetings or workshops, webinars, and initiative channels have been used in many municipalities, but planners do not rate them as highly as online surveys and map surveys.

For which purposes eParticipation tools have been used in urban planning in Finnish municipalities?

According to the semi-structured interviews and survey the most popular ways of using eParticipation tools include the use of eParticipation at an early stage of planning process. Information have been collected with online questionnaires and map surveys. With map surveys being one of most used eParticipation tool it is logical that using map surveys is the most used way of using eParticipation tools.

Getting formal comments and opinions through eParticipation tools is also highly used method in the municipalities which respondents answered to the survey. Also, in the semi-structured interviews the interviewed planners expressed that collecting opinions and comments through eParticipation tools is a useful method. With the possibility of collecting opinions and comments through eParticipation tools planners can more certainly to answer to every comment and opinion. At the same time citizens feels that their opinions and comments are answered. This has been a massive improvement when comparing to the traditional ways of collecting opinions in citizen meetings.

How eParticipation tools have been experienced by planners?

According to the results from this research, planners have mixed experiences towards eParticipation tools. In many ways planners feel that eParticipation tools have improved participation process in urban planning. The transition to eParticipation tools has changed the participation so that it is not anymore site or time specific, but citizens can express their opinions anywhere and anytime. This change has increased the number of opinions and comments from citizens. The change has also been experienced well by the planners because they are getting more opinions and comments, and the opinions comes in electronic form which they can analyse faster and easier than the opinions and comments that come in the live meetings.

Planners have experienced positively the non-site-specific change where citizens are able to participate online. The online meeting applications where planners can host the meetings with citizens has allowed citizens to participate to the meetings where they want. According to the planners this has increased the number of participants in the meetings. Planners aldo had negative feelings towards the non-site-specific meetings. Planners feel that with online meetings the interaction between the planners and citizens have decreased a lot. The responses from interviews and online survey give the perception that planners value more the interaction in the meetings than the number of attendants.

According to the planners' online meetings have positives but also negative sides. At least with the online meeting applications that planners have been using now does not suite well with the meetings with the citizens. According to the planner's the main reason for that is that the citizen meeting is supposed to have lot of interaction between the planners and citizens and if there is no interaction, citizens feel like their rights have been neglected. But at the same time citizens are used now that they can participate in these meetings anywhere so changing back to live meetings is not the solution, but new online platform that would suit well with kind of meetings where interaction is high and there are lot of participants.

5.2 How COVID-19 pandemic changed participation in urban planning?

COVID-19 pandemic changed the whole world and urban planning, especially participation in urban planning. One of the key elements in participation in urban planning was citizen meetings with the planners. COVID-19 blocked these meetings and new ways were needed to implement participation. According to the planners the most usual way of implementing this change was to arrange meetings with the citizens in online platforms. There were also other solutions from the planners to arrange participation in during COVID-19 pandemic. One solution was to arrange citizen walks in the planning area. Video presentations were also started during COVID-19 pandemic where planners would introduce the planning area and their plans for the area for citizens to watch and citizens could give their opinions and comments concerning the plan.

COVID-19 pandemic forced planners to create new ways of participation and the new solutions needed eParticipation tools to work properly. New eParticipation tools are still needed so that eParticipation could work well in urban planning. The participating citizens adopted quickly these adopted these new eParticipation methods and currently they expect to be able to participate with eParticipaiton tools. COVID-19 pandemic increased the demand on the eParticipation tools, and the supply is needed still. Currently challenge is to find right combination between the traditional participation tools and ePartcipation tools because both of them are needed in participation process.

5.3 What changes do the people who are working with urban planning in Finnish municipalities desire for eParticipation in urban planning in the future?

Online survey respondents and semi-structured interviewed planners see the future of eParticipation brightly. They have good ideas how it can be developed into more user friendly in the future. There are also concerns what comes to the use of eParticipation. Planners have been satisfied with the change to eParticipation because it has made it easier and faster to process data that citizens have provided. This have given planners more time to concentrate on other important phases of planning. According to the planners there are still areas where eParticipation needs to improve so that they will give planners even better benefits. With eParticipation constantly evolving with help of developing technology, eParticipation tools need to be develop at the same time so that they will be able to serve planners the best way possible. One improvement that was pointed out in the interviews was to have collected database where are citizens contact information and planners could get the information straight from the database. Suomi.fi services has this database and planners could be able to use this database for getting citizens contacts in the future.

Most of the planners were hoping for improvements to the hybrid model of participation. Planners had mutual agreement that eParticipation will be an important part of participation, but also traditional participation will be important also in the future. Combining these two ways of participation will be the key challenge in the future. The mixed feelings towards eParticipation in urban planning has brought the idea that eParticipation would replace the traditional participation, but the idea with eParticipation is to have eParticipation and traditional participation side by side working well together. Participation in urban planning will benefit from this co-working with traditional participation and eParticipation.

For the future urban planners hope that more complex eParticipation tools would become more common in general. These more complex eParticipation tools such as web-based 3D model, virtual world game, augmented reality application, and mobile application are considered by planners to be useful eParticipation tools. These more complex eParticipation tools requires a lot of recourses to get them user friendly and to teach planners to use them. In the future, municipality planners hope to see these more complex eParticipation tools to generalize in use, but urban planners also hope that the hybrid model of participation would also improve. Urban planners think that in the future both traditional participation tools and eParticipation tools are needed and getting them to work together with developed eParticipation tools is important in the future.

5.4 Limitations and reliability of the research

This research was carried out using online survey and semi-structured interviews. The used methods had advantages and weaknesses, but they produced wanted results.

Online survey was distributed to every municipality in Finland, and it was also open for every planner to answer. Respondents from 48 different municipalities answered to the online survey. This research was limited to only those municipalities whose planners answered the online survey. There are many municipalities that did not participate this online survey and could have given totally different answers than the municipalities that participated to online survey. The results collected in this research should not be generalised to every municipality in Finland, but to those that participated in the online survey.

The responses from online survey are based on the questions that were decided for the online survey. How responses are evaluated and understood is dependent on the researcher. With online survey large datasets can be collected and it is the evaluators task to compare the responses with each other and find the common factor out of the responses. The online survey of this research had a couple of questions that could have been shaped in the different way. These questions were hard for the planners to answer because of the wording of the questions. In the online survey was one open-ended question which was misunderstood by the planners. The question was "How would you describe the future of eParticipation". That reflected straight to the quality of the answers for that question.

Semi-structured interviews gave the possibility of discussing the questions that were presented in the online survey more freely and gain more knowledge from the planners about the questions. Semi-structured interviews give the possibility of gaining more detailed information than the online survey. The challenge with semi-structured interviews is to keep focus on the pre-determined questions. One of the semi-structured interviews was held as a group interview. With group interviews the challenge is to get each participant to give their own opinion and not to just go along with the other participants answers.

Semi-structured interviews kept well in the topic and each planner gave their own opinion for the pre-determined questions. In group interviews some participants may take the lead in the discussion, which happened also in this research interviews. The more experienced planners had more to say in the discussion and the others gave them time to talk.

The reliability of the results from this research were evaluated and improved with the reflection of the results from online survey and semi-structured interviews. Because any big differences were not found from the results between the methods the results can be considered broadly reliable.

5.5 Suggestion for further research

As said in the earlier chapters, eParticipation in urban planning have been studied and a long time. Even though there has been done plenty of studies of eParticipation in urban planning, there is still aspects of eParticipation in urban planning that needs to be studied. There is plenty of possible aspects to study the field of eParticipation in Finland. When the focus is on the municipalities, their resources are an important factor to analyse. There could be a study which studies whether the resources of municipality influence the eParticipation tools that the municipality uses.

A study for experiences by citizens from participation practises in Finnish municipalities would be useful study to measure citizens experiences towards participation practices. This kind of study has been implemented by the Department of Built Environment in Aalto University. But because planning projects vary so much, more empiric research is needed by using different methods.

Similar study to this study could be useful to implement in few years. It is important to keep on track with the development of the field that is changing constantly. In a few years many new eParticipation tools can be developed and the field of participatory in urban planning might have changed a lot. With the improved eParticipation tools the planners' opinions would be interesting to collect and analyse them again.

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